# Appendix 2. Project Description

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## 2.1 List of Consultees & method of correspondence

## 2.2 Scoping Correspondence

## 2.3 Daylight and Sunlight Report

## 2.4 Wind Microclimate Modelling

## 2.1 List of Consultees & method of correspondence

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| Project: Sea Gardens Phase 2 | | | | |
|---|---|---|---|---|
| **Consultee** | **Contact Name** | **Contact Address** | **Date of email issued** | **Email/ Letter Received** |
| An Taisce | The Manager | The National Trust for Ireland, Tailors' Hall, Back Lane, Dublin, D08 X2A3, Ireland | 31/05/2024 | |
| Birdwatch Ireland | The Manager | Unit 20, Block D, Bullford Business Campus, Kilcoole, Greystones, Co. Wicklow, A63 RW83, Ireland | 31/05/2024 | |
| Department of Agriculture, Food and the Marine | The Manager | Agriculture House, Kildare St, Dublin | 31/05/2024 | |
| Department of Communications, Climate Action and Environment | The Manager | 29-31 Adelaide Road, Dublin, D02 X285 | 31/05/2024 | |
| Department of Housing, Local Government and Heritage | The Manager | Custom House, Dublin 1, D01 W6X0 | 31/05/2024 | 30/01/2024 |
| Bus Eireann | The Manager | Busárus (Central Bus Station), Store Street, Dublin 1, D01 P6V6 | 31/05/2024 | |
| Wicklow County Council (WCC) - Planning | [redacted] | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| Wicklow County Council (WCC) - Planning | [redacted] (Senior Staff Officer) | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| WCC - Heritage Officer | [redacted] | Heritage Officer, Wicklow County Council. County Buildings, Wicklow Town. | 31/05/2024 | |
| Environment Protection Agency (EPA) | The Manager | Environmental Licensing Programme, Office of Environmental Sustainability, Environmental Protection Agency, Regional Inspectorate, Inniscarra, Co Cork | 31/05/2024 | |
| Failte Ireland | The Manager | 88-95 Amiens Street, Dublin 1, D01 WR86 | 31/05/2024 | |
| WCC - Traffic | The Manager | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| WCC - Environment | The Manager | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| WCC - Drainage / Operations | The Manager | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| WCC - Water Services | The Manager | County Buildings, Station Road, Whitegates, Wicklow, A67 FW96 | 31/05/2024 | |
| | [redacted] | | 31/05/2024 | |
| Geological Survey of Ireland | [redacted] | Geological Survey Ireland, Dept. of the Environment, Climate and Communications, Block 1, Booterstown Hall, Booterstown, Blackrock, Co. Dublin, A94 N2R6. | 31/05/2024 | 18/06/2024 |
| Iarnród Éireann (Irish Rail) | The Manager | Iarnród Eireann HQ, Connolly Station, Amien Street, Dublin 1, D01 V6V6 | 31/05/2024 | |
| Inland Fisheries Ireland (IFI) | The Manager | Inland Fisheries Ireland, 3044 Lake Drive, Citywest Business Campus, Dublin D24 CK66 Ireland | 31/05/2024 | 13/06/2024 |
| Irish Wildlife trust | The Manager | The Irish Wildlife Trust, 8 Cabra Road, Dublin 7, D07 T1W2 | 31/05/2024 | |

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| Consultee | Contact Name | Contact Address | Date of email issued | Email/ Letter Received |
|---|---|---|---|---|
| National Parks and Wildlife Service - Development Applications Unit | Executive Officer | Minister for Housing, Local Government and Heritage<br>c/o The Manager, Development Applications Unit<br>Department of Housing, Local Government and Heritage<br>Newtown Road<br>Wexford<br>Y35 AP90 | 30/01/2024 | 01/08/2024 |
| National Transport Authority (NTA) | The Manager | Dun Scéine,<br>Harcourt Lane,<br>Dublin 2,<br>D02 WT20. | 31/05/2024 | |
| The Department of Culture, Heritage and the Gaeltacht, | The Manager | 23 Kildare Street,<br>Dublin 2,<br>D02 TD30. | 31/05/2024 | |
| The Eastern & Midland Regional Assembly | The Manager | 3rd Floor North, Ballymun Civic Centre, Main Street, Ballymun, Dublin 9, Ireland. | 31/05/2024 | |
| The Health Services Executive, Environmental Health | The Manager | Rosslare Port Health, Environmental Health Service, Health Service Executive, Devereaux Building, Ballygillane Big, Rosslare Harbour Y35 D393 | 31/05/2024 | |
| The Heritage Council | The Manager | The Heritage Council<br>Áras na hOidhreachta<br>Church Lane<br>Kilkenny<br>RX95 X264 | 31/05/2024 | |
| Transport Infrastructure Ireland (TII) | The Manager | Parkgate Business Centre,<br>Parkgate Street,<br>Dublin 8,<br>D08 DK10. | 31/05/2024 | 26/06/2024 |
| The Health and Safety Authority | The Manager | Metropolitan Building, James Joyce Street, Dublin 1, D01 KY08 | 31/05/2024 | |
| National Environmental Health Service HSE | [redacted] Senior Environmental Health Officer Wicklow | | 31/05/2024 | 20/06/2024 |
| Uisce Éireann (formerly Irish Water) | The Manager | Colvill House, 24–26 Talbot Street, Dublin, Ireland | 31/05/2024 | 18/07/2024 |
| Department of Transport | The Manager | Department of Transport, Tourism and Sport, Leeson Lane, Dublin 2, Ireland. D02TR60 | 31/05/2024 | 25/06/2024 |

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| Consultee | Contact Name | Contact Address | Date of email issued | Email/ Letter Received |
|---|---|---|---|---|
| Wicklow County Childcare Committee | The Manager | Wicklow County Childcare Committee,<br>Kilmantin Hill,<br>Corporation Lands,<br>Wicklow | 31/05/2024 | |
| Office of Public Works (OPW) | The Manager | Office of Public Works Head Office,<br>Jonathan Swift Street ,<br>Trim ,<br>C15 NX36 | 31/05/2024 | |
| ESB | The Manager | ESB Head Office,<br>Two Gateway,<br>East Wall Road,<br>Dublin 3,<br>D03 A995<br>Ireland | 31/05/2024 | |
| Commission for Railway Regulation | The Manager | Temple House,<br>Temple Rd,<br>Blackrock,<br>Co. Dublin | 31/05/2024 | |
| St John of God Hospitaller Services Group | Senior Property Officer SJOG HSG | Hospitaller House,<br>Stillorgan Co. Dublin<br>A94 X5K8,<br>Ireland | | 24/06/2024 |

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## 2.2 Scoping Correspondence

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An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

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Your Ref: Sea Gardens Phase 2
Our Ref: **G Pre00346/2023** (Please quote in all related correspondence)

30 January 2024

Atkins Global
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67K5W4

Via email: [redacted]

**Proposed Pre Planning Development: Atkins Ireland Ltd on behalf of Shankill Property Investments Ltd: delivering engineering and environmental services in respect of a masterplan residential development at Ravenswell Bray County Wicklow. Sea Gardens Phase 2 is currently the subject of an EIAR. Please see attached a scoping report for the EIAR which provides further detail on the proposed development and includes an indicative layout of the EIAR.: Ravenswell Bray County Wicklow**

A chara

I refer to correspondence received in connection with the above. Outlined below are heritage-related observations/recommendations co-ordinated by the Development Applications Unit under the stated headings.

**Archaeology**

The proposed greenfield development site is located in a coastal location and north of the Dargle River in an area with potential for archaeological remains to survive. The discovery of a number of Romano-British burials in the area now occupied by Esplanade Terrace in the shoreline area of Bray town (RMP WI004-004 *burial*) demonstrates the potential for similar archaeological features to survive in the area. The development site is located south of Recorded Monuments DU026-068 *church & graveyard* (Cork Abbey) and DU026-069 *holy well*. Recorded Monuments WI004-001001 *cross-slab*, WI004-001006 *castle – towerhouse,* WI004-002 *martello tower* and DU026-070 *martello tower* are also located in the environs of the proposed development.

It is recommended that the developer engage an archaeologist to carry out a detailed and field-based archaeological impact assessment and to prepare a comprehensive report to be included in the EIAR and submitted with any future planning application. The assessment will involve documentary and cartographic research, an analysis of all previous archaeological assessments carried out in the area and fieldwork including geophysical

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survey and archaeological testing within the proposed development site (licensed under the National Monuments Acts 1930-1994).

Following completion of the geophysical survey and archaeological testing, the archaeologist shall prepare a written report, including an archaeological impact statement, to form an integral part of any EIAR and future planning application. Where archaeological material/features are shown to be present, preservation *in situ*, preservation by record (archaeological excavation) or monitoring may be required. The establishment of a 'buffer area' surrounding and including any identified archaeological features, in which no development or groundworks would be considered, might be recommended pending the results of the archaeological assessment. Mitigatory measures to ensure the preservation in-situ and/or recording of archaeological material/features should be suggested in the archaeological assessment report and the Department of Housing, Local Government & Heritage will advise further with regard to any further archaeological requirements following receipt of the assessment.

**Framework and Principles for the Protection of the Archaeological Heritage**

The developer should have regard to the archaeological policy of the Department of Housing, Local Government & Heritage as outlined in the policy document entitled *"Framework and Principles for the Protection of the Archaeological Heritage", (1999)* and summarised below.

With regard to the preservation in-situ of archaeological remains, it is stated in the Department's policy document that *"there should always be a presumption in favour of avoiding developmental impacts on the archaeological heritage. Preservation in-situ must always be the preferred option to be considered rather than preservation by record in order to allow development to proceed, and preservation in-situ must also be presumed to be the preferred option."*

It should also be noted that *"if preservation by record is to be applied the developer must accept responsibility for the costs of archaeological excavation to the extent necessitated by the development. Such costs include those arising from the preparation of a report on the excavation."*

**Wicklow County Development Plan 2022-2028**

The developer should be aware of the archaeological objectives in the current County Wicklow Development Plan, including the following:

CPO 8.1 - To secure the preservation of all archaeological monuments included in the Record of Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, and of sites, features and objects of archaeological interest generally. In the development management process, there will be a presumption of

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favour of preservation in-situ or, as a minimum, preservation by record. In securing such preservation, the Planning Authority will have regard to the advice and recommendations of the National Monuments Service of the Department of Housing, Local Government and Heritage.

CPO 8.3 - Any development that may, due to its size, location or nature, have implications for archaeological heritage (including both sites and areas of archaeological potential / significance as identified in Schedules 08.01 & 08.02 and Maps 8.01 & 8.02 of this plan) shall be subject to an archaeological assessment.

**Nature Conservation**

The Department is not in a position to make specific comment on this particular referral at this time. No inference should be drawn from this that the Department is satisfied or otherwise with the proposed activity. The Department may submit observations/recommendations at a later stage in the process.

The above observations and recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority, in his role as statutory consultee under the Planning and Development Act 2000, as amended.

You are requested to send further communications to the Development Applications Unit (DAU) at **manager.dau@npws.gov.ie**.

Is mise le meas**,**

[redacted]

**Development Applications Unit**
**Administration**

[redacted] [redacted]

**From:** [redacted]@fisheriesireland.ie>
**Sent:** 13 June 2024 14:30
**To:** [redacted]
**Subject:** Sea Gardens Phase 2 Development - EIAR

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Hi [redacted]

It is recommended to reference the following in the water EIAR and to be submitted as part of the planning application:

- An **Outline Construction Surface Water Management Plan**. The plan will set out clear guidelines and mitigation measures to ensure that surface water quality and quantity is managed throughout the construction stage to prevent impacts on the River Dargle. This should include details on project phasing. A meeting with IFI, the Project Team and the Contractor should be specified in the document . The meeting should take place before commencement on site.
- A **SuDS Preliminary Maintenance and Management Plan** for the adopted SuDS measure. The plan should include the maintenance of the proposed fuel/oil separator and agreed SuDS measures.
- Indicate the proposed outfall for the development.

Regards
Matt

[redacted]
**Fisheries Environmental Officer**

[redacted]@fisheriesireland.ie • +[redacted] www.fisheriesireland.ie • D24 CK66

Help us protect Ireland's rivers, lakes and coastlines by reporting illegal fishing, water pollution or invasive specie
Our confidential phone number is 0818 34 74 24, which is open 24 hours a day / 7 days a week.

To read our Privacy Policy and Email Disclaimer Notice, Please visit www.fisheriesireland.ie

An Roinn Comhshaoil,
Aeráide agus Cumarsáide
Department of the Environment,
Climate and Communications

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

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[redacted]
AtkinsRéalis
150 Airside Business Park
Swords
Co. Dublin, K67 K5W4

18 June 2024

**Re: Sea Gardens Phase 2 Development – EIAR Scoping Report**

**Your Ref: 0089313DG0008**
**Our Ref: 24/222**

Dear [redacted]

Geological Survey Ireland is the national earth science agency and is a division of the Department of the Environment, Climate and Communications. We provide independent geological information and gather various data for that purpose. Please see our website for data availability. We recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'.

The publicly available data referenced/presented here, should in no way be construed as Geological Survey Ireland support for or objection to the proposed development or plan. The data is made freely available to all and can be used as independent scientific data in assessments, plans or policies. It should be noted that in many cases this data is a baseline or starting point for further site specific assessments.

With reference to your email received on the 31 May 2024, concerning the Sea Gardens Phase 2 Development – EIAR Scoping Report, Geological Survey Ireland would encourage use of and reference to our datasets. Please find attached a list of our publicly available datasets that may be useful to the environmental assessment and planning process. We recommend that you review this list and refer to any datasets you consider relevant to your assessment. The remainder of this letter and following sections provide more detail on some of these datasets.

**Geoheritage**

Geological Survey Ireland is in partnership with the National Parks and Wildlife Service (NPWS, Department of Housing, Local Government and Heritage), to identify and select important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). This is addressed by the Geoheritage Programme of Geological Survey Ireland, under 16 different geological themes, in which the minimum number of scientifically significant sites that best represent the theme are rigorously selected by a panel of theme experts.

County Geological Sites (CGSs), as adopted under the National Heritage Plan, include additional sites that may also be of national importance, but which were not selected as the very best examples for NHA designation. All geological heritage sites identified by Geological Survey Ireland are categorised as CGS pending any further NHA designation by NPWS. CGSs are now routinely included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system. CGSs can be viewed online under the Geological Heritage tab on the online Map Viewer.

The audit for Co. Wicklow was carried out in 2014. The full report details can be found here. The audit for Dún Laoghaire-Rathdown was carried out in 2014. The full report details are available here. **Our records show that there is a CGS in the vicinity of the proposed residential development project.**

> **Killiney Bay**, Co Dublin. (Central ITM: 326272, 222516). Under IGH theme 'IGH 7 Quaternary'. Link to site report at DLR007. A 5km long coastal section exposes a succession of several units of glacial till. A particularly impressive exposure into deep till with many sedimentological characteristics exposed.

With the current plan, there are no envisaged impacts on the integrity of current CGSs by the proposed development. However, if the proposed development plan is altered, please contact Clare Glanville (Clare.Glanville@gsi.ie) for further information and possible mitigation measures if applicable.

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**Groundwater**

Geological Survey Ireland's Groundwater and Geothermal Unit, provides advice, data and maps relating to groundwater distribution, quality and use, which is especially relevant for safe and secure drinking water supplies and healthy ecosystems. Proposed developments need to consider any potential impact on specific groundwater abstractions and on groundwater resources in general. We recommend using the groundwater maps on our Map viewer which should include: wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps. Background information is also provided in the Groundwater Body Descriptions. Please read all disclaimers carefully when using Geological Survey Ireland data.

**The Groundwater Data Viewer indicates an aquifer classed as a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones' underlies the proposed development. The Groundwater Vulnerability map indicates the area covered is classed as 'Low' to 'Moderate' Vulnerability.**

GWClimate is a groundwater monitoring and modelling project that aims to investigate the impact of climate change on groundwater in Ireland. This is a follow on from a previous project (GWFlood) and the data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the Map viewer.

Geological Survey Ireland has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. A Groundwater Protection Scheme provides guidelines for the planning and licensing authorities in carrying out their functions, and a framework to assist in decision-making on the location, nature and control of developments and activities in order to protect groundwater. **The Groundwater Protection Response overview and link to the main reports is here: https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/projects/protecting-drinking-water/what-is-drinking-water-protection/county-groundwater-protection-schemes/Pages/default.aspx**

**Geological Mapping**

Geological Survey Ireland maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible. We would encourage you to use these data which can be found here, in your future assessments.

**Please note we have recently launched QGIS compatible bedrock (100K) and Quaternary geology map data, with instructional manuals and videos. This makes our data more accessible to general public and external stakeholders. QGIS compatible data can be found in our downloadable bedrock 100k .zip file on the Data & Maps section of our website.**

**Geotechnical Database Resources**

Geological Survey Ireland continues to populate and develop our national geotechnical database and viewer with site investigation data submitted voluntarily by industry. The current database holding is over 7500 reports with 134,000 boreholes; 31,000 of which are digitised which can be accessed through downloads from our Geotechnical Map Viewer. We would encourage the use of this database as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of proposed development areas. This information may be beneficial and cost saving for any site-specific investigations that may be designed as part of the project.

**Geohazards**

Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides, flooding and coastal erosion are the most prevalent of these hazards. We recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.

Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated Map Viewer. Associated guidance documentation relating to the National Landslide Susceptibility Map is also available.

Geological Survey Ireland also engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans, and is described in more detail under 'Groundwater' above.

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Coastal Vulnerability while seen as a potential geohazard, is discussed in more detail under our marine and coastal unit information below.

**Natural Resources (Minerals/Aggregates)**
Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our Minerals section of the website. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our Map Viewer.

**We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area.** In keeping with a sustainable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed development are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.

**Geochemistry of soils, surface waters and sediments**
Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality. Tellus is a national-scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland. At present, mapping consists of the border, western and midland regions. Data is available at https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx.

**Marine and Coastal Unit**
Our marine environment is hugely important to our bio-economy, transport, tourism and recreational sectors. It is also an important indicator of the health of our planet. Geological Survey Ireland's Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector. The programme delivers a wide range of benefits to multi-sectoral end-users across the national blue economy with an emphasis on enabling our stakeholders. Demonstrated applications for the use of INFOMAR's suite of mapping products include Shipping & Navigation, Fisheries Management, Aquaculture, Off-shore Renewable Energies, Marine Leisure & Tourism and Coastal Behaviour.

INFOMAR data such as bathymetry, backscatter, sediment classification, shipwrecks and survey metadata can be downloaded free of charge in a variety of formats at the INFOMAR Marine Data Download Portal: https://experience.arcgis.com/experience/9213db3d963d4f3cab3a220323d7cd4e/page/Page-1/?views=Download-Vector-Datasets

INFOMAR also produces a wide variety of seabed mapping products that enable public and stakeholders to visualize Ireland's seafloor environment https://www.infomar.ie/maps/downloadable-maps/maps. Story maps have also been developed providing a different perspective of some of the bays and harbors of the Irish coastline. We would therefore recommend use of our Marine and Coastal Unit datasets available on our website and Map Viewer.

The Marine and Coastal Unit also participate in coastal change projects and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information on these projects can be found here.

**National Coastal Change Assessment**
Geological Survey Ireland is undertaking a National Coastal Change Assessment. As part of this initiative two mapping products will be delivered for the entire Irish coastline: **coastal vulnerability mapping and shoreline change.**

Coastal vulnerability maps will provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise through the use of a **Coastal Vulnerability Index** (CVI). Currently the project is being carried out on the east coast and will be rolled out nationally over the next couple of years, detailed information and maps are available here. **Shoreline change rates** for the period 2000 to 2023 are being prioritised and will be released by county on a rolling basis over the next 12 months. Shoreline change rates database and reports will be accessible from GSI web mapping viewers. These suite of coastal mapping products are aimed at coastal managers to prioritise or concentrate efforts on adaptation.

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**Guidelines**

The following guidelines may also be of assistance:

- Institute of Geologists of Ireland, 2013. Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements.

- EPA, 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)

**Other Comments**

Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie, 01-678 2795.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to the Geological Survey Ireland Planning Team at GSIPlanning@gsi.ie.

Yours sincerely,

**Geoheritage and Planning Programme**

Enc: Table - Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes.

An Roinn Comhshaoil, Aeráide agus Cumarsáide
Department of the Environment, Climate and Communications

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

An Roinn Comhshaoil, Aeráide agus Cumarsáide
Department of the Environment, Climate and Communications

# Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes

**following European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018**
**(S.I. No. 296 of 2018)**

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| Geological Survey Ireland Programme | Dataset | Relevant EIA Topic | Coverage | Description / Notes / Limitations | Link to Geological Survey Ireland map viewer |
|---|---|---|---|---|---|
| | | | | | |
| Geohazards | Landslide: National landslide database and landslide susceptibility map | Land & Soil/Climate/Landscape | National | Associated guidance documentation relating to the National Landslide Susceptibility Map is also available. | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b68cf1e4a9044a5981f950e9b9c5625c |
| Geohazards | Groundwater Flooding (Historic) | Water | Regional | Provide information of historic flooding, both surface water and groundwater. [A lack of flooding presented in any specific location of the map only indicates that a flood has not been detected. It does not indicate that a flood cannot occur in that location at present or in the future] | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc |
| Geohazards | Groundwater Flooding (Predictive) | Water | Regional | Provides information on the probability of future karst groundwater flooding (where available). [The maps do not, and are not intended to, constitute advice. Professional or specialist advice should be sought before taking, or refraining from, any action on the basis of the flood maps] | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc |
| Geohazards | Radon Map | Land & Soils/Air | National | | http://www.epa.ie/radiation/radonmap/ |
| Geoheritage | County Geological Sites as adopted by National Heritage Plan and listed in County Development Pla | Land & Soils/Landscape | Regional | All geological heritage sites identified by Geological Survey Ireland are categorised as CGS pending any further NHA designation by NPWS. | https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228 |
| Geological Mapping | Bedrock geology: | Land & Soils | National | 1:100,000 scale and associated memoirs. | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7ee1b6ab8d5&scale=0 |
| Geological Mapping | Bedrock geology: | Land & Soils | Regional | 1:50,000 scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7ee1b6ab8d5&scale=0 |
| Geological Mapping | Quaternary geology: Sediments | Land & Soils | National | 1:50,000 scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7ee1b6ab8d5&scale=0 |
| Geological Mapping | Quaternary geology: Geomorphology | Land & Soils | National | 1:50,000 scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7ee1b6ab8d5&scale=0 |
| Geological Mapping | Physiographic units: | Land & Soils | National | Broad-scale physical landscape units mapped at 1:100,000 scale in order to be represented as a cartographic digital map at 1:250,000 scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=afa76a420fc54877843aca1bc075c62b |
| Geological Mapping | GeoUrban: Spatial geological data for the greater Dublin and Cork areas | Land & Soils | Regional | includes 3D models | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9768f4818b79416093b6b2212a850ce6&scale=0 |
| Geological Mapping | Geotechnical database | Land & Soils | National | Digitised geotechnical and Site Investigation Reports and boreholes which can be accessed through online downloads | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=a2718be1873d47a585a3f0415b4a724c |
| Goldmine | Historical data sets including geological memoirs and 6" to 1 mile geological mapping records | land & Soils/Water | National | available online | https://secure.dccae.gov.ie/goldmine/index.html |
| Groundwater & Geothermal | Groundwater resources (aquifers) | Water | National | Data limited to 1:100,000 scale; sites should be investigated at local scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Groundwater recharge. | Water | National | Data limited to 1:40,000 scale; sites should be investigated at local scale; long term annual average recharge | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Groundwater vulnerability. | Water | National | Data limited to 1:40,000 scale; sites should be investigated at local scale | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Group scheme and public supply source protection areas. | Water | National | Not all PWS / GWS have SPZ / ZOC. Check with IW / coco / NFGWS for private supplies. | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Groundwater Protection Schemes | Water | National | Data is limited to scale of 1:40,000. Data does not include all of the source protections areas | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Catchment and WFD management units. | Water | National | | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | karst specific data layers | water | National | For areas underlain by limestone, includes karst features, tracer test database; turlough water levels (gwlevel.ie). | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Wells and Springs | Water | National | Not comprehensive, there may be unrecorded wells and springs | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef |
| Groundwater & Geothermal | Groundwater body Descriptions | Water | National | Not exhaustive; only those in designated SACs; could be other GWDTEs; for more information contact NPWS / EPA / site investigations | https://www.gsi.ie/en-ie/programmes-and-projects/groundwater-and-geothermal-unit/activities/understanding-ireland-groundwater/Pages/Groundwater-bodies.aspx |
| Groundwater & Geothermal | Geothermal Suitability maps | land & Soils/Water | National | Also, Roadmap for a Policy and Regulatory Framework for Geothermal Energy, November 2020 | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9ee46bee08de41278b90a991d60c0b9e |
| Marine & Coastal Unit | INFOMAR - Ireland's national marine mapping programme; providing key baseline data for Ireland's | Water | National | | https://secure.dccae.gov.ie/GSI/INFOMAR_VIEWER/ |
| Marine & Coastal Unit | CHERISH - Coastal change project (Climate, Heritage and Environments of Reefs, Islands, and Headla | Water | Regional | | http://www.cherishproject.eu/en/ |
| Marine & Coastal Unit | Coastal Vulnerability Index (CVI). | water /Land & Soils | Regional | Currently the project is being carried out on the east coast and will be rolled out nationally | https://www.gsi.ie/en-ie/programmes-and-projects/marine-and-coastal-unit/projects/Pages/Coastal-Vulnerability-Index.aspx |
| Minerals | Aggregate potential | Land & Soils/Material Assets | National | Consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c285a49413aa6f1344416dc9956 |
| Minerals | Active quarries | Land & Soils | National | | https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c285a49413aa6f1344416dc9956 |
| Minerals | Historic mines | Land & Soils/Cultural Heritage | National | Inventory and Risk Classification 2009. Environmental Protection Agency, Economic Minerals Division and Geological Survey Ireland (DECC). | https://gis.epa.ie/EPAMaps/default?easting=?&northing=?&lid=EPA:LEMA_Facilties_Extractive_Facilities https://www.epa.ie/enforcement/mines/ |
| Tellus | Geochemical data: multi-element data for shallow soil, stream sediment and stream water | Land & Soils | Regional | A national mapping programme | https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707ff72f754 |
| Tellus | Airborne geophysical data including radiometrics, electromagnetics and magnetics | Land & Soils | Regional | A national mapping programme | https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707ff72f754 |
| Tellus | urban geochemistry mapping (Dublin SURGE project), | Land & Soils | Regional | | https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707ff72f754 |

**Notes:**

**1. The maps and data listed above are available on the Geological Survey Ireland map viewer https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx**

**2. Please read all disclaimers carefully when using Geological Survey Ireland data**

**3. Geological Survey Ireland and Irish Concrete Federation published guidelines for the treatment of geological heritage in the extractive industry in 2008.**

Outlook

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## TII24-127551 - EIAR Scoping for Residential development at Ravenswell Bray County Wicklow. Phase 2: Sea Gardens.

**From** [redacted]@tii.ie>
**Date** Wed 2024-06-26 8:55 AM
**To** [redacted]@atkinsrealis.com>; [redacted]@atkinsrealis.com>

**A Chara,**

Thank you for your correspondence of 31 May 2024 regarding the above. The position in relation to your enquiry is as follows.

Transport Infrastructure Ireland (TII) wishes to advise that it is not in a position to engage directly with planning applicants with respect to proposed developments. TII will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the planning acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official national road and light rail policy and guidelines including Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012) and TII Publications.

Regard should also be had to other relevant guidance available at www.TII.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road networks.

The project promoter should have regard, inter alia, to the following:

Having regard to the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports, 2022 it is recommended as appropriate that the national road and light rail networks be recognised as strategic transport assets under "material assets". EIAR assessment and mitigation should have regard to the following:

- **National Roads:** Official policy for development at or near national roads is set out in the DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (2012) available at https://www.gov.ie/en/collection/85b83-planning-guidelines-standards/

- **TII Publications:** In addition, as part of TII's responsibilities for managing and improving the country's national road and light rail networks, TII sets development guidance and standards for traffic and road assessments and construction that may be necessary by reason of proposed development location, scale or typology to be prepared to accompany applications for developments or works. Technical guidance and standards are contained in TII Publications, available at https://www.tiipublications.ie/.

In addition, the EIAR should have regard to, inter alia, the following:

**National Road Network:**

- TII would be specifically concerned with the potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development,

- Consultations should be had with the relevant Local Authority/National Roads Design Office (RDO) with regard to locations of existing and future national road schemes,

- The EIAR should have regard to any prior Environmental Impact Statement or Assessment Report and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts,

- The EIAR should have regard to the provisions of Chapter 3 of the DoECLG Spatial Planning and National Roads Guidelines in the assessment.

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**TII Publications:**

- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (TII Publication No. PE-PDV-02045) should be referred to in relation to the proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the Guidelines which addresses requirements for sub-threshold TTA,

- The designers and assessors are asked to consult TII Publications to determine whether a Road Safety Audit is required.

**TII environmental assessment guidance:**

- The EIAR should have regard to TII's Environmental Assessment and Construction Guidelines, including the Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014),

- The EIAR should consider the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018)) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes (March 2014)),

**Haul routes utilising the national road network:**

- Elements of the national road network are operated and managed by a combination of Public Private Partnerships (PPP) Concessions, Motorway Maintenance and Renewal Contractor (MMaRC) and local road authorities in association with TII. In relation to haul route identification, the applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed to ascertain any operational requirements, including delivery timetabling, etc. to ensure that the strategic function of the national road network is safeguarded.

- Separate structure approvals/permits, and other licences and works-specific deeds of indemnity may be required in connection with the proposed haul route, including where temporary modification to the road network may be required. Consultation with relevant local authorities, PPP Companies and MMaRC

Contractors may also be required.

- All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed, including abnormal weight loads. Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal loads (e.g. tearing of the surface course, etc.) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site.

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Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development-specific issues should be addressed in accordance with best practice.

I trust that the above comments are of use in your EIAR preparation.

**Yours sincerely,**

[redacted]
**Regulatory & Administration Executive**
**Transport Infrastructure Ireland**

www.tii.ie info@tii.ie +353 (0)1 646 3600

In accordance with TII's Right to Disconnect policy, if you are receiving this email outside of normal working hours, I do not expect a response or action outside of your own working hours unless it is clearly noted as requiring urgent attention.

De réir pholasaí BIÉ An Ceart gan a bheith Ceangailte, má tá an ríomhphost seo á fháil agat lasmuigh de na gnáthuaireanta oibre, nílim ag súil le freagra ná le gníomh uait lasmuigh de do ghnáthuaireanta oibre féin mura bhfuil sé ráite go soiléir go bhfuil gá gníomhú go práinneach.

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Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag https://www.tii.ie/about/about-tii/Data-Protection/?set-lang=ga

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Córas r-phoist BIE: Tá an ríomhphost seo agus aon chomhaid a tharchuirtear leis faoi rún agus beartaithe lena n-úsáid ag an duine aonair nó ag an eintiteas a bhfuil siad dírithe chuige/chuici

amháin. Más rud é go bhfuair tú an ríomhphost seo trí bhotún, cuir sin in iúil do postmaster@tii.ie, le do thoil, agus scrios an ríomhphost bunaidh agus aon cheangaltáin.

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AtkinsRéalis
150 Airside Business Park
Swords ,
Co. Dublin,
Ireland
K67 K5W4

**Date:** 20th June 2023
**Our Reference**: 3987
**Applicant:** Shankill Property Investments Ltd

**Proposal:** 341no. residential units (comprising 200 houses and duplexes, 109 apartments above retail and 32 units above creche/retail), a hotel, 3,000m2 commercial property, access road, creche, car parking spaces (including in-curtilage, on-street, surface level and undercroft car parking), cycle storage areas, bin stores, open space / landscaped areas, and all associated ancillary works in a new community on a 9.9 ha parcel of land

Dear Sir/Madam,

The HSE Environmental Health Consultation report regarding the above proposed application is attached below. The following HSE departments were made aware of the consultation request for the proposed development on 31st May 2024.

- Emergency Planning – Brendan Lawlor
- Estates – Helen Maher/Stephen Murphy
- Director of National Health Protection – Eamonn O' Moore/ Ina Kelly
- CHO – Martina Queally

All commitments to future actions including mitigation and further testing have been taken as read and all data results have been accepted as accurate. No additional investigations or measurements were undertaken. This report only comments on Environmental Health impacts of the scoping request. If you have any queries regarding this report the contact is Mr Eugene Monahan Principal Environmental Health Officer who will refer your query to the appropriate person.

If you have any queries regarding the report, please contact me.

Yours Sincerely,

[redacted]

**Principal Environmental Health Officer**

**National Environmental Health Service**

**HSE EIA SCOPING**

**Environmental Health Service Consultation Report**

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**Report to:** AtkinsRéalis [redacted]
**Type of consultation:** EIAR Scoping
**Applicant:** Shankill Property Investments Ltd
**Proposal:** 341no. residential units (comprising 200 houses and duplexes, 109 apartments above retail and 32 units above crèche/retail), a hotel, 3,000m2 commercial property, access road, crèche, car parking spaces (including in-curtilage, on-street, surface level and under croft car parking), cycle storage areas, bin stores, open space / landscaped areas, and all associated ancillary works in a new community on a 9.9 ha parcel of land

## Introduction

This report only comments on Environmental Health impacts of the proposed development. The Environmental Health Service (EHS) has made observations and submissions on the following specific environmental health areas. Furthermore a site visit was conducted by Ms Joanna Troughton Senior Environmental Health Officer**.**

## Description of proposed development

The proposal is for the development of ca. 341no. residential units (comprising 200 houses and duplexes, 109 apartments above retail and 32 units above creche/retail), a hotel, 3,000m2 commercial property, access road, creche, car parking spaces (including in-curtilage, on-street, surface level and undercroft car parking), cycle storage areas, bin stores, open space / landscaped areas, and all associated ancillary works in a new community on a 9.9 ha parcel of land within the former Golf Course lands to the north of Bray Town Centre, within the administrative boundary of Wicklow County Council. Based on a preliminary phasing plan, it is anticipated that occupancy of homes will commence in 2026, with the Phase 2 development completed by 2030.

## General Scoping Introduction

The following documents should be taken into consideration when preparing the Environmental Impact Assessment Report:
• Guidelines on the information to be contained in EIS (2002),
• Advice Notes on Current Practice in the preparation of EIS (2003),
• Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment
https://www.housing.gov.ie/sites/default/files/publications/files/guidelines_for_planning_authorities_and_an_bord_pleanála_on_carrying_out_eia_-_august_2018.pdf
EU publication: Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report, EU, 2017
http://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf
Adoption of the Directive (2014/52/EU) in April 2014 initiated a review of the above guidelines. The draft new guidelines can be seen at:
http://www.epa.ie/pubs/consultation/reviewofdrafteisguidelinesadvicenotes

Generally the Environmental Impact Assessment should examine all likely significant impacts and provide the following information for each:

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a) Description of the receiving environment
b) The nature and scale of the impact
c) An assessment of the significance of the impact
d) Proposed mitigation measures
e) Residual impacts

Directive 2014/52/EU has an enhanced requirement to assess likely significant impacts on Population and Human Health. The impacts on human health must be fully assessed in the EIAR, it is recommended that the wider determinants of health and wellbeing are considered. Guidance on wider determinants of health can be found at www.publichealth.ie In addition to any likely significant negative impacts from the proposed development, any positive likely significant impacts should also be assessed.

The Environmental Health Service (EHS) recommends that the following matters are included and assessed in the EIAR:
• Public Consultation
• Population and Human Health
• Water (Hydrology and Hydrogeology)
• Land and Soils
• Air, Dust and Odour
• Climate Change and Opportunity for Health Gain
• Noise and Vibration
• Waste Management
• Ancillary Facilities
• Cumulative Impacts

**Public Consultation**

Public consultation, where the local community is fully informed of the proposed development must be undertaken. Members of the public should be given sufficient opportunities to express their views on the proposed development. The applicant should consider the appointment of a community liaison officer.

Early and meaningful public consultation with the local community should be carried out to ensure all potentially significant impacts have been adequately addressed. All parties affected by the proposed development must be fully informed of what the proposal entails especially with regard to potential impacts on surrounding areas. The Environmental Impact Assessment Report (EIAR) should clearly demonstrate the link between public consultations and how those consultations have influenced the decision-making process in the EIAR.

To assist with the consultation and planning process it is recommended that the applicant develops a dedicated website for the proposed development. All correspondence, maps, project updates and documentation including the EIAR should be uploaded to the website. A good relationship between the contractor and local residents who may be impacted by the construction of the proposed development is crucial. The EHS recommends that a community liaison officer is appointed by the contractor, their details should be provided to local residents.

**Assessment of Consideration of Alternatives**

The EIAR should include a consideration of alternatives as part of the EIAR.

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**Noise and Vibration**

The potential impacts for noise and vibration during the construction phase of the proposed development on all noise sensitive locations must be considered in the EIAR. The EIAR should outline all proposed mitigation measures to minimise noise and vibration during the construction phase of the development.

The EH service recommends that operating times during the construction phase are limited close to residential areas as follows in order to minimise the impact of noise on residents.

| | |
|---|---|
| Monday to Friday | 08:00 –18:00 |
| Saturday | 09:00 – 13:00 |
| Sundays and Public Holidays - No noisy operations on site. | |

Noise can give rise to a nuisance for residents and may impact negatively on public health. The applicant should consider Good Acoustic Design measures in the design of the buildings to protect the residential amenity of future residents. It has been noted that the site is adjacent to industrial premises therefore, the consideration of acoustic design is imperative at this stage to protect the health and wellbeing of future residents.

**Air Quality**

Due to the nature of the proposed construction works; generation of airborne dust has the potential to have significant impacts on sensitive receptors. The applicant must also assess the potential odour associated with the development to include nearby sources i.e. Bray pumping station.
A Construction Environmental Management Plan (CEMP) should be included in the EIAR that details dust control and mitigation measures.

Measures should include:
• Sweeping of hard road surfaces
• Provision of a water bowser on site, regular spraying of haul roads
• Wheel washing facilities at site exit
• Restrict speed on site
• Provide covers to all delivery trucks to minimise dust generation
• Inspect and clean public roads in the vicinity if necessary
• Material stockpiling provided with adequate protection from the wind
• Dust monitoring at the site boundary
• Truck inspection and maintenance plan
• Details of a road maintenance agreement between the operator and the Local Roads Authority to clarify responsibility for the upkeep and repair of access roads during the construction phase of the project.

**Surface and Ground Water Quality**

The applicant should consider the impact of the proposed development on surrounding surface water and hydrogeological environments including flood risk and surface water drainage.

The design of the surface water management system for the development should consider the changing precipitation patterns as a result of climate change.

Public and Group Water Scheme sources and supplies should be identified in addition to any private wells supplying potable water to houses in the vicinity of the proposed development.

Measures to ensure that all sources and supplies are protected should be described in the EIAR.

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**Climate Change**

In light of the current climate emergency declared by the Government it is essential that all buildings implement energy efficient and green technologies in order to reduce the carbon footprint of the development and to minimise greenhouse gas emissions.

The applicant should outline specific details of climate initiatives and fuel and energy conservation measures which are to be implemented with regard to the design, procurement, construction and operation of the houses and apartments in the proposed development site.

The EIAR should clearly illustrate how the development contributes to obligations under the Climate Action and Low Carbon Development Act 2015 and amendment of 2021 and the most recent Climate Action Plan 2023 published in December 2022.

**Open Space and Recreation – Healthy Ireland Framework**

Recreational green spaces are fundamental to high density development as they will promote health and well being of residents who will occupy the accommodation. It is well established that there is a need to reconnect urban society with nature in order to promote health. Adequately sized public and private open space must be provided within the development.

The pedestrian and cycle ways associated with the proposed development should contribute towards meeting the objectives of the Healthy Ireland Framework 2013-2025. The inclusion of walkways and cycle paths as part of the proposed development will be a positive factor in meeting this aim and in providing opportunities for health gain. The Environmental Health Service recommends that, where possible, pedestrian areas should be accessible to wheelchairs, pushchairs and mobility vehicles in order that all ages and all levels of mobility can access recreational amenities. The applicant should ensure that all internal roads within the housing development are designed in accordance with Design Manual for Urban Roads and Streets (DMURS) Manual.

**Pest Control**

The disturbance of ground during construction may give rise to increased rodent activity. The EHS recommend that the applicant implements appropriate pest control measures during the construction phase in order to prevent a nuisance and protect public health.

[redacted]

Environmental Health Officer

Environment and Climate Change National Support Unit

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An Roinn Iompair
Department of Transport

RECEIVED: 24/03/2025

WS Atkins Ireland Limited
150-155 Airside Business Park
Swords
Co. Dublin
K67 K5W4

25th June 2024

**Re: Sea Gardens Phase 2 Development – EIAR**

The Department of Transport welcomes the opportunity to provide observations on the Sea Gardens Phase 2 development EIA Scoping Report.

There have been important policy developments which are relevant to accessible, integrated and sustainable public transport. The Department of Transport (DoT) considers these should be reflected in the proposed plan.

**Accessible public transport for All, and especially for Persons with Disabilities, Reduced mobility and Older People**

- the "whole of Government" **National Disability Inclusion Strategy (NDIS) 2017-2022** includes specific actions assigned to local authorities. For example, action 108 relates to the 'dishing' of footpaths and action 109 relates to accessible infrastructure, including bus stops. Lack of dishing is often cited as a major concern for wheelchair users. The National Disability Inclusion Strategy came to an end at the end of 2022. The Department of Children, Equality, Disability, Integration and Youth are working with the Disability Inclusion Strategy Steering Group to commence work on the development of a UNCRPD implementation strategy.

- the **United Nations Convention on the Rights of Persons with Disabilities (UNCRPD**) ratified by Ireland in 2018. The UNCRPD puts obligations on State Parties to ensure access for persons with disabilities to, for example, the physical environment and transportation in both urban and rural areas.

**Lána Líosain, Baile Átha Cliath, D02 TR60, Éire**
Leeson Lane, Dublin 2, D02 TR60, Ireland
T +353 1 6707444 | info@transport.gov.ie
www.gov.ie/transport

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- the Design Manual for Urban Roads and Streets (**DMURS) Interim Advice Note – Covid-19 Pandemic Response** published in 2020. It includes guidance that designers should ensure that
    - measures align with the principles of universal design,
    - consider Government policy on accessibility for people with disabilities and
    - consult people with disabilities to further appraise measures.
- References in the draft Plan to the 2019 version of DMURS should be replaced with references to the 2020 DMURS Interim Advice Note – Covid-19 Pandemic Response.
- To make public transport fully accessible to people with disabilities requires a '**whole journey approach**'. This refers to all elements that constitute a journey from the starting point to destination. Developers are a key stakeholder by ensuring a universal design approach to the built environment'. This including footpaths, tactile paving, dished footpaths, roads and pedestrian crossing points.

The Department of Transport recommends that the applicant/developer should ensure that all proposed haul routes to be traversed are suitable to accommodate construction traffic and the transport of materials without damaging the condition of the road.

The applicant/developer should also ensure that the proposed works will not adversely damage the integrity of any existing bridge structure hydraulically or by traffic loading.

Separate structure approvals/permits, and other licences should be obtained where required in connection with all proposed haul routes.

The applicant/developer should ensure appropriate traffic calming measures suitable to the surrounding environment and education facilities to ensure safe transport in accordance with national policy.

The applicant/developer should ensure appropriate provision of active travel measures associated with the development and surrounding area.

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The applicant/developer should ensure appropriate cross section of the adjacent existing roads and proposed roads facilitating the development to ensure safe transport of all required multi modal aspects of the development.

*Central Policy, Coordination and Reform*
**An Roinn Iompair**
*Department of Transport*
**Lána Líosain, Baile Átha Cliath, D02 TR60**
Leeson Lane, Dublin, D02 TR60
T +353 (0)1 604 1177
gcu@transport.gov.ie www.gov.ie/transport

Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
D01 WA07
Éire

Uisce Éireann
PO Box 6000
Dublin 1
D01 WA07
Ireland

**T:** +353 1 89 25000
**F:** +353 1 89 25001
**www.water.ie**

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Uisce Éireann Ref: PN24000005894

Atkins
150 Airside Business Park
Swords
Dublin
K67K5W4

[redacted]

18 July 2024

Re: EIAR Scoping Request – Large Scale Residential Development at Ravenswell Bray, Co. Wicklow

A Chara,

Uisce Éireann (UÉ) has received your Environmental Impact Assessment (EIA) scoping request relating to the proposed Phase 2 of the masterplan site for mixed use development at Ravenswell Bray, Co. Wicklow. Phase 2 known as Sea Gardens includes 341 residential units, hotel, commercial and retail properties and a creche.

Having reviewed the documentation submitted, Uisce Éireann strongly recommend the following items are addressed in the Environmental Impact Assessment Report and planning application, as appropriate for your proposal to avoid any unnecessary delays within the consenting process..

***Existing Uisce Éireann Assets***

There are number of Uisce Éireann watermains and sewer and stormwater pipes located within and around the periphery of the subject site within the road reserves. The development appears to include proposals to build over or traverse these public assets in some locations specifically in the southwestern and northern eastern portions of the site. When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the applicant's site and lands to the public network and any drinking water abstraction

**Stiúrthóirí / Directors:** Tony Keohane (Cathaoirleach / Chairman), Niall Gleeson (POF / CEO), Christopher Banks, Fred Barry, Gerard Britchfield, Liz Joyce, Patricia King, Eileen Maher, Cathy Mannion, Michael Walsh.
**Oifig Chláraithe / Registered Office:** Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a design activity company, limited by shares.
Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

catchments to ensure these are included and fully assessed. Further details on existing public water and wastewater infrastructure, can be obtained by emailing an Ordnance Survey map clearly identifying the proposed location and layout of your intended development to datarequests@water.ie.

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Building structures or works over, or near Uisce Éireann infrastructure is prohibited. Any impact of this nature inhibiting access for maintenance or endangering structural or functional integrity of public infrastructure is not permitted. Where building near Uisce Éireann assets, your designs and layouts are required to be agreed with the Uisce Éireann Diversions section prior to a planinng application being lodged. Detailed designs and layouts should be submitted to diversions@water.ie well in advance of submitting your plannning application to avoid unnesscessary dealys witnin the consenting process.

Please also note, as an applicant you may be required to survey the site to determine the exact location of the assets. Any trial investigations should be carried out with the agreement and in the presence of Uisce Éireann. You will also be required to provide evidence of separation distances between the existing Uisce Éireann assets and proposed structures, other services, trees, etc. are in accordance with the Irish Water Codes of Practices and Separation distances. Separation distances of proposed structures shall be in accordance with the Uisce Éireann Codes of Practice and Standard Details.

In addition to protection and maintenance of in situ public assets, there are two large public wastewater assets in the wider vicinity of this development. Applicants should be aware that the operation & maintenance of these assets can result in the emission of odours during activities like desludging, cleaning and mechanical testing.

The storm water holding tank known as the Old Golf Course wastewater pump station (WwPS) adjoins the development site to the north which is owned and operated under contract by Uisce Éireann. It is a requirement of UE that 24/7 access is maintained to the stormwater tank as the continued operation of this tank is required to meet storm water overflow compliance standards.

The main Bray wastewater pumping station is directly south across the river. Where all efforts will be made by operators to minimise odour nuisance there is still the potential for nearby developments to experience odour. This should be considered as part of the development.

***Planned Future Uisce Éireann Assets***

As part of the strategic future planning of the Bray area Uisce Éireann have a completed a Drainage Area Study. Although only at concept stage, upgrades at the Bray Pumping Station and improvements to the network will be required to facilitate development in the area. Upgrades of the existing 900mm sewer along Ravenswell Road and the existing sewer within the southwestern portion of the site are planned. Access to the sewer will be required by Uisce Éireann for these upgrades and this must be considered as part of your planning application.

Uisce Éireann is a statutory consultee under the Planning and Development Act 2000 (as amended). Uisce Éireanns job is to deliver the highest quality drinking water to taps every day and ensure that wastewater is properly treated and safely returned to the environment. To ensure the satisfactory completion of a development, any permission, approval, or consent granted pursuant to the Planning and Development Act 2000 (as amended) that requires a new connection(s) to water services should include a condition that requires the applicant or developer to enter into a connection agreement(s) with Uisce Éireann prior to the commencement of development. Any person discharging trade effluent to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). Trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended).

***Connections to Service Development Proposals***

Uisce Éireann ackniowledges receipt of your Pre–Connection Enquiry (PCE) (CDS23009468) re feasibility of connection(s) to public water and wastewater infrastructure. It is strongly reccomended the outcome of this PCE, a letter of Confirmation of Feasibility, must be obtained from Uisce Éireann prior to the lodgement of you planning application and submitted with your planning application to avoid unnecessary delays within the consenting process.

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In addition to the specific items outlined above, the following, non-exhaustive aspects of water services should also be considered in the scope of your EIA where relevant;

a) Where the development proposes the backfilling of materials, the applicant is required to include a waste sampling strategy to ensure the material is inert.

b) Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the environmental management plan and incident response.

c) Any and all potential impacts on the nearby public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/ surface water interactions.

d) Impacts of the development on the capacity of water services (*i.e. do existing water services have the capacity to cater for the new development*). This is confirmed by Uisce Éireann in the form of a Confirmation of Feasibility (COF). If a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Uisce Éireann to determine the feasibility of connection to the Uisce Éireann network.

e) The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the proposed development.

f) In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an Uisce Éireann collection network.

g) In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks and potential measures to minimise and or / stop surface waters from combined sewers.

h) Any physical impact on Uisce Éireann assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets.

i) When considering a development proposal, the applicant is advised to determine the location of public water services assets, possible connection points from the

applicant's site / lands to the public network and any drinking water abstraction catchments to ensure these are included and fully assessed in any pre-planning proposals. Details, where known, can be obtained by emailing an Ordnance Survey map identifying the proposed location of the applicant's intended development to datarequests@water.ie

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j) Other indicators or methodologies for identifying infrastructure located within the applicant's lands are the presence of registered wayleave agreements, visible manholes, vent stacks, valve chambers, marker posts etc. within the proposed site.

k) Any potential impacts on the assimilative capacity of receiving waters in relation to Uisce Éireann discharge outfalls including changes in dispersion / circulation characterises. Hydrological / hydrogeological pathways between the applicant's site and receiving waters should be identified within the report.

l) Any potential impact on the contributing catchment of water sources either in terms of water abstraction for the development (*and resultant potential impact on the capacity of the source*) or the potential of the development to influence / present a risk to the quality of the water abstracted by Uisce Éireann for public supply should be identified within the report.

m) Where a development proposes to connect to an Uisce Éireann network and that network either abstracts water from or discharges wastewater to a "protected"/ sensitive area, consideration as to whether the integrity of the site / conservation objectives of the site would be compromised should be identified within the report.

n) Uisce Éireann does not permit building over of its assets. As an applicant you are required to;

- survey the site to determine the exact location of the assets. Any trial investigations should be carried out with the agreement and in the presence of Uisce Éireann.
- Provide evidence of separation distances between the existing Uisce Éireann assets and proposed structures, other services, trees, etc. have to be in accordance with the Irish Water Codes of Practice and Standard Details.

o) Where a diversion of Public Infrastructure may be required subject to layout proposal of the development and separation distances, the applicant is required to submit a Diversions Enquiry to diversions@water.ie

p) Mitigation measures in relation to any of the above ensuring a zero risk to any Uisce Éireann drinking water sources (Surface and Ground water).

**Please note**;

- Uisce Éireann will not accept new surface water discharges to combined sewer networks.

Queries relating to the terms and observations above should be directed to planning@water.ie

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[redacted]

Connections and Developer Services

Uisce Éireann is a statutory consultee under the Planning and Development Act 2000 (as amended). Uisce Éireanns job is to deliver the highest quality drinking water to taps every day and ensure that wastewater is properly treated and safely returned to the environment. To ensure the satisfactory completion of a development, any permission, approval, or consent granted pursuant to the Planning and Development Act 2000 (as amended) that requires a new connection(s) to water services should include a condition that requires the applicant or developer to enter into a connection agreement(s) with Uisce Éireann prior to the commencement of development. Any person discharging trade effluent to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). Trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended).

[redacted]

Outlook

# [redacted]Sea Garden Phase 2, Bray Co. Wicklow - EIA Scoping Phase

[redacted]

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**From:** [redacted] DAU [redacted]@npws.gov.ie>
**Sent:** 2024-08-01 12:20
**To:** [redacted]@atkinsrealis.com>
**Cc:** [redacted]atkinsrealis.com>
**Subject:** RE: Sea Garden Phase 2, Bray Co. Wicklow - EIA Scoping Phase

A Chara,

The Department is not in a position to make specific comment on this particular referral at this time. No inference should be drawn from this that the Department is satisfied or otherwise with the proposed activity. The Department may submit observations/recommendations at a later stage in the process.

Le meas
Diarmuid

[redacted]
*Executive Officer*

**An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta**
**Department of Housing, Local Government and Heritage**
**Aonad na nIarratas ar Fhorbairt**
*Development Applications Unit*
**Oifigí an Rialtais**
*Government Offices*
**Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90**
Newtown Road, Wexford, County Wexford, Y35 AP90

—

[redacted]@npws.gov.ie
[redacted]@npws.gov.ie

# 2.3 Daylight and Sunlight Report

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January 2025

RECEIVED: 24/03/2025

# Sea Gardens, Phase 2, Mixed Use Development

## Daylight and Sunlight Assessment Report

Applicant: Shankill Property Investments Limited

*"The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design." - BR 209*

+353 (0) 1 288 0186

info@3ddesignbureau.com

www.3ddesignbureau.com

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The following report has been prepared by 3D Design Bureau (3DDB). 3DDB have over 7 years experience in producing daylight and sunlight assessments for large scale planning applications and are recognised as experts in the field. This report has been reviewed and overseen by Nicholas Polley and Richard Dalton. Nicholas is CEO of 3D Design Bureau and is a qualified Building Services Engineer (B.Sc.(Eng) Dip Eng) with over 25 years experience in the industry. Richard is Associate Director of 3DDB and has a bachelors degree in Building Information Modelling (BIM) with over 20 years experience in the industry.

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# 1.0 Executive Summary

## 1.1 Summary of Assessment

This application seeks permission for Phase 2 of the Sea Gardens development, building upon the approved elements of Phase 1. The design of this application is guided by the masterplan for the redevelopment of the former Bray Golf Course, aiming for sustainable integration with other phases and the surrounding environment.

As part of the proposal, 3D Design Bureau (3DDB) were commissioned to carry out a comprehensive daylight and sunlight assessment, along with an accompanying shadow study.

Assessments have been broken down into the following two main categories, 'Impact Assessment' and 'Scheme Performance', of which there are subcategories as summarised below:

### Impact Assessment

Following advice within the BRE Guidelines, the surrounding context was carefully considered to ensure all properties and amenity spaces that may potentially experience a level of effect have been included in the study. The impact assessment that was carried out for the purpose of this report is in accordance with the BRE Guidelines.

The positional relationship between the proposed development and the existing neighbouring properties is such that a further, more detailed impact analysis is not necessary. Further explanation of the criteria applied can be found in section "4.1 Impact Assessment, Window Selection Criteria" on page 14.

However, there are permitted developments near the subject site that require a detailed impact assessment, as indicated in Figure 1.1 below: Block B and Block C of Phase 1 of the proposed development to the north-east, and a small apartment building to the south-west (Ref 22203).

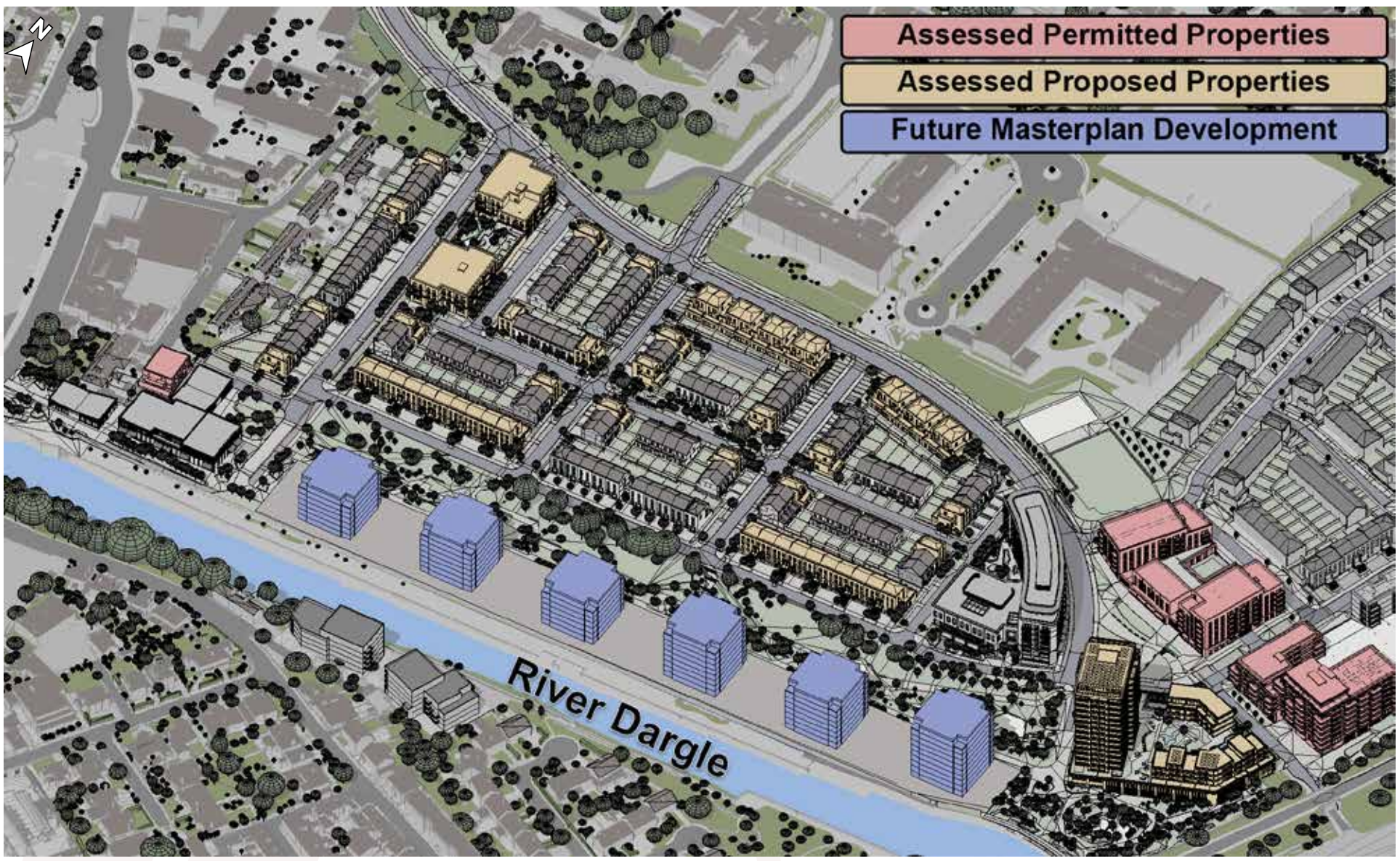


Figure 1.1: Scope of surrounding properties and environment assessed.

Figure 1.1 also highlights a 'Future Masterplan Development'. This portion of the proposed model state indicates potential apartment blocks along the Dargle River. While not part of the current proposal, these blocks are included in the assessment model to allow for potential cumulative impacts and future-proof the scheme performance analysis.

The effects were assessed in the baseline state versus the proposed state. For definition of model states, including a visual representation of the model states, please refer to the 'Methodology' section on Page 15.

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A detailed assessment to calculate the potential levels of effect that the proposed development would have on the surrounding permitted properties, as indicated in Figure 1.1, has been assessed through following metrics:

- Effect on daylight to surrounding properties. Vertical Sky Component (VSC) & No Sky Line (NSL)
- Effect on sunlight to surrounding properties. Annual and Winter Probable Sunlight Hours (APSH/WPSH)
- Effect on sun on ground (SOG) to surrounding external amenity spaces

The results of the impact assessments can be found in section A.0 on page 35. These results are summarised in section 1.2 and explained in section "5.1 Analysis of Impact Assessment Results" on page 24.

**Scheme Performance**

The scheme performance assessments for daylight and sunlight is focused on the duplex and apartment units of the proposed development as labelled 'Assessed Proposed Properties' in Figure 1.1.

Daylight access for the habitable rooms of the duplex and apartment units within the proposed development have been assessed through a Spatial Daylight Autonomy (SDA) study.

Sunlight access for the same rooms has been quantified through a Sunlight Exposure (SE) assessment.

A Sun On Ground (SOG) study has also been carried out to indicate the level of sunlight on March 21st in the proposed external amenity spaces.

The results of these scheme performance assessments, which are in accordance with the BRE Guidelines, can be found in section C.0 on page 93. These results are summarised in section 1.3 and explained in section "5.2 Analysis of Scheme Performance Results" on page 28.

Supplementary scheme performance studies have also been carried out. These include an SDA assessment under the I.S. EN 17037 criterion, and a No Sky Line (NSL) study within proposed habitable rooms. The results of the supplementary scheme performance assessments can be found in section D.0 on page 182.

**Qualitative Assessment**

In addition to the quantitative assessments detailed in the 'Impact Assessment' and 'Scheme Performance' sections, this report includes a qualitative assessment. This is provided through the false colour plans of the proposed SOG assessment (section A.4.1 on page 83) and the hourly renderings of the shadow study (section B.0 on page 84).

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## 1.2 Impact Assessment Results Overview - Neighbouring Properties:

The summaries of results below apply to the permitted properties that have been assessed, as highlighted in Figure 1.1 on page 3.

### Effect to Daylight - Vertical Sky Component (VSC) :

| Effect to Vertical Sky Component (VSC) | |
|---|---|
| Windows/Rooms Assessed | 102 |
| Negligible | 40 |
| Minor Adverse | 37 |
| Moderate Adverse | 20 |
| Major Adverse | 5 |
| Beneficial Impact* | 0 |
| n.a.** | 0 |

### Effect to Daylight - No Sky Line (NSL) :

| Effect to No Sky Line (NSL) | |
|---|---|
| Rooms Assessed | 102 |
| Negligible | 100 |
| Minor Adverse | 1 |
| Moderate Adverse | 1 |
| Major Adverse | 0 |
| Beneficial Impact* | 0 |
| n.a.** | 0 |

### Effect to Sunlight - Annual Probable Sunlight Hours (APSH):

| Effect to Annual Probable Sunlight Hours (APSH) | |
|---|---|
| Windows/Rooms Assessed | 97 |
| Negligible | 84 |
| Minor Adverse | 5 |
| Moderate Adverse | 6 |
| Major Adverse | 2 |
| Beneficial Impact* | 0 |
| n.a.** | 0 |

### Effect to Sunlight - Winter Probable Sunlight Hours (WPSH):

| Effect to Winter Probable Sunlight Hours (WPSH) | |
|---|---|
| Windows/Rooms Assessed | 97 |
| Negligible | 93 |
| Minor Adverse | 3 |
| Moderate Adverse | 0 |
| Major Adverse | 1 |
| Beneficial Impact* | 0 |
| n.a.** | 0 |

### Effect to Sun On Ground (SOG):

| Effect to Sun On Ground (SOG) | |
|---|---|
| Areas Assessed | 2 |
| Negligible | 2 |
| Minor Adverse | 0 |
| Moderate Adverse | 0 |
| Major Adverse | 0 |
| Beneficial Impact* | 0 |
| n.a.** | 0 |

*'Beneficial Impact' will only be stated if the ratio of change is greater than 1.20 (an improvement of 20%). Should less perceptible improvements occur a 'Negligible' level of effect will be stated.

**In instances where a baseline value is particularly low, levels of effects can appear exaggerated. To mitigate such occurrences, If the baseline value in the VSC, APSH/WPSH or SOG studies is below 1%, 3DDB have categorised the level of effect as n.a. (not applicable). Where windows/gardens/ amenity areas are considered non-applicable, these instances are not included in the compliance rates calculation.

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## 1.3 Scheme Performance Results Overview:

The summaries of results below apply to the proposed apartment and duplex units that have been assessed, as highlighted in Figure 1.1 on page 3.

### Spatial Daylight Autonomy (SDA):

| Spatial Daylight Autonomy (SDA) BRE 209 Criteria | |
|---|---|
| Unit Count | 247 |
| Rooms Assessed | 865 |
| Without Trees | |
| Compliant | 864 |
| Non-compliant | 1 |
| Compliance Rate* | > 99% |
| With Trees (Proposed and Existing Trees) | |
| Compliant | 864 |
| Non-compliant | 1 |
| Compliance Rate* | > 99% |
| Note: It is the expert opinion of 3DDB that the appropriate criteria for SDA assessments are that of the BRE Guidelines (BRE 209) | |

* Compliance rates stated for the SDA analysis are based on the rooms that have been assessed.

### Sunlight Exposure (SE):

| Sunlight Exposure (SE) | |
|---|---|
| Units Assessed | 247 |
| SE with trees as opaque objects | |
| Non-Compliant | 37 |
| Minimum | 16 |
| Medium | 13 |
| High | 181 |
| Compliance Rate* | c. 85% |
| SE without deciduous trees | |
| Non-Compliant | 35 |
| Minimum | 14 |
| Medium | 12 |
| High | 186 |
| Compliance Rate* | c. 86% |

* Compliance rates stated for the SE analysis are based on the units that have been assessed.

### Sun On Ground (SOG) in proposed gardens / amenity areas:

| Sun On Ground (SOG) in proposed gardens / amenity areas | |
|---|---|
| Areas Assessed | 8 |
| Areas meeting the guidelines | 7 |
| Areas not meeting the guidelines | 1 |
| Compliance Rate* | c. 88% |

* Compliance rates stated for the SOG assessment are based on the public and communal open space only.

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## 1.4 Supplementary Assessment Results Overview

The summaries of results below apply to the proposed apartment and duplex units that have been assessed, as highlighted in Figure 1.1 on page 3.

### Spatial Daylight Autonomy (SDA) under I.S. EN 17037 Criterion:

| Spatial Daylight Autonomy (SDA) under I.S. EN 17037 Criterion | |
|---|---|
| Unit Count | 247 |
| Rooms Assessed | 865 |
| Without Trees | |
| Compliant | 694 |
| Non-compliant | 171 |
| Compliance Rate* | c. 80% |
| With Trees (Proposed and Existing Trees) | |
| Compliant | 677 |
| Non-compliant | 188 |
| Compliance Rate* | c. 78% |
| Note: The study under the I.S. EN 17037 criterion should be considered a supplementary assessment. It is the expert opinion of 3DDB that the appropriate criteria are that of the BRE Guidelines (BRE 209) | |

* Compliance rates stated for the SDA analysis are based on the rooms that have been assessed.

### No Sky Line (NSL):

| No Sky Line (NSL): | |
|---|---|
| Unit Count | 247 |
| Rooms Assessed | 865 |
| Yes | 837 |
| No | 28 |
| Compliance Rate** | c. 97% |
| ** As the BRE Guidelines do not provide a recommended minimum for NSL in proposed developments, compliance rates for NSL are calculated using a criteria applied by 3DDB. | |

* Compliance rates stated for the NSL analysis are based on the rooms that have been assessed.

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# 2.0 Guidelines / Standards

**Overview**

Neither the British Standard, European Standard, British Annex to the European Standard nor the BRE Guidelines (BR 209) set out rigid standards or limits. They are all considered advisory documents. The BRE Guide is preceded by the following very clear statement as to how the design advice contained therein should be used:

*"The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."*

That the recommendations of the BRE Guidelines are not suitable for rigid application to all developments in all contexts, is of particular importance in the context of national and local policies for the consolidation and densification of urban areas or when assessing applications for highly constrained sites (e.g. lands in close proximity or immediately to the south of residential lands). A compromise may have to be made concerning daylight and sunlight compliance to achieve national or local planning objectives.

It is the expert opinion of 3D Design Bureau, that the BRE Guidelines (*BR 209*) are the most appropriate guiding document for daylight and sunlight assessment. For daylight within proposed developments, a supplementary study has also been carried out under the criteria of *I.S. EN 17037*. The rationale for this opinion is outlined below.

**Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities. (2023)**

In July 2023, the Department of Housing, Planning and Local Government published an updated guidance document for new apartments, *Sustainable Urban Housing: Design Standards for New Apartments*. This document makes reference to, *EN 17037:2018: Daylight in Buildings* (the European Standard), *BS EN 17037:2018: Daylight in Buildings* (the UK National Annex to the European Standard) and to the 3rd edition of Building Research Establishment's *Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice* (BR 209 2022).

Paragraph 6.7 of the 2023 apartment guidelines states:

*"Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraints [sic] associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

As such, this report identifies where daylight and sunlight recommendations have and have not been achieved. Rationale and compensatory design solutions are the remits of the planning consultant and/or the project architect, these will also be included in this report where applicable.

Note: Section 3.2 of the Urban Development and Building Height Guidelines 2020, provides similar guidance as above. However, it should be noted that at the time of publication of the *Urban Development and Building Height Guidelines (2020)*, BR 209 was in the 2nd edition, first published in 2011. Since then, a 3rd edition of BR 209 has been published (June 2022) and the 2nd edition has been withdrawn. BR 209 no longer references *BS 8206-2:2008*, which has also been withdrawn. The standard used as reference in BR 209 edition 3 is *BS EN 17037*.

**BR 209 - Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice (2022)**

This document will be referred to as the *BRE Guidelines*, the *BRE Guide* or *BR 209* in this report.

At the time of writing this report, the BRE Guidelines are in the third edition (BR 209). The BRE Guidelines set out recommendations for appropriate levels of daylight and sunlight within a proposed development, as well as providing guidance on impacts arising from a proposed development to surrounding properties and amenity areas.

Upon publication of the 3rd Edition of the BR 209 (2022), the 2nd edition (2011) has been withdrawn. Among the updates from the 2nd to the 3rd edition are some changes in the recommended metrics to use for carrying out scheme performance assessments.

Daylight within proposed developments was previously assessed under the 2011 guidelines using an 'Average Daylight Factor' assessment (ADF). This has been replaced with a 'target illuminance assessment', also known as a 'Spatial Daylight Autonomy' assessment (SDA).

Sunlight within proposed developments was previously assessed under the 2011 guidelines using an 'Annual / Winter Probable Sunlight Hours' assessment (APSH/WPSH). This has been replaced with a 'Sunlight Exposure' assessment (SE). However, APSH/WPSH is still recommended for sunlight impact assessments.

As such, no ADF or APSH/WPSH assessment will be included as part of a scheme performance assessment under the updated guidelines.

Details of the criteria for new metrics, and all other relevant metrics, can be found in the methodology section on Page 14 of this report.

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It is the expert opinion of 3D Design Bureau that the BRE Guidelines are the most appropriate guiding document for assessing daylight potential within a proposed development. The rationale for this opinion is echoed in the Dublin City Council development plan (2022-2028), which states:

*"Prior to 2018, Ireland had no standard for daylight. In 2018, the National Standards Authority of Ireland adopted EN 17037 to directly become IS EN 17037. It is important to note that no amendments were made to this document and unlike BS EN 317037, it does not contain a national annex. It offers only a single target for new buildings (there are no space by space targets – e.g. a kitchen would have the same target as a warehouse or office). It does not offer guidance on how new developments will impact on surrounding existing environments. These limitations make it unsuitable for use in planning policy or during planning applications. BR 209 must still be used for this purpose."*

Whilst BRE Guidelines draws reference from BS EN 17037, there are some subtle differences between BR 209 and BS EN 17037. For the purposes of this report, the BRE Guidelines (BR 209) is considered the appropriate reference document.

A detailed description of the various recommendations for impact assessment and scheme performance is contained in section "4.3 Quantitative Impact Assessment Overview" on page 18 of this report.

**EN 17037:2018: Daylight in Buildings (2018)**

*EN 17037 i*s a European Standard that provides recommendations for daylight within spaces. (Emphasis added)

EN 17037:2018 recommends that 300 lux should be received across 50% of a hypothetical reference plane of any room for half of the daylight hours of the year, with no less than 100 lux received across 95% of the reference plane. No distinction is made for the function of the room for target lux levels within this standard.

It is the opinion of 3D Design Bureau that these target values are less appropriate for proposed residential developments than the recommendations made in the BRE Guidelines, which apply room-specific target values for appropriate LUX levels.

Recommendations made in EN 17037 regarding Sunlight Exposure for proposed developments have been incorporated into the BRE Guidelines. As such, Sunlight Exposure is deemed the appropriate assessment for sunlight within habitable rooms of the proposed development.

EN 17037 also makes recommendations related to glare and quality of view out. These aspects are not addressed in this report as these assessments have less relevance in a residential context where occupants have the freedom to move about in order to improve level of glare or alter the view out.

**I.S. EN 17037:2018 Daylight in Buildings (2018)**

*I.S. EN 17037 i*s a direct adoption of the European Standard *EN 17037:2018* that provides recommendations for daylight within spaces.

The target values given within *I.S. EN 17037* are directly adopted from *EN 17037*. As such, there are no room-specific recommendations for daylight. Because of these limitations, it is the expert opinion of 3D Design Bureau, that the recommendations made in the *BRE Guidelines* are more appropriate to use than those within *I.S. EN 17037*.

Regardless, a supplementary SDA study has been carried out on the proposed development using the criterion of *I.S. EN 17037*, with compliance rates stated. However, this should be considered a supplementary study.

**BS EN 17037:2018: Daylight in Buildings (2018)**

BS EN 17037 is the British Annex to the European Standard (see above). The British Annex acknowledges that a rigid application of the European Standard "may not be achievable". It states *"... it is the opinion of the UK committee that the recommendations for daylight provision in a space [...] may not be achievable for some buildings, particularly dwellings."*

In BS EN 17037, daylight recommendations differ depending on the function of a room. Target lux levels are applied across 50% of the reference plane of a room for half of the daylight hours. The target lux levels are:

- 200 Lux for kitchens
- 150 Lux for living rooms
- 100 Lux for bedrooms

No minimum is stated to be achieved across 95% of the working plane. If a space has dual purposes it is advised that the higher target value should be applied.

**Sustainable Residential Development and Compact Settlements Guidelines (2024)**

Often referred to as "The Compact Growth Guidelines" this document advises on compact growth principles as a means to promote sustainable development, efficient land use, and infrastructure while minimizing sprawl and environmental degradation, contributing to sustainable urban growth, enhance liveability and support broader planning objectives.

In regard to daylight, section 5.3.7 states:

*"The provision of acceptable levels of daylight in new residential developments is an important planning consideration, in the interests of ensuring a high quality living environment for future residents. It is also important to safeguard against a detrimental impact on the amenity of other sensitive occupiers of adjacent properties.*

*(a) The potential for poor daylight performance in a proposed development or for a material impact on neighbouring properties will generally arise in cases where the buildings are close together, where higher buildings are involved, or where there are other obstructions to daylight. Planning authorities do not need to undertake a detailed technical assessment in relation to daylight performance in all cases. It should be clear from the assessment of architectural drawings (including sections) in the case of low-rise housing with good separation from existing and proposed buildings that undue impact would not arise, and planning authorities may apply a level of discretion in this regard.*

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*(b) In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.*

*In drawing conclusions in relation to daylight performance, planning authorities must weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision, against the location of the site and the general presumption in favour of increased scales of urban residential development. Poor performance may arise due to design constraints associated with the site or location and there is a need to balance that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

**The Compact Growth Guidelines should be applied within statutory development plans and during the consideration of individual planning applications. Flexibility in interpretation allows planning authorities to tailor recommendations to specific local contexts and planning objectives.**

**Wicklow County Development Plan (2022-2028)**

**Regarding daylight and sunlight, Appendix 1 - 'Development and Design Standards' of the Wicklow development plan (2022-2028) states:**

*"Layouts shall ensure adequate sunlight and daylight, in accordance with "Site layout planning for daylight and sunlight: a guide to best practice", (BRE 1991)."*

**The referenced document has been withdrawn and replaced with an updated edition, 'BR 209 - Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice (2022)'. The updated document will be used as reference as opposed to that which is referenced in the development plan.**

**Summary**

According to the aforementioned guiding documents, the following assessments are typically conducted for a daylight and sunlight study, depending on the specific requirements of the project.

**Performance of the Proposed Development**

Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) on all relevant windows: APSH and WPSH are no longer recommended for scheme performance assessments under BR 209. They have been replaced with Sunlight Exposure (SE). When conducting a scheme performance assessment for sunlight in the habitable rooms of the proposed development, Sunlight Exposure is the relevant metric. An APSH/WPSH assessment will not be carried out in the scheme performance assessment of the proposed development.

Sunlight on Ground (SOG) in all amenity spaces: A SOG assessment will be carried out, where appropriate, for the amenity spaces of the proposed development.

Average Daylight Factor (ADF) in all habitable rooms: BR 209 (2022) states that ADF is no longer recommended as a relevant method of assessment. ADF has been replaced with a target illuminance assessment. (See below). As such, no ADF assessment will be carried out on the proposed development.

No Sky Line (NSL) in all habitable rooms: An NSL assessment will be conducted for the habitable rooms of the proposed development as a supplementary study as part of a scheme performance assessment.

Target Illuminance in all habitable rooms: A target illuminance assessment, also known as a Spatial Daylight Autonomy (SDA) assessment, has replaced ADF as the relevant metric for assessing daylight within proposed habitable spaces. The two recommended methodologies for this assessment are detailed in section 4.5.1 on page 21. In a scheme performance assessment, the SDA will be calculated for the habitable rooms of the proposed development.

**Impact on the Surrounding Properties**

Vertical Sky Component (VSC) on all relevant surrounding windows: A VSC impact assessment will be conducted, where appropriate, on the relevant surrounding windows determined by the BRE decision chart as illustrated in Figure 4.2 on page 14.

Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) on all relevant surrounding windows: An APSH/WPSH impact assessment will be conducted, where appropriate, on the relevant surrounding windows/rooms that have an orientation within 90° of due south.

Sunlight on Ground (SOG) in all surrounding amenity spaces: A SOG impact assessment will be carried out, where appropriate, on the neighbouring gardens/ amenity spaces located within close proximity and to the north of the subject site.

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# 3.0 Glossary

## 3.1 Terms and Definitions

Below is a list of daylight and sunlight terminology that may be used in this report depending on the assessments carried out.

**Skylight**
Non directional ambient light cast from the sky and environment.

**Sunlight**
Direct parallel rays of light emitted from the sun.

**Daylight**
Combined skylight and sunlight.

**Overcast sky model**
A completely overcast sky model, used for daylight calculation.

**Cloudless sky model**
A completely cloudless sky model, used for sunlight exposure calculation.

**Model State**
The model state is a term used to describe the configuration of the digital model used to run analysis. Model states will typically reflect a baseline state and a proposed or cumulative state. For a definition of the model states used in the analysis carried out in this report, please refer to “Preparing the analytical model” on page 15.

**Vertical Sky Component (VSC)**
Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from an overcast sky model, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the ‘given vertical plane’ is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings.

**Annual Probable Sunlight Hours (APSH) / Winter Probable Sunlight Hours (WPSH)**
Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) are a measure of sunlight that a given window may expect over a year period (1 Jan - 31 Dec), or the winter period (21 Sep - 21 Mar) respectively.

North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will receive sunlight only at certain times of the day. Taking this into account, the BRE Guidelines suggest that windows with an orientation within 90 degrees of due south should be assessed.

**Sun On Ground (SOG)**
Assessment of what portion of a garden or amenity space is capable of receiving 2 hours or more of direct sunlight on March 21st.

**Sunlight Exposure (SE)**
The number of hours of direct sunlight a room can expect to receive on a given date between February 1st and March 21st at a determined point on the windows.

**Spatial Daylight Autonomy (SDA)**
Spatial Daylight Autonomy assesses whether a space receives sufficient daylight on a working plane during standard operating hours on an annual basis. For compliance, the target value is achieved across 50% of the working plane for half of the occupied period.

**No Sky Line (NSL)**
The no sky line divides points on the working plane which can and cannot see the sky.

**Working plane**
Horizontal, vertical or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 850 mm above the floor in houses and factories, 700 mm above the floor in offices. The plane is offset 300mm from the room boundaries under BR 209 criteria, and 500mm from the room boundaries under I.S. EN 17037 criteria.

**LKD**
Living / Kitchen / Dining room.

**BRE Target Value**
When assessing the effect a proposed development would have on a neighbouring property, a target value will be applied. This applied target value is generated as per the criteria set out for each study in the BRE Guidelines.

**Alternative Target Value**
It could be appropriate to use alternative target values when conducting assessment of effect on existing properties. If such instances occur the rationale will be clearly explained and the instances where the alternative target values have been applied will be clearly identified.

**Level of BRE Compliance**
Each table in the study that has a column identified as “Level of BRE Compliance”, identifies how an assessed instance performs in relation to the appropriate target value. If the instance is in compliance with the recommendations as made in the BRE Guidelines the value will be expressed as “BRE Compliant”. If the instance does not meet the criteria as set out in the BRE Guidelines a percentage will be expressed to determine the level of compliance with the recommendation. This value determines the definition of effect.

**LUX**
Lux is a standardised unit of measurement of light level intensity. A measurement of 1 lux is equal to the illumination of a one metre square surface that is one metre away from a single candle.

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## 3.2 Definition of Effects

**The BRE Guidelines state that:**

*"Adverse impacts occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied."*

**As such, planning authorities should consider a range of localised factors when making decisions. The terminology suggested in the BRE Guidelines is as listed below, whilst the assessment of impact should depend on a combination of factors. The BRE Guidelines also state:**

*"Where a new development affects a number of existing buildings or open spaces, the clearest approach is usually to assess the impact on each one separately. It is also clearer to assess skylight and sunlight impacts separately."*

**Taking this advice, 3DDB have categorised the level of effect on each window/room/open space on an individual basis. In quantifying the levels of effect, 3DDB have assigned numerical values to the levels of compliance with the BRE recommendations. By applying a numerical logic to the terminology used in defining the levels of effect there is no ambiguity regarding how the levels of effect have been categorised within this report.**

**The list of definitions given below is taken from '*Appendix H: Environmental impact assessment*' of the BR 209 with a clear indication of how they have been applied in the context of this report.**

### Negligible

For the purposes of this Sunlight and Daylight Assessment Report a '*Negligible*' level of effect will be stated if the level of effect is within the criteria as recommended in the BRE Guidelines and the applied target value has been achieved.

### Minor Adverse

For the purposes of this Sunlight and Daylight Assessment Report, a '*Minor Adverse*' level of effect will be stated if the level of effect is marginally outside of the criteria as stated in the BRE Guidelines. Typically a '*Minor Adverse*' level of effect will be applied if the level of daylight or sunlight is reduced to equal or greater than 80% and less than 100% of the applied target value.

### Moderate Adverse

For the purposes of this Sunlight and Daylight Assessment Report, a 'Moderate Adverse' level of effect will be stated if the level of daylight or sunlight is reduced to equal or greater than 50% and less than 80% of the applied target value. '*Moderate Adverse*' levels of effect are quite typical in instances where a proposed development is planned on an under-developed plot of land.

### Major Adverse

An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. For the purposes of this Sunlight and Daylight Assessment Report a '*Major Adverse*' level of effect will be stated if the proposed development reduces the availability of daylight or sunlight of a neighbouring property to significantly below a baseline level. A '*Major Adverse*' level of effect will be stated if the level of daylight or sunlight is reduced to less than 50% of the applied target value.

### Beneficial Impact

In relation to sunlight or daylight access, it is conceivable that a proposed development could yield positive effects on the neighbouring properties. In such circumstances the development would typically involve a reduction to the size or scale of built form (e.g. such as the demolition of a building or the removal of a large belt of evergreen trees, which might result in an increase in light access). Where such improvements occur, a '*Beneficial Impact*' will only be stated if the ratio of change is greater than 1.20 (an improvement of 20%). Should less perceptible improvements occur a '*Negligible*' level of effect will be stated.

### Not Applicable (n.a.)

In instances where a baseline value is particularly low, levels of effects can appear exaggerated. To mitigate such occurrences, if the baseline value in the VSC, APSH/WPSH or SOG studies is below 1%, 3DDB have categorised the level of effect as n.a. (not applicable).

### Averaged Windows (-)

If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window will be assessed and a weighted average will be calculated. In such instances the level of effect for the room will be stated, but the level of effect for the individual windows contributing towards the average will be left blank in the table. This will be indicated in the tables with the dash symbol. (-)

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## 3.3 Definition of Levels of Sunlight Exposure

For interiors, access to sunlight can be quantified. BR 209 recommends that a space should receive a minimum of 1.5 hours of direct sunlight on a selected date between 1 February and 21 March with cloudless conditions. It is suggested that 21 March (equinox) be used. The medium level of recommendation is three hours and the high level of recommendation four hours. For dwellings, at least one habitable room, preferably a main living room, should meet at least the minimum criterion.

## Level of Sunlight Exposure:

The level of sunlight exposure will be stated for each assessed room in the tables under section "C.3 Sunlight Exposure (SE) in Proposed Units" on page 145. Below is a list of the terms used to categorise the levels of sunlight exposure:

**Below Minimum**
Sunlight exposure will be categorised as 'below minimum' if the potential sunlight for the assessed room is less than 1.5 hours on March 21st. Note: the recommendation is that a room within a proposed unit is capable of receiving 1.5 hours of direct sunlight on March 21st. If an individual room does not achieve this recommendation, it does not mean that the unit is non compliant.

**Minimum**
A 'minimum' level of sunlight exposure will be stated if the potential sunlight for the assessed room is between 1.5 hours and 3 hours on March 21st.

**Medium**
A 'medium' level of sunlight exposure will be stated if the potential sunlight for the assessed room is between 3 hours and 4 hours on March 21st.

**High**
A 'high' level of sunlight exposure will be stated if the potential sunlight for the assessed room is greater than 4 hours on March 21st.

## Unit Compliance:

In addition to the level of sunlight exposure expressed for each room, compliance will be stated on a unit-by-unit basis. A proposed unit is considered to be compliant if any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on the assessment date.

**Non-Compliant**
If no habitable rooms within a proposed unit can receive 1.5 hours of sunlight on the assessment date, the unit will be categorised as 'Non-Compliant'.

**Compliant**
If at least one habitable room within a proposed unit can receive 1.5 hours or more of sunlight on the assessment date, the unit will be categorised as 'Compliant'.

Typically unit compliance will be stated for the best performing room per unit only, with lesser performing rooms indicated with a dash (-). However, if more than one room in a given unit is considered to be the best performing room (i.e. they have the same number of SE hours on March 21st), then the unit compliance column will be populated in the first instance only.

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# 4.0 Methodology

## 4.1 Impact Assessment, Window Selection Criteria

To determine the properties to be included in the impact assessment, the decision chart taken from the BRE Guidelines has been followed, as shown in Figure 4.2.

Figure 4.1: Properties within three times the height of the proposed development

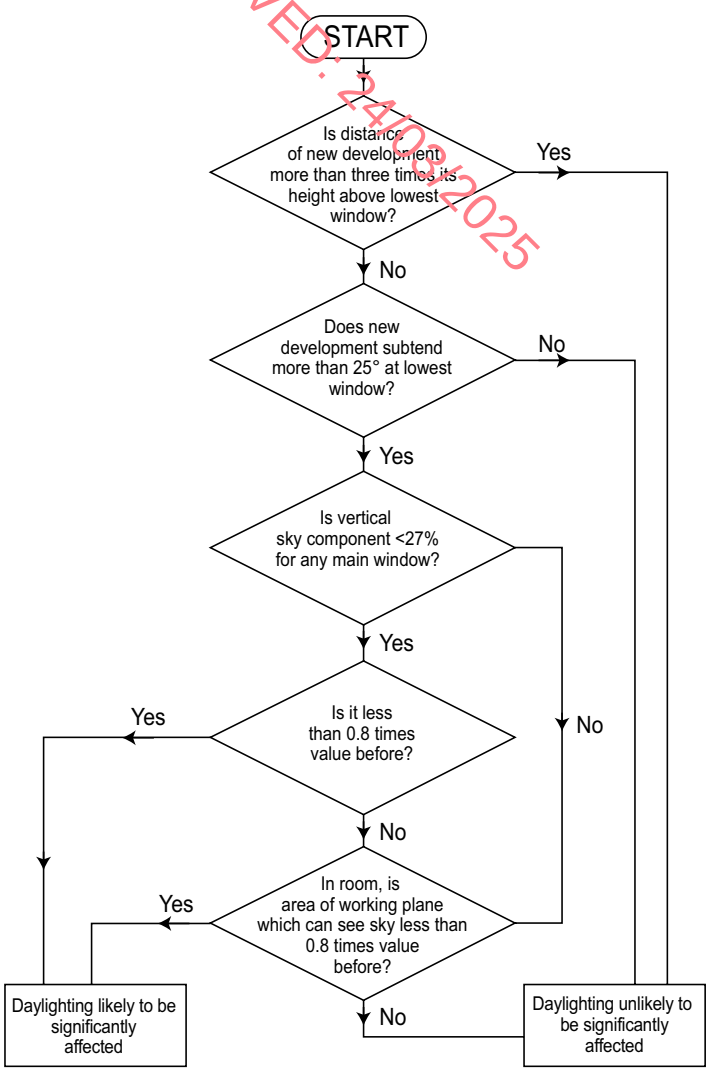


Figure 4.2: VSC decision chart, taken from BR 209.

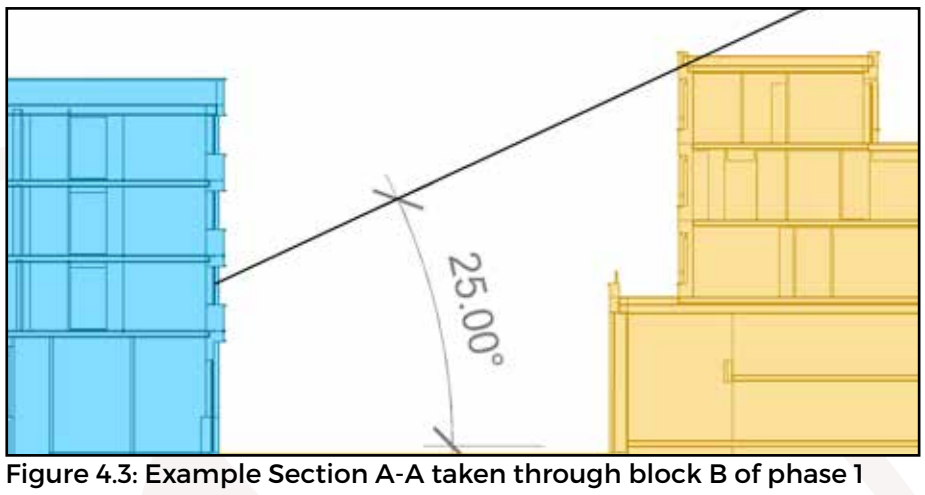


Figure 4.3: Example Section A-A taken through block B of phase 1

Accordingly, all properties within a distance of three times the height of the proposed development, as illustrated in Figure 4.1, have been considered for impact assessment.

As per the BRE Guidelines, a perpendicular section has been drawn from the main window wall of the potentially affected properties to determine if the proposed development subtends an angle of more than 25˚ at the lowest window.

If the proposed development subtends 25˚ in this section, then a VSC assessment should be conducted. Figure 4.3 shows a perpendicular section taken through block B, of phase 1, which provides an example of where the proposed development subtends 25˚ when measured in a perpendicular section through an existing window.

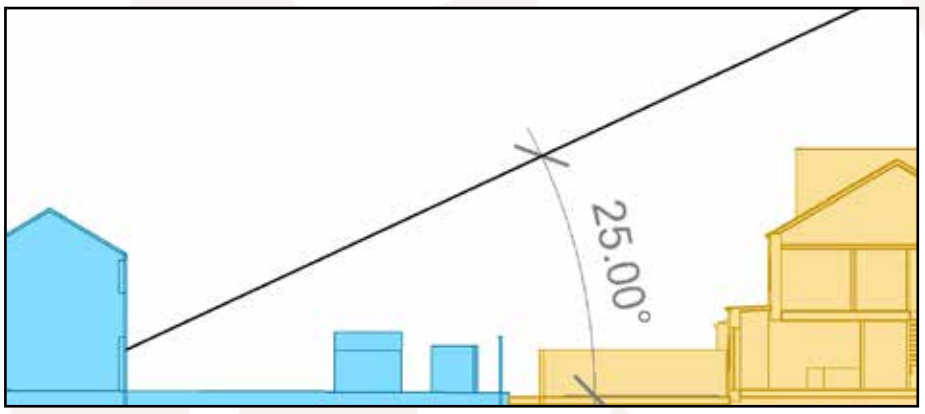


Figure 4.4: Example Section B-B taken through 6 Dwyer Park

However, if the proposed development does not subtend 25˚ in a perpendicular section, daylight is unlikely to be significantly affected and no further assessment will be carried out. Figure 4.4 shows a perpendicular section taken through 6 Dwyer Park which provides an example of where an existing window is within 3 times the height of the proposed development but the proposed development does not subtend 25˚ when measured in a perpendicular section.

A detailed description regarding the methodology of the VSC assessment can be found in 4.3.1 on page 18.

It is advisable that if a window/room does not meet the BRE criteria in the VSC impact assessment that a no sky line (NSL) assessment should then be carried out. However, a NSL assessment requires accurate dimensions and layouts of the existing rooms and windows. Due to common lack of availability regarding the required information, it is not common practice to carry out a no sky line study when assessing impact on existing properties. However, in the context of this report, all assessed properties are 'permitted' only and are yet to be constructed. As such, the relevant information to conduct a NSL assessment has been obtained from planning drawings.

The BRE Guidelines also apply the 25˚ rule to determine the need for an impact assessment for loss of sunlight (APSH/WPSH). They also advise that only windows with an orientation within 90˚ of due south should be assessed. It is recommended to assess the main living rooms of dwellings and conservatories, while APSH/WPSH assessments are typically not required for kitchens and bedrooms.

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In practice, 3DDB include all windows meeting the proximity criteria in an APSH/WPSH assessment if they are reasonably assumed to serve habitable spaces. This approach avoids distinguishing whether the windows serve bedrooms or living areas, thereby eliminating the need to make assumptions about the specific functions of rooms in existing dwellings.

While the BRE Guidelines recommend conducting an impact assessment on the lowest window where daylight/sunlight is needed, if a property is found to have a window potentially affected by the proposed development, based on the previously explained criteria, all windows facing the proposed development on that property will be assessed. This approach provides a more comprehensive understanding of the overall impact on the property.

## 4.2 Preparing the analytical model

### 4.2.1 Building the Model States

The project architect, Howells, supplied 3DDB with a series of 3D models of the proposed development and the permitted phase 1 from which a 3D analytical model was created. Landscape drawings were issued by Bernard Seymour Landscape Architects (BSLA). A combination of survey information, aerial photography, available online photography and/or ordnance survey information were used to model the surrounding context. **Note:** as the information gathered from online sources is not as accurate as surveyed information, a reasonable tolerance should be allowed to the placement of windows, boundary treatments and the results generated.

**Baseline model state**

As illustrated in Figure 4.5, the baseline model state reflects the subject site in its current standing. This includes any structures that are to be demolished as part of this application. The existing environment and surrounding context has been updated to include permitted developments that are within a close proximity to the subject site. Primary among the permitted developments is Phase 1 of the proposed development, highlighted in red in Figure 4.5. This may be referred to as 'Phase 1' in this report.

Also included in the baseline model state is the small permitted apartment development on the site of a former warehouse building at the corner of Burke's Lane / Dwyer Park (Ref. 22203). This development shares a boundary with the subject site, and has been included in the detailed impact assessment. A further application has been lodged for this site (Ref. 2460430), in which an additional floor is sought on the granted apartment block. This has not been included in the assessment model as, at the time of writing, no decision has been published on this application.

Another permitted development included in the baseline state, is the apartment scheme located across the Dargle River (Ref. 22118). No assessments have been conducted on this development as there is sufficient separation from the subject site. But it has been included in the analytical model in order to reflect the most likely context once all granted development have been constructed.

Existing trees on the subject site were positioned using an arborist report provided by Independent Tree Surveys Ltd. For trees outside the subject site, photogrammetry information was used, with assumptions made regarding their exact size, position, and species.

Figure 4.5: Model view of the baseline model state

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As explained in section 4.1, the BRE Guidelines recommend that impact assessments should be carried out if any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal. This criteria has been used to ensure all windows that could possibly sustain an adverse level of effect have been included in the model when running VSC and APSH/WPSH assessments.

**Proposed model state**

As illustrated in Figure 4.6, the proposed model state reflects the subject site if the development is built as proposed. This includes proposed landscaping on the subject site and the demolition of existing structures, etc. Proposed buildings have been positioned in their location on the subject site with relevant surrounding context included. Simplified models of the proposed trees have been placed throughout the subject site using information provided by BSLA.

Also included in the proposed model state is a series of apartment blocks along the southern boundary of the subject site, along the river Dargle. These blocks do not form part of the proposed development, but are indicative of a future masterplan development. They have been included in the assessment model to address any concerns over potential cumulative impacts on the assessed properties and to future-proof the scheme performance analysis.

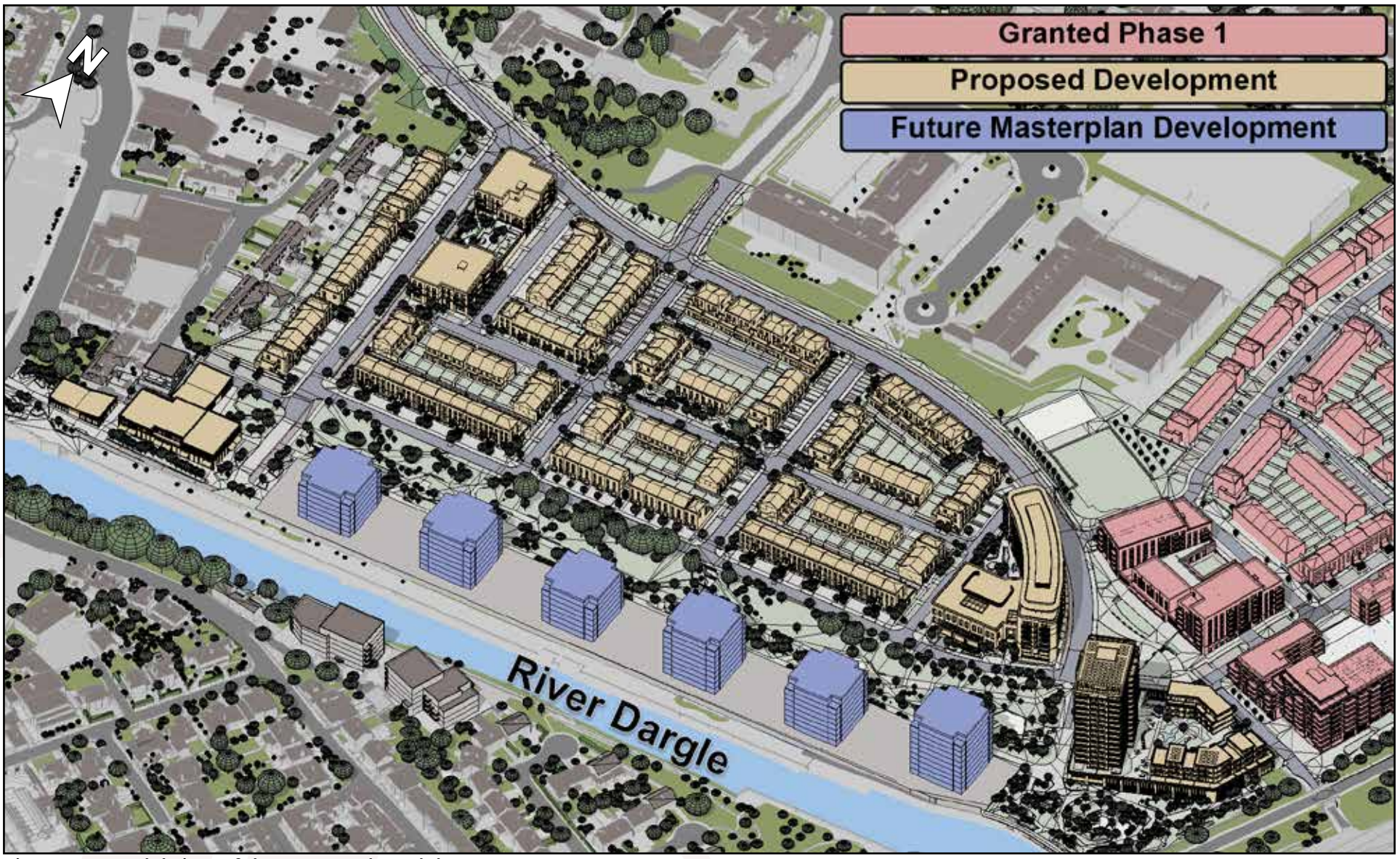


Figure 4.6: Model view of the proposed model state

All of the above information was subsequently used to prepare a digital analytical model in software specifically designed for daylight and sunlight analysis.

Relevant weather and climatic data has been obtained for this report using a localised EnergyPlus Weather File (IRL_EM_Casement.AP.039670_TMYx.epw).

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### 4.2.2 Trees

It is generally not possible to accurately represent trees in a digital 3D model as the size and shape will differ greatly from tree to tree. When modelling trees for this assessment assumptions have been made and tree geometry has been simplified.

For the purpose of the analysis carried out in this report, existing trees on the subject site were positioned using information taken from an arborist report. For trees outside the subject site, photogrammetry information was used, with assumptions made regarding their exact size, position, and species. Models representing the proposed trees within the development have also been included according to the information provided by the landscape architect. The shape of all modelled trees has been simplified

BR 209 provides guidance on how trees should be treated depending on the study being carried out, as summarised below:

**Impact to Vertical Sky Component (VSC) and Annual / Winter Probable Sunlight Hours (APSH / WPSH)**

The BRE Guidelines state that when assessing the effect a new development would have on existing buildings, it is usual to ignore the effect of deciduous trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf. Evergreen trees should be included, particularly where a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes.

**Sun On Ground (SOG)**

Regarding SOG assessments, the BRE Guidelines states:

*"...trees and shrubs are not normally included in the calculation unless a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes. This is partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees)."*

As such, deciduous trees have not been included in the calculation of SOG, unless there is a dense belt present or a group of trees specifically planned as a windbreak or for privacy purposes. Evergreen trees are included in the SOG assessment.

**Sunlight Exposure (SE)**

The BRE Guidelines state that as deciduous trees would not be in full leaf on the recommended assessment date (March 21st), sunlight would be expected to penetrate deciduous trees. However, as trees have so many variables, it is impossible to accurately represent how they would affect sunlight at a given time. The suggested methodology (BR 209) to allow for this is to run the sunlight exposure study in two states. Once with trees as opaque objects and secondly without deciduous trees in the assessment model. This gives a range of potential sunlight hours.

**Spatial Daylight Autonomy (SDA)**

BR 209 recommends when assessing daylight in a proposed building, it is appropriate to run the assessment with trees represented over the course of the whole year. Light transmittance values for the modelled trees are varied to account for summer and winter foliage.

Taking average values from *BRE Digest 350*, a light transmittance value of 60% has been applied to deciduous trees during the portion of year where a bare branch tree condition is most likely (from the 6th of October to the 24th of April). Representative of summer months, a light transmittance value of 20% has been applied to deciduous trees during the portion of year where a full leaf tree condition is most likely (from the 24th of April to the 6th of October).

A light transmittance value of 20% has been applied to evergreen trees throughout the year.

Units have also been assessed without trees to give an understanding of how the architecture performs should trees not be factored into the calculation.

I.S. EN 17037 does not give any guidance on how trees should be represented. For the purpose of this report, the SDA calculation under the I.S. EN 17037 criteria has been carried out with trees represented in the same manner as the BR 209 assessment. Units have also been assessed without trees to give an understanding of how the architecture performs should trees not be factored into the calculation.

**No Sky Line (NSL)**

Because some sky can usually be seen through a tree canopy, deciduous trees have not been included in the No Sky Line assessment model. Evergreen trees may be included in this assessment, particularly if there is a dense belt or group planned for windbreak or for privacy purposes.

**Shadow Study**

The hourly renderings of the shadow study have been generated with evergreen trees represented as opaque objects, where applicable, and without deciduous trees. This method best represents the methodology used for the impact assessment and allows for a better understanding of potential shadows cast by the proposed development through the tree canopy.

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## 4.3 Quantitative Impact Assessment Overview

### 4.3.1 Effect on Vertical Sky Component (VSC)

A proposed development could potentially have a negative effect on the level of daylight that a neighbouring property receives, if the obstructing building is large in relation to their distance from the existing dwelling.

Section 4.1 outlines the decision process which was used to determine the appropriate properties to be included in the VSC impact assessment.

For the proposed development, all properties within a radius of three times the height of the proposed development have been considered for impact assessment. Should the angle from the windows to the proposed development subtend 25˚ in a perpendicular section, then VSC is calculated in both the baseline and proposed model states, and a comparison made.

A no skyline assessment requires accurate dimensions and layouts of both rooms and windows. However, the required information is rarely available for existing dwellings. As such, it is not common practice to carry out a no sky line (NSL) impact assessment.

VSC can be defined as the amount of skylight that falls on a vertical wall or window.

This report assesses the percentage of direct sky illuminance that falls on the assessment point of neighbouring windows that could be affected by the proposed development.

The BRE Guidelines state that if the VSC is:

- At least 27%, then conventional window design will usually give reasonable results;
- Between 15% and 27%, then special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight;
- Between 5% and 15%, then it is very difficult to provide adequate daylight unless very large windows are used;
- Less than 5%, then it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

The VSC for each window/room will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

A proposed development could possibly have a noticeable effect on the daylight received by an existing window, if the following occurs:

- The VSC value drops below the guideline value of 27%; **and**
- The VSC value is less than 0.8 times the existing value.

In instances where a baseline value is less than 1%, the impact will be considered '*non-applicable*' (n.a.)

Under BRE Guidelines, only habitable rooms need to be assessed for effect to VSC. In the absence of design layouts or floor plans, or information pertaining to the internal 'as-built' layouts, assumptions have been made regarding the function of the windows of the existing surrounding properties (i.e. what room type is served by the window being assessed).

Typically, the effect on ground floor windows is greater than the effect on windows of subsequent floors. However, floors above ground floor level have been included in this study to give a more comprehensive assessment.

**Assessment Points**

The VSC impact assessment has been carried out on the windows/rooms of the neighbouring properties that could be affected by the proposed development as highlighted in Figure 1.1 on page 3.

The assessment points for measuring VSC are taken from the centre point of a standard window. If the window being assessed is a full height window, the assessment point is taken at 1600 mm above the finished floor level.

**Weighted Averages**

If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a room VSC has been calculated by applying a weighted average calculation to the results.

When calculating weighted averages the proportion of the total glazing area represented for each window is taken into account. It should be noted that assumptions typically need to be made regarding window sizes, so a tolerance should be applied regarding calculated weighted averages.

In instances where weighted averages have been calculated, the VSC figures will be stated for each window on an individual basis as well as the calculated figure to be applied to the room, but the level of effect will only be stated for the room.

**Project Assessment**

Following the BRE decision chart, as illustrated in Figure 4.2 on page 14, no VSC impact assessment has been carried out on the windows/rooms of the existing neighbouring properties. However, it has been identified that there are some permitted development that could be affected by the proposed development. As indicated in Figure 1.1 on page 3, the assessed properties are: Block B and Block C of Phase 1 of the proposed development to the north-east, and a small apartment building to the south-west (Ref 22203).

The results for the VSC assessment can be found in the appendix results section A.1 on page 35, with analysis of the results in section 5.1.1 on page 24.

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### 4.3.2 Effect on No Sky Line (NSL)

No Sky Line (NSL) is a study of whether or not the sky is visible from a hypothetical working plane within a room. In residential properties the working plane is assumed to be 850mm above the finished floor level and for offices, it is set at 700mm.

The BRE advises that if, following the construction of a new development, the no sky line moves in such a way that the area of the existing room, which currently receives direct skylight, is reduced to less than 0.80 times its former value, this change will be noticeable to the occupants, and more of the room will appear poorly lit.

NSL assessment is recommended for main rooms where daylight is expected. In residential properties these include living rooms, dining rooms, and kitchens. The BRE Guidelines state that *"bedrooms should also be analysed although they are less important."*

A No Sky Line (NSL) assessment has been carried out for all rooms served by the windows assessed in the VSC impact assessment.

It is the expert opinion of 3D Design Bureau that the No Sky Line (NSL) assessment is more informative than a VSC assessment. The rationale for this assertion is that a VSC assessment only considers light reaching a single point on the assessed window, while NSL assess daylight distribution throughout the room. Therefore, in instances where a window/ room does not meet the BRE recommendation for impact to VSC but does meet the BRE criteria for impact to NSL, the effect on daylight in that room will be considered 'negligible'. In such instances, the level of effect to VSC will also be clearly indicated.

The results for the NSL impact assessment can be found in the appendix results section A.2 on page 49, with analysis of the results in section 5.1.1 on page 24.

### 4.3.3 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

Annual/Winter Probable Sunlight Hours (APSH/WPSH) is a measure of sunlight that a given window may expect to receive over the period of a year. The percentage of APSH/WPSH that windows in existing properties receive might be affected by a proposed development.

A proposed development could potentially have a negative effect on the level of sunlight that a neighbouring property receives, if the obstructing building is located to the south and is large in relation to their distance from the existing dwelling. This can be determined if the distance of a proposed development is less than three times its height from an existing dwelling, or if the angle from an existing window to the proposed development subtends 25˚ to the horizontal when measured in a perpendicular section.

Whether a window is considered for APSH/WPSH impact assessment is based on its orientation. A south-facing window will, in general, receive the most sunlight. North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will receive sunlight only at certain times of the day. Taking this into account, the BRE Guidelines suggest that windows with an orientation within 90 degrees of due south should be assessed.

Section 4.1 outlines the decision process which was used to determine the appropriate properties to be included in the APSH/WPSH impact assessment.

The APSH/WPSH for each of the assessed windows will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, the APSH/WPSH has been assessed for the room as opposed to each individual window. When APSH/WPSH is assessed for a room it considers sunlight coming from all windows, but does not double count if sunlight is reaching multiple windows at the same time. If a room can receive more than 25% of APSH, including at least 5% of the WPSH, then the room should receive enough sunlight.

A proposed development could possibly have a noticeable effect on the sunlight received by an existing window/room, if the following occurs:

- The APSH value drops below the annual (25%) or winter (5%) guidelines; **and**
- The APSH value is less than 0.8 times the baseline value; **and**
- There is a reduction of more than 4% to the annual APSH.

In some circumstances, the available sunlight during the winter period (WPSH) may both drop below the recommended minimum of 5% with a proposed value of less than 0.8 times the baseline value, but the reduction to annual probable sunlight (APSH) is less than 4%. Such occurrences are considered compliant with the BRE Guidelines, and the impact to WPSH will be stated as '*n.a.*' on that basis.

Additionally, where a baseline value is less than 1%, the impact will be considered '*non-applicable*' (n.a.)

Under BRE Guidelines, only main living-rooms need to be assessed for effect on sunlight. In the absence of design layouts or floor plans, or information pertaining to the internal 'as-built' layouts, all windows assumed to be servicing habitable rooms have been included in the APSH/WPSH assessment provided they are orientated within 90˚ of due south and are in relative close proximity to the proposed development.

Typically, the effect on ground floor windows is greater than the effect on windows of subsequent floors. However, floors above ground floor level have been included in this study to give a more comprehensive assessment.

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**Assessment Points**

The assessment points for measuring APSH/WPSH are taken from the centre point of a standard window. If the window being assessed is a full height window, the assessment point is taken at 1600 mm above the finished floor level.

**Project Assessment**

The APSH/WPSH impact assessment was conducted on the windows and rooms of neighbouring properties within 90 degrees of due south that could be affected by the proposed development, as shown in Figure 1.1 (page 3). Following the BRE decision chart in Figure 4.2 (page 14), no impact assessment was conducted for the windows and rooms of existing neighbouring properties. However, some permitted developments were identified as potentially affected by the proposed development. These include Block B and Block C of Phase 1 of the proposed development to the north-east and a small apartment building to the south-west (Ref 22203).

The results for the APSH/WPSH assessment can be found in the appendix results section A.3 on page 63, with analysis of the results in section 5.1.2 on page 26.

## 4.3.4 Effect on Sun On Ground in Existing Gardens/Amenity Areas (SOG)

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half the area should receive at least two hours of sunlight on March 21st. As the BRE Guidelines does not provide a clear criteria on which neighbouring properties should be included in an impact on SOG study, 3DDB have carefully considered the neighbouring properties that may be affected when running the impact assessment. Gardens or amenity areas included in this study are typically located within close proximity, to the north of the proposed development.

Where a quantitative assessment has not been carried out it is on the basis that the omitted areas are unlikely to be adversely affected. Such instances may be because the areas are not deemed to be in close proximity to the proposed development or because they are located to the south. Should there be any concerns over the potential impact on any areas that have not been included in the quantitative assessment, a qualitative assessment may be carried out using the shadow study and false colour plans included in the report.

March 21st, also known as the spring equinox, is chosen as the assessment date as daytime and night-time are of approximately equal duration on this date.

The analytical model for SOG impact assessment includes evergreen trees, where applicable, in accordance with the BRE Guidelines. Typically deciduous trees will not be included unless there is a particularly dense belt.

The percentage of assessed areas which can receive two hours or more of direct sunlight on March 21st will be calculated in the relevant model states, as outlined in section 4.2 on page 15. A comparison between the results generated with these model states will determine the level of effect.

A proposed development could possibly have a noticeable effect on the sunlight received by an existing garden and/or amenity area, if the following occurs:

- Half the area of the space does not receive at least two hours of sunlight during the spring equinox; **and**
- The area that receives more than two hours of sun on the spring equinox is less than 0.8 times its former value.

In instances where a baseline value is less than 1%, the impact will be considered '*non-applicable*' (n.a.)

Effect on sunlight to existing neighbouring gardens and/or amenity areas has been assessed to the north of the proposed development, as areas located to the south are unlikely to be affected due to sun direction. Overshadowing is highly unlikely to occur in areas that are due south of any proposed development.

**Project Assessment**

The SOG impact assessment has been carried out on the neighbouring gardens/amenity areas that could be affected by the proposed development as outlined above. The assessed spaces are both located within the permitted 'phase 1' of the proposed scheme, to the north of the subject site.

The results of the impact to sun on ground assessment in the neighbouring gardens/amenity areas (including a visual representation in the form of 2-hour false colour plans) can be found in the appendix results section A.4 on page 82, with analysis of the results in section 5.1.3 on page 28.

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## 4.4 Qualitative Assessment - Shadow Study

A shadow study has been carried out to allow a qualitative comparison between the relevant model states, as outlined in section 4.2 on page 15. This visual representation of the shadows cast by the proposed development can be found in the hourly shadow diagrams in the appendix results section B.0 on page 84.

Hourly renderings have been shown from sunrise to sunset on the following dates in 2024:

- Spring equinox: March 21st Sunrise 6:32 | Sunset 18:32. (GMT)
- Summer solstice: June 21st. Sunrise 5:04 | Sunset 21:48. (BST)
- Winter solstice: December 21st Sunrise 8:44 | Sunset 16:00. (GMT)

The shadow study has been generated using the same model states as described in section 4.2.1. In certain cases, assumptions or estimations may have been made when modelling elements of the surrounding context and/or proposed site details when creating the various model states. Therefore, it is advisable for a reasonable tolerance to be applied when interpreting shadows in the qualitative assessment.

The hourly renderings of the shadow study will be generated without deciduous trees and with evergreen trees, where applicable, represented as opaque objects when present in the model states.

**Note:** The spring equinox (March 21st) and autumn equinox (21st September) yield similar shadows, albeit with a one hour difference as daylight saving time (BST) would be in effect. Only the spring equinox was included in the shadow study images in accordance with the BRE Guidelines.

## 4.5 Quantitative Scheme Performance Assessment Overview

### 4.5.1 Spatial Daylight Autonomy in Proposed Habitable Rooms (SDA)

Since the publication of the 3rd edition of the BRE Guidelines (BR 209 - 2022), Spatial Daylight Autonomy (SDA) is the recommended metric for assessing daylight access within a proposed development. Spatial Daylight Autonomy replaces Average Daylight Factor (ADF) in this regard, which was the recommended metric under the 2nd edition of the BRE Guidelines (BR 209 - 2011).

Spatial Daylight Autonomy assesses whether a room receives sufficient daylight on a working plane during standard operating hours on an annual basis. A given target value should be achieved across 50% of the working plane for half of the daylight hours.

There are two methods for calculating SDA:

- **Calculation method using illuminance level:** This requires the use of a detailed daylight calculation method where hourly (or sub-hourly) internal daylight illuminance values for a typical year are computed using hourly (or sub-hourly) sky and sun conditions derived from climate data appropriate to the site. This calculation method determines daylight provision directly from simulated illuminance values on the reference plane. The illuminance value of at least half the required area of the space should equal or exceed the target values.
- **Calculation method using daylight factor:** The daylight factor method assumes a constant ratio between internal and external illuminance. The daylight factors in the space shall be calculated by any reliable method that is based on the ISO 15469:2004 standard overcast sky (TYPE 1 or TYPE 16). Daylight factors are to be predicted across grid of points on a plane 0.85m above the floor of the space. The daylight factor of at least half the required area of the space should equal or exceed the target values.

It is the opinion of 3DDB that the calculation method using illuminance level better represents a real-world scenario as it accounts for the quality of daylight based on orientation. As such, the illuminance methodology has been adopted for all SDA assessments in this report using a localised EnergyPlus Weather File (IRL_EM_Casement.AP.039670_TMYx.epw) to apply the relevant climate information.

In terms of housing, *BR 209* provides target SDA values to be received across at least 50% of the working plane for at least half the daylight hours. The target values differ based on the function of the room assessed:

- 200 Lux for kitchens • 150 Lux for living rooms • 100 Lux for bedrooms

Where rooms serve more than one function, the higher SDA target value should been taken. In new developments, some internal spaces (e.g. studio apartments, shared communal areas etc.) can possibly be of a nature that do not have a predefined target value in BR 209. In such instances, 3DDB have applied a target value they deem to be appropriate.

In the case of the proposed development some of the assessed properties have a ‘study’. Where these rooms have a window on the external wall, they have been included in the assessment with a target of 150 Lux applied. Where a ‘study’ does not have a window on the external facade, no assessment has been conducted and it can be assumed that the room may not receive favourable levels of daylight. Studies have not been included in the calculated compliance rates, so the omission of fully internal instances has no bearing on this figure.

Under I.S. EN 17037 at least 50% of the working plane should receive above 300 lux for at least half the daylight hours, with 95% of the working plane receiving above 100 Lux for all rooms. The target SDA values do not vary depending on the room function under this criteria.

This study has assessed the Spatial Daylight Autonomy (SDA) received in the habitable rooms of the proposed development under the BR 209 criterion. The SDA of the proposed development has been calculated under the I.S. EN 17037 criterion as part of a supplementary assessment.

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**Defining Rooms**

Definition of rooms has been taken directly from the architectural drawings supplied by the project architect.

In accordance with the BRE Guidelines circulation spaces, corridors, bathrooms etc. have not been assessed.

Indication of the assessed space in each room is provided in the floor plans that correspond to the SDA results in the appendix section "Floor Plans of assessed units" on page 93.

**Working Plane**

The calculation of SDA is carried out on a hypothetical working plane which lies 850 mm from the finished floor level in residential units and 700 mm in academic and office spaces.

In the BR 209 study the working plane is offset 300 mm from the room boundaries. Under the I.S. EN 17037 criteria the working plane is offset 500 mm from the room boundaries. The working plane has a grid density of c. 300 mm.

**Material Palette**

Following consultation with the design team, material values used for SDA calculations are as per the table below:

Table No. 4.5.1 - Material Palette for SDA Calculations

| Object | Material | Reflectance | Object | Material | Reflectance / Transmittance |
|---|---|---|---|---|---|
| Exterior walls | Standard Brick | 0.3 | Interior Walls | Pastel paint | 0.70 |
| | Light Brick | 0.4 | Interior Ceiling | White paint | 0.8 |
| | Dark Brick | 0.15 | Interior Floor | Light timber | 0.4 |
| | Render | 0.6 | Miscellaneous | Miscellaneous | 0.5 |
| | Concrete | 0.4 | Glass | Double glazing | 0.68 |
| Ground cover | Paving | 0.4 | | Maintenance factor | 0.91 |
| | Tarmac | 0.2 | | Glass adjusted for maintenance | 0.62 |
| | Grass | 0.2 | | Frosted glass | 0.5 |

**Project Assessment**

The results for the study on SDA can be found in the appendix results section C.2 on page 111.

Analysis of the results can be found in section 5.2.1 on page 28.

The results of the supplementary SDA study under the I.S. EN 17037 criterion can be found in section D.0 on page 182.

## 4.5.2 Sunlight Exposure in Proposed Habitable Rooms (SE)

Since the publication of the 3rd edition of the BRE Guidelines (BR 209 - 2022), Sunlight Exposure (SE) is the recommended metric for assessing sunlight access within a proposed development. Sunlight Exposure replaces APSH/WPSH in this regard, which was the recommended metric under the 2nd edition of the BRE Guidelines (BR 209 - 2011).

Sunlight exposure (SE) is a measure of sunlight that a given window may expect to receive on a given date between the 1st of February and the 21st of March. The BRE guidelines suggest that March 21st (equinox) is used as the assessment date.

In the presence of trees, SE results have been generated, both with deciduous trees as opaque objects and without the inclusion of deciduous trees, in accordance with the BRE Guidelines. Evergreen trees have been included as opaque objects, where applicable, in both states.

The level of sunlight exposure is categorised as follows:

- 1.5 Hours - Minimum
- 3 Hours - Medium
- 4 Hours - High

The recommendation for dwellings is that at least one habitable room, preferably a main living room, should receive at least the minimum criterion. Should no room within a given unit meet the recommended minimum level of sunlight exposure, it will be stated as non-compliant.

Sunlight exposure is carried out on habitable rooms within a proposed development. The assessment point for windows is 1.2m above the finished floor level, or 0.3m above the sill level (which ever is higher). If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted.

The criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met. As such, it is not always possible to achieve full compliance, especially in developments that contain single aspect units.

The sunlight exposure assessment focuses on habitable residential rooms. Unless sunlight access is deemed important for the functionality of a non-residential room in a proposed development, it will not be included in the study, which remains limited to residential rooms.

**Project Assessment**

The results for the study on sunlight exposure can be found in the appendix results section C.3 on page 145, with analysis of the results in section 5.2.2 on page 30.

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### 4.5.3 Sun On Ground in Proposed Outdoor Amenity Areas (SOG)

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least half of it should receive at least two hours of sunlight on March 21st.

March 21st, also known as the spring equinox, is chosen as the assessment date as daytime and night-time are of approximately equal duration on this date.

The analytical model for SOG assessment in proposed amenity areas includes evergreen trees, where applicable, as per the BRE Guidelines. Typically deciduous trees will not be included unless there is a particularly dense belt.

A quantitative SOG assessment has been carried out on the areas as indicated by the project architect. The shadow study and false colour plans allow for a qualitative assessment for all other areas.

The portion of each assessed space capable of receiving 2 hours of direct sunlight on March 21st has been calculated individually. These areas can be combined to give the development average where appropriate.

**Project Assessment**

The levels of sunlighting to proposed amenity areas, as indicated by the architect, have been assessed. However, it should be noted that the numbering of these spaces in the Daylight and Sunlight Assessment Report has been assigned by 3DDB specifically for the purposes of this report. If other consultants are referencing these spaces in their own reports, it is unlikely they will be numbered the same.

The results for the study on sun on ground in the proposed outdoor amenity areas (including a visual representation in the form of 2-hour false colour plans) can be found in the appendix results section C.4 on page 179, with analysis of the results in section 5.2.3 on page 31.

### 4.5.4 No Sky Line in Proposed Habitable Rooms (NSL)

The no sky line divides the areas of the working plane which can receive direct skylight, from those which cannot. It indicates the distribution of direct daylight within a room.

The BRE Guidelines recommend the No Sky Line study as an appropriate metric for an impact assessment to daylight, but only where room layouts are known.

*"The calculation can only be carried out where room layouts are known. Using estimated room layouts is likely to give inaccurate results and is not recommended."*

All advice regarding NSL in the BRE Guidelines is in relation to impact assessments. NSL is not mentioned in the BRE section regarding daylight in new developments. Nevertheless, an NSL assessment was carried out on the proposed development as a supplementary study as it is requested in the DCC Development Plan 2022-2028 (Section 5.1, Appendix 16). Although the proposed development is not located within Dublin City, the NSL study has been included to provide consistency across 3DDB daylight and sunlight assessments.

As the BRE Guidelines does not give advice on target NSL values for proposed rooms, no compliance rate has been stated. However a no skyline of 80% could be considered an appropriate figure given that the BRE Guidelines state that supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.

The results of the supplementary NSL study can be found in section D.0 on page 182.

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# 5.0 Analysis of Results

## 5.1 Analysis of Impact Assessment Results

### 5.1.1 Effect on Daylight: Vertical Sky Component (VSC) and No Sky Line (NSL)

The effect on daylight has been assessed for 102 no. windows/rooms of permitted developments in close proximity to the proposed development. The assessed properties are block B and block C of phase 1 of the subject site, and a permitted apartment development to the south west of the subject site (Ref. 22203). No impact assessment has been carried out on existing properties due to adequate separation distances as explained in section "4.1 Impact Assessment, Window Selection Criteria" on page 14.

Using the rationale explained in section 3.2 on page 12, the effect to VSC on 40 no. of these windows (or rooms if an average of multiple windows has been taken) would be considered *'negligible'*, 37 no. '*minor adverse'*, 20 no. '*moderate adverse'* and 5 no. '*major adverse'*.

Following the BRE decision chart, as illustrated in Figure 4.2 on page 14, a No Sky Line (NSL) assessment has also been conducted on the assessed properties.

Using the rationale explained in section 3.2 on page 12, the effect to NSL for 100 no. of the assessed rooms are categorised as *'negligible'*, 1 no. '*minor adverse'*, 1 no. '*moderate adverse'* with no instances of '*major adverse'*.

It is the expert opinion of 3D Design Bureau that the No Sky Line (NSL) assessment is more informative than a VSC assessment. The rationale for this assertion is that a VSC assessment only considers light reaching a single point on the assessed window, while NSL assess daylight distribution throughout the room. Therefore, in instances where a window/ room does not meet the BRE recommendation for impact to VSC but does meet the BRE criteria for impact to NSL, the level of effect on daylight in that room will be closer aligned to that of the NSL study.

**Block B (Phase 1)**

Daylight impact assessments (VSC & NSL) have been conducted on 66 no. rooms of block B that are in close proximity to and facing the proposed development. The level of effect to VSC on the assessed rooms ranges from 'major adverse' to 'negligible'.

(30 no. *'negligible'*, 18 no. '*minor adverse'*, 13 no. '*moderate adverse'* and 5 no. '*major adverse'*.)

A contributing factor to the impacted windows is the depth of the balconies on this block, in some cases the balconies are c. 2.5m deep. Regarding balconies, the BRE Guidelines state:

*"... windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight..."*

The vast majority of the assessed rooms of this block maintain a favourable level of effect in the NSL assessment. However, there are two instances of non-compliance with the recommendations outlined in the BRE Guidelines. These units are identified in this report as 'B2_0106a#'( Figure 5.1 below), which has been categorised as having a 'moderate adverse' level of effect in the NSL study, and 'B2_0206a#,' located directly above on the subsequent floor, where the reduction in visible

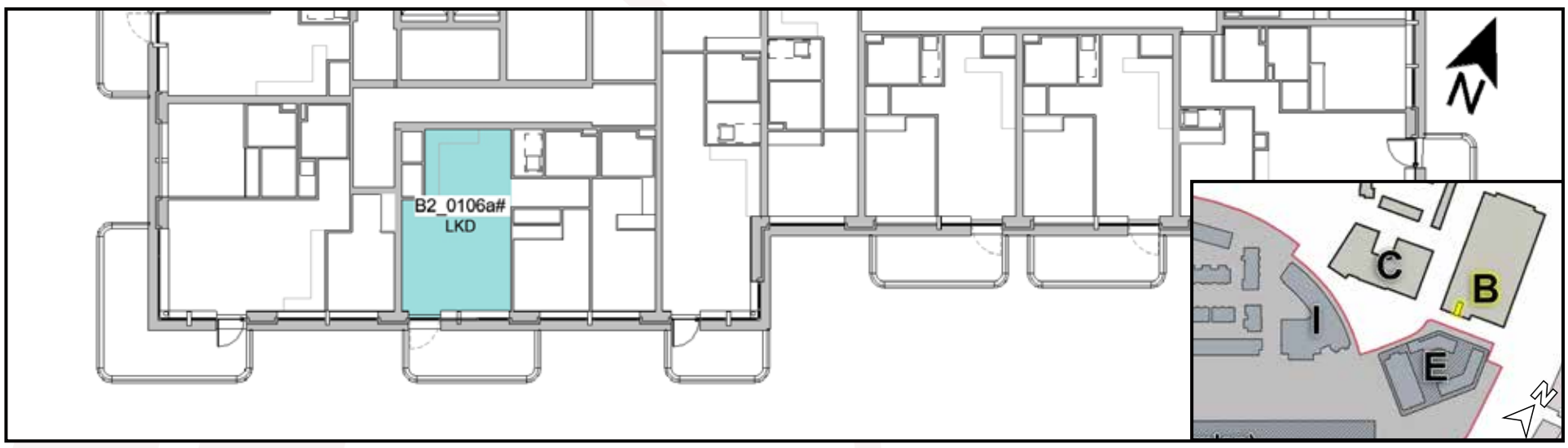


Figure 5.1: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (Inset)

sky has been classified as 'minor adverse.'

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments July 2023, states:

*"Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraints [sic] associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

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**While this provision is not typically applied in the context of an impact assessment, it is appropriate here due to the relationship between Block B and the current development. Block B forms part of an earlier phase of the same project, involving the same developer and design team.**

**The following rationale and compensatory design solutions have been provided by the project architects in response to the impacts on Block B:**

*"Block B has been designed with large balconies to maximize the south-facing views, offering residents expansive vistas of the sea. The SHD2 masterplan document originally envisioned a commercial mixed-use plot south of the square, intended for low-rise buildings ranging from 4 to 7 storeys, facing both the market square and the access road leading to the underpass.*

*During the development of phase 2, the design of Block E was thoughtfully adjusted to push the massing of the tower southward, away from the market square and into the coastal gardens. This reorientation creates a focal point for the building's massing from outside the site and establishes a landmark structure that acts as a bookend to the linear park. The stepped design of the building towards the sea minimizes its impact on public space, while the terraces provide landscaping and amenities for residents.*

*The repositioning of the tower allows low-rise duplexes to define the market square's edges, contributing to a human-scale activation of the streets. With a separation of over 18 meters between Blocks B and E, the area maintains a more town-centre feel before the buildings step back and increase in height. These 4- to 5-storey elements, though impacting the single-aspect dwellings from the previous phase, play a vital role in place-making by activating the market square, adding vibrancy, and enclosing the space. Additionally, the increased visibility and window openings in this area enhance natural surveillance and oversight of the street, helping to reduce the potential for antisocial behaviour."*

**Block C (Phase 1)**

**Daylight impact assessments have been conducted on 29 no. rooms of block C that are in close proximity to and facing the proposed development. The level of effect to VSC in the majority of assessed rooms in this block have been categorised as 'minor adverse'. (5 no. *'negligible'*, 17 no. '*minor adverse'*, 7 no. '*moderate adverse'* and 0 no. '*major adverse'*.)**

**However, the NSL assessment, which is more informative than a VSC assessment, has indicated that all assessed rooms of block C would experience a 'negligible' level of effect to the portion of the room capable of receiving direct daylight.**

**It is the expert opinion of 3D Design Bureau that the No Sky Line (NSL) assessment is more informative than a VSC assessment.**

**The following rationale and compensatory design solutions have been provided by the project architects in response to the impacts on Block C:**

*"Block C faces the proposed Block I (Hotel) at the main entrance to the market square. As outlined in the Phase 1 masterplan, the design follows the natural curve of the existing road, creating a visual narrowing between Block C and the hotel. While this slightly impacts the daylight in a few apartments in Block C, it effectively helps to enclose the market square, containing both noise and activity within the space. The facades then quickly separate due to the nature of the road.*

*The hotel building is positioned directly at the back of the footpath, echoing the style of traditional Georgian squares. Its horizontal design provides efficient floorplates, which in turn helps reduce the building's overall height. To minimize its impact on the square, the hotel's upper-level restaurant is set back, ensuring it doesn't overpower the space."*

**Permitted development (Ref. 22203)**

**There is a permitted apartment development to the south-west of the subject site, (Ref. 22203). To the best of 3DDBs knowledge, construction has not commenced on this site at the time of writing.**

**In earlier iterations of the subject site's design, 3DDB advised that the level of effect caused by the proposed Block G on the neighbouring permitted apartment block warranted a reduction. To address this, 3DDB collaborated closely with the project architect, Howells, to substantially adjust the massing of Block G. The primary aim was to reduce the level of impact on the permitted property. It is the opinion of the design team that an appropriate balance has now been achieved, delivering Block G as a suitable structure at the entrance of the proposed development without causing excessive levels of effect.**

**Of the 7 no. rooms that have been assessed, in this permitted apartment development, the majority of assessed rooms in this block have been categorised as 'negligible'. (5 no. *'negligible'*, 2 no. '*minor adverse'*, 0 no. '*moderate adverse'* and 0 no. '*major adverse'*.)**

**All assessed rooms within this property have shown a 'negligible' level of reduction to the portion of the room capable of receiving direct daylight as indicated in the NSL assessment.**

**Furthermore, it should be noted that all of the assessed properties are yet to be built/occupied, meaning there is no established reliance on existing daylight levels. Sensitivities to daylight impacts are typically greater for long-term occupants, which is not the case here. Therefore, the effects should be considered in this specific context**

**The results of the study on VSC can be found in section A.1 on page 35.**

**The results of the study on NSL can be found in section A.2 on page 49.**

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## 5.1.2 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

The effect on APSH/WPSH has been assessed for 97 no. windows/rooms of permitted developments in close proximity to the proposed development. The assessed properties are block B and block C of phase 1 of the subject site, and the permitted apartment development to the south west of the subject site (Ref. 22203). The number of assessed windows/rooms in this study is slightly less than that of the VSC assessment as only windows that have an orientation within 90 degrees of due south have been included in this assessment.

No impact assessment has been carried out on existing properties due to adequate separation distances as explained in section "4.1 Impact Assessment, Window Selection Criteria" on page 14.

Using the rationale explained in section 3.2 on page 12, the effect on the APSH of 84 no. of the assessed windows or rooms would be considered *'negligible'*, 5 no. *'minor adverse'*, 6 no. *'moderate adverse'* and 2 no. *'major adverse'*.

Approximately 87% of the assessed windows/rooms have met the criteria for effect on APSH as set out in the BRE Guidelines.

The effect on the WPSH of 93 no. of the same window**s or rooms** would be considered *'negligible'*, 3 no. *'minor adverse'*, 0 no. *'moderate adverse'* and 1 no. *'major adverse'*.

Approximately 96% of the assessed windows/rooms have met the criteria for effect on WPSH as set out in the BRE Guidelines.

**Block B (Phase 1)**

Sunlight impact assessments have been conducted on 66 no. rooms of block B that are in close proximity to and facing the proposed development. The impact to Annual Probable Sunlight Hours (APSH) in the majority of assessed rooms of this block have been categorised as 'negligible'. (53 no. *'negligible'*, 5 no. *'minor adverse'*, 6 no. *'moderate adverse'* and 2 no. *'major adverse'*.)

The assessment of the same rooms during the winter period (WPSH) has also shown a high percentage (c. 97%) of 'negligible' impacts. (64 no. *'negligible'*, 2 no. *'minor adverse'*, 0 no. *'moderate adverse'* and 0 no. *'major adverse'*.)

The two rooms of this block that have been categorised as incurring a 'major adverse' level of effect to APSH are identified in this report as 'B2_0106a# and B2_0206a#'. These are single aspect units with a large balcony that are a contributing factor in the effect to sunlight.

As stated in section "5.1.1 Effect on Daylight: Vertical Sky Component (VSC) and No Sky Line (NSL)",

the expectation for a design team to provide a rationale for any alternative, compensatory design solutions as per Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments, does not typically apply to impact assessments. However, it is appropriate here due to the relationship between Block B and the current development. Block B forms part of an earlier phase of the same project, involving the same developer and design team.

The following rationale and compensatory design solutions have been provided by the project architects in response to the impacts on Block B:

*"Block B has been designed with large balconies to maximize the south-facing views, offering residents expansive vistas of the sea. The SHD2 masterplan document originally envisioned a commercial mixed-use plot south of the square, intended for low-rise buildings ranging from 4 to 7 storeys, facing both the market square and the access road leading to the underpass.*

*During the development of phase 2, the design of Block E was thoughtfully adjusted to push the massing of the tower southward, away from the market square and into the coastal gardens. This reorientation creates a focal point for the building's massing from outside the site and establishes a landmark structure that acts as a bookend to the linear park. The stepped design of the building towards the sea minimizes its impact on public space, while the terraces provide landscaping and amenities for residents.*

*The repositioning of the tower allows low-rise duplexes to define the market square's edges, contributing to a human-scale activation of the streets. With a separation of over 18 meters between Blocks B and E, the area maintains a more town-centre feel before the buildings step back and increase in height. These 4- to 5-storey elements, though impacting the single-aspect dwellings from the previous phase, play a vital role in place-making by activating the market square, adding vibrancy, and enclosing the space. Additionally, the increased visibility and window openings in this area enhance natural surveillance and oversight of the street, helping to reduce the potential for antisocial behaviour."*

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**Block C (Phase 1)**

Sunlight impact assessments have been conducted on 29 no. rooms of block C that are in close proximity to and facing the proposed development. The impact to Annual Probable Sunlight Hours (APSH) all of the assessed rooms of this block have been categorised as 'negligible'. (29 no. *'negligible'*, 0 no. '*minor adverse'*, 0 no. '*moderate adverse'* and 0 no. '*major adverse'*.)

The assessment of the same rooms during the winter period (WPSH) has also shown that all but one instance has been categorised as 'negligible'. (28 no. *'negligible'*, 1 no. '*minor adverse'*, 0 no. '*moderate adverse'* and 0 no. '*major adverse'*.)

As illustrated in Figure 5.2 below, the singular instance of non-compliance in the APSH/WPSH assessment of block C is in the LKD of unit C0114, identified as 'C0114a#' in this report.

Figure 5.2: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (Inset)

While the WPSH of this room is 4.84% in the proposed state, which falls marginally below the BRE recommendation (5%), the proposed APSH value is 59.96%, which is more than double the recommended minimum (25%). This indicates that while the sunlight received by this room during the winter period of the 21st of September to the 21st of March will be slightly reduced, the level of sunlight during the summer months will be more than adequate.

**Permitted development (Ref. 22203)**

The majority of the windows of the permitted apartment development to the south-west of the subject site, (Ref. 22203) that face the subject site do not have an orientation within 90° of due south. Consequentially, only two rooms have been included in the APSH/WPSH impact assessment, both of which are dual aspect.

Illustrated Figure 5.3 is one of the two assessed rooms. This ground floor kitchen/dining room is identified as 'BLb#' in this report. The configuration of this block causes the south facing window of this room being 'self constrained' to the south. This is a contributing factor in the 'major adverse' level of effect recorded in the WPSH assessment of this room. The proposed APSH value for this room is 28.20%, which is slightly above the recommended minimum (25%).

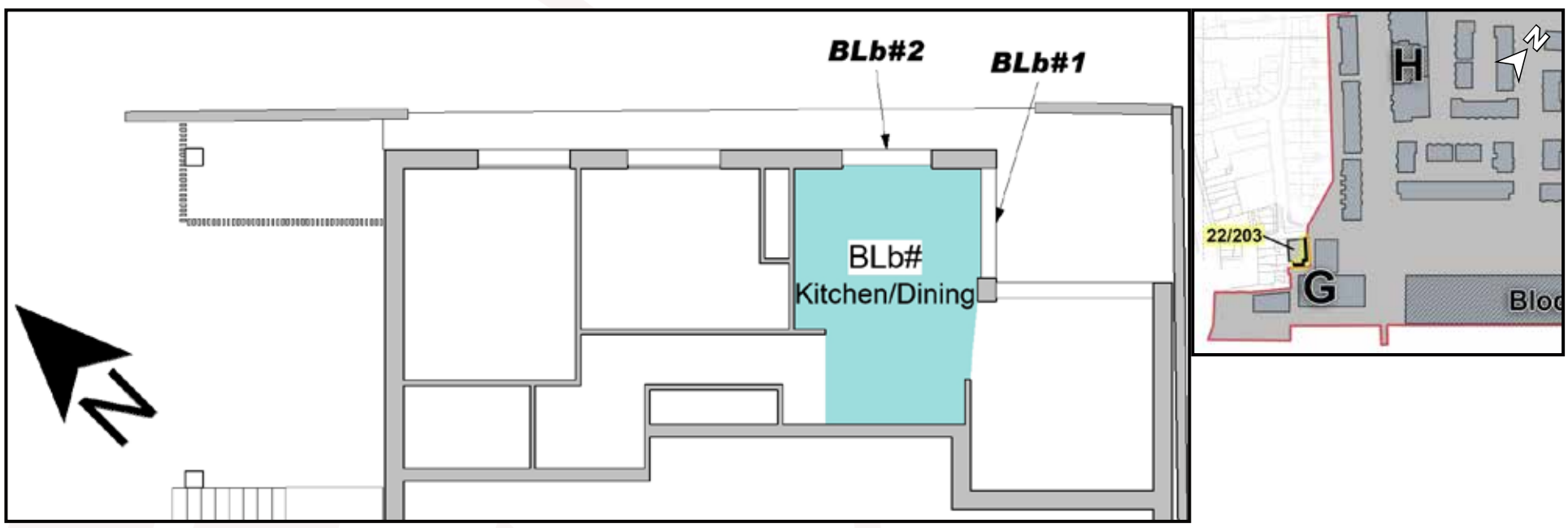


Figure 5.3: Floor-plan indicating the position of assessed windows, Ground Floor (L)
Keyplan indicating the position of the assessed block in relation to the proposed development (R)

The other assessed room within this property is the LKD on the subsequent floor. This rooms is 'self constrained' to the south and maintains very favourable sunlight access in the proposed state. (70.33% APSH and 25.83% WPSH).

3DDB worked closely with the project architects to ensure the favourable relationship between block G of the proposed development and this permitted neighbouring property.

The results of the study on APSH/WPSH can be found in Section A.3 on page 63.

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### 5.1.3 Effect on Sun On Ground in Existing Gardens

This study has assessed the effect the proposed development would have on the level of sunlight on March 21st in the amenity areas of the neighbouring permitted development, Phase 1, as indicated in Figure 5.4

Figure 5.4: Keyplan indicating the position of the assessed amenity areas within Phase 1

Using the rationale explained in section 3.2 on page 12, the level of effect in both assessed spaces would be considered *'negligible'*.

Considering the minimal reduction in sunlight to both assessed spaces and the high level of sunlight access in the proposed state, it can be concluded that the amenity areas to the south of Phase 1 would retain excellent sunlight access if the subject site is developed as proposed.

The results of the Sun On Ground study (SOG) on the neighbouring gardens can be found In section A.4 on page 82.

A visual representation of these readings can be seen in the 2 hour false colour plans in section A.4 and in the hourly shadow diagrams for March 21st in section B.1 on page 84.

## 5.2 Analysis of Scheme Performance Results

### 5.2.1 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) received in all habitable rooms within the duplex and apartment units of the proposed development both with and without trees. This has ensured that a clear understanding has been obtained regarding the daylight performance of the proposed development.

This assessed portion of the proposed development consists of 247 no. units, which makes up approximately 864 no. habitable rooms. Figure 1.1 on page 3 indicates the proposed units that have been assessed.

Under the criteria as set out in the BR 209, both with and without trees factored into the calculations, the SDA value in 864 no. habitable rooms meets or exceeds the appropriate target values. This gives a circa compliance rate of c. 99.9%. For a scheme of this size, this could be considered an excellent level of compliance.

I.S. EN 17037 sets out more onerous recommendations for SDA. As such, the number of habitable rooms achieving compliance under this standard is 677 in the assessment that includes trees. This gives a reduced circa compliance rate of c. 78%. The additional SDA assessment, under this standard, that does not include trees has shown a compliance rate of c. 80%.

In cases where rooms comply with the criteria of BR 209 but do not meet the criteria of I.S. EN 17037, it is the recommendation of 3D Design Bureau that these rooms will appear adequately daylit. This recommendation is based on the fact that BR 209 provides room-specific criteria, unlike I.S. EN 17037. BR 209 considers the varying daylight requirements for different room types, which I.S. EN 17037 does not account for.

3DDB worked closely with Howells, the project architect, throughout the design process. From the outset, Howells set a high standard for daylight access. To meet this, 3DDB conducted multiple rounds of assessments, providing suggestions after each round for design interventions to further improve daylight access where necessary. These typically involved minor adjustments to window sizes, room layouts, or balcony arrangements.

Through iterative process, all but one of the assessed rooms has achieved the recommended level of daylight as per the BRE Guidelines. The only room that remains below the recommended minimum level of daylight is identified in this report as the LKD of Unit B.01.008, which is located at podium level on Block E.

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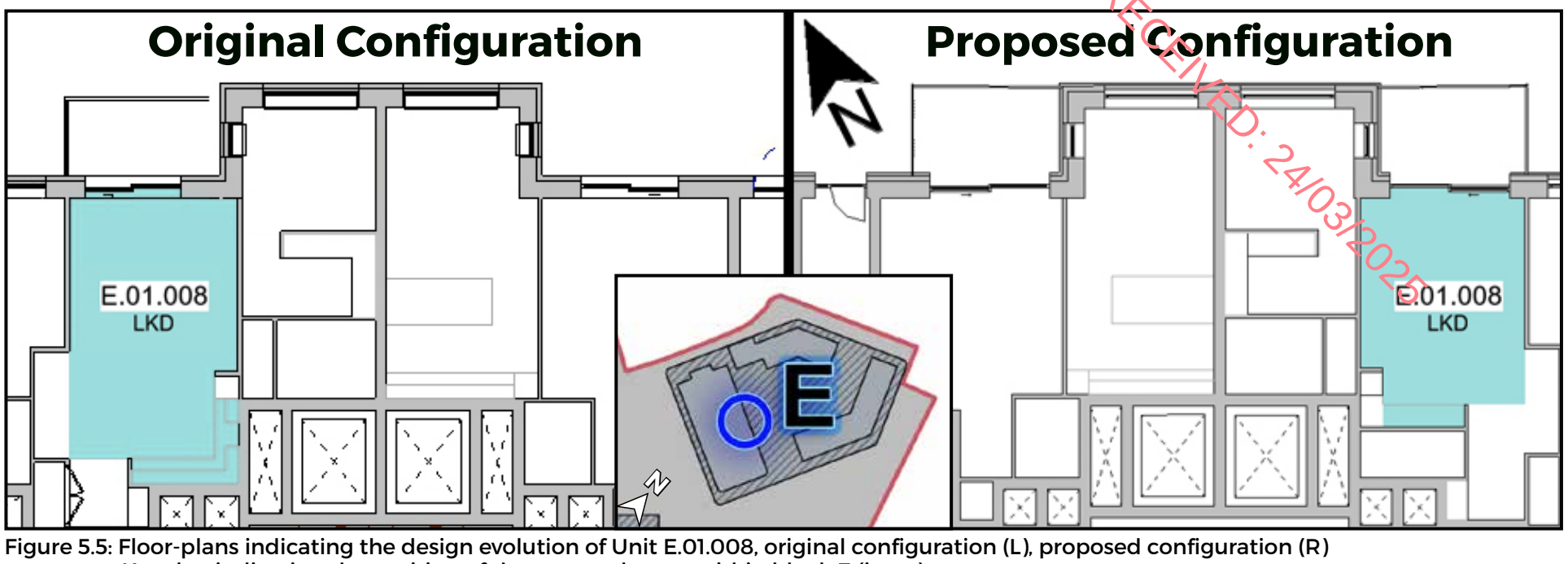


Figure 5.5: Floor-plans indicating the design evolution of Unit E.01.008, original configuration (L), proposed configuration (R)
Keyplan indicating the position of the assessed room within block E (inset)

**Although this room does not achieve the recommended level of daylight, this room has significantly improved due to design interventions. As indicated in Figure 5.5 above, in the original configuration, this unit was located on the other side of the core, with the entrance in a more southerly position. Flipping the entrance allowed a better quality of light reach this space, that coupled with a significant increase in window size and minor adjustments to the interior layout of the room has resulted in a much improved level of daylight access (SDA 40%) albeit not compliant with the BRE recommendation. Although the kitchen area, to the rear of this room, may need supplementary electric lighting when in use, the living area to the front of the room will appear adequately daylit.**

**With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments July 2023, states the following:**

*"Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific. This may arise due to a design constraints [sic] associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."*

**Based on the above statements, a compensatory design solutions and rationale has been provided by the project architect for the LKD of unit E.01.008 which does not achieve the daylight provision targets as set out in the BRE Guidelines.**

*"During design development the apartment design in this location was developed to widen the living room space and reduce the overall depth of the space. The adjacent amenity space originally in the space of E.01.008, was moved north to its current location and E.01.008 was moved to face south again improving the daylight levels. Although impacted by the adjacent podium units, this unit benefits from additional private amenity space on the podium. Furthermore, the unit exceeds the minimum size requirement by over 10%, offering residents a more spacious living environment."*

**Almost all of the assessed rooms comply with the BRE recommendations for daylight access, making the results of this study highly favourable despite a single instance of non-compliance. The design team has achieved the high standard set for the proposed development, ensuring that future occupants will benefit from well-daylit units throughout.**

The results for the study on SDA can be seen in section C.2 on page 111.

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### 5.2.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable rooms within the duplex and apartment units of the proposed development. For these assessments, trees have been included in the analytical model as opaque objects. The assessments have been carried out in two states:

- All trees included in assessment model.
- Only evergreen trees included in the assessment model.

This approach is in accordance with the BRE Guidelines.

In total, 247 no. units have been assessed. Using the rationale explained in section 3.3 on page 13, the level of sunlight exposure for the assessed units is as follows:

In the assessment carried out with all trees considered as opaque objects, 181 no. units are considered *high*, 13 no. *medium*, 16 no. have reached the *minimum* recommendation with 37 units below the *minimum* recommendation.

When deciduous trees are not factored into the assessment model, 186 no. units are considered *high*, 12 no. *medium*, 14 no. have reached the *minimum* recommendation with 35 units below the *minimum* recommendation.

The SE assessment has shown that, depending on effect of trees, the circa compliance rate for the assessed units, in accordance with the BRE Guidelines, is between 85% & 86%. This indicates that trees have a slight effect on sunlight access within the proposed development

**Note:** For a unit to be compliant under BR 209, only one habitable room within the unit needs to meet the guideline values.

Whilst the criterion applies to rooms of all orientations, it should be noted that if a room faces significantly north of due east or west it is unlikely to be met. As such, it is not always possible to achieve full compliance, especially in developments that contain single aspect units.

This is the case with the proposed development. Each instance of non-compliance with the Sunlight Exposure recommendation is in a unit that is predominantly north facing. Whilst the some of these units are dual aspect, the windows that are facing east are obscured to the south in a manner that is unavoidable.

The compliance of c. 85% that has been achieved is in line with the example layout used in the BRE Guidelines, as repeated in Figure 5.6 below, which is used to give advice on how to achieve a favourable balance in sunlight access within larger schemes where full compliance may not be possible.

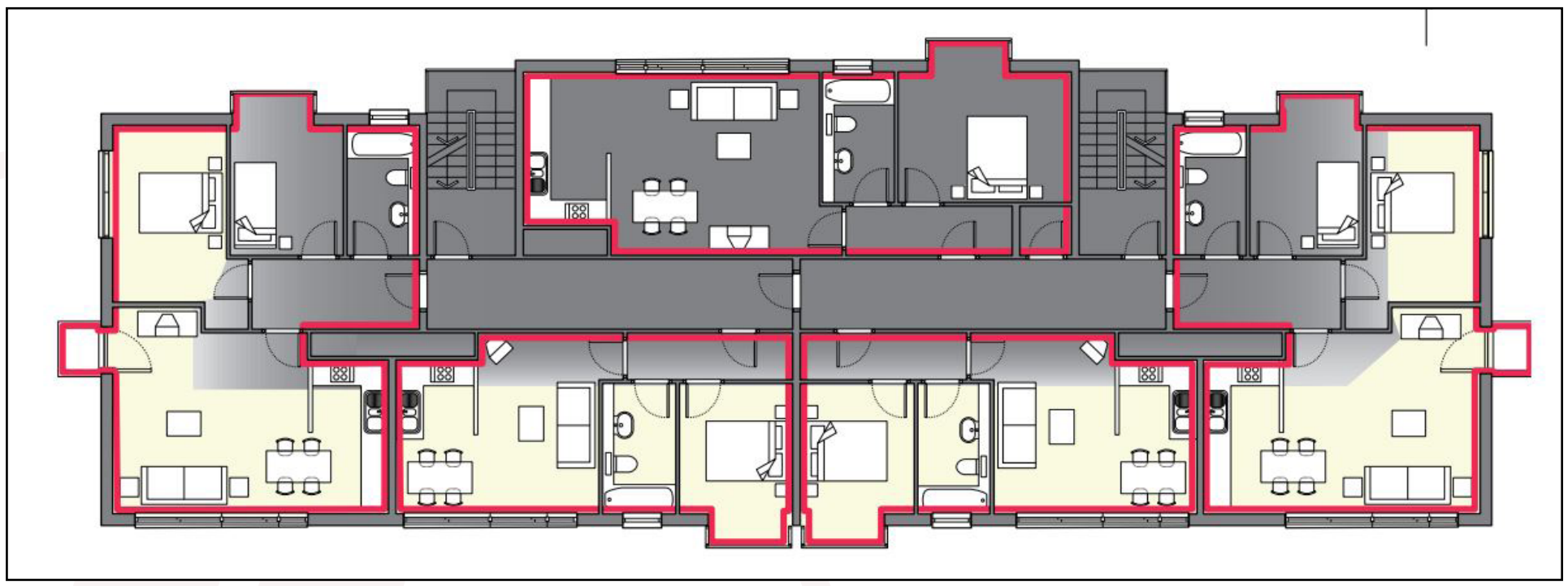

Figure 5.6: Image taken from the BRE Guidelines, indicating a “careful layout design” aimed at optimal sunlight exposure.

No recommendation is made regarding the performance of a development as a whole for SE performance within the BRE Guidelines. However, it is the opinion of 3DDB that the proposed development performs adequately in this regard.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section C.3 on page 145.

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### 5.2.3 Sun On Ground in Proposed Outdoor Amenity Areas

This study has assessed the level of sunlight on March 21st for the public and communal open space of the proposed development, as highlighted in Figure 5.7 below.

Figure 5.7: Keyplan indicating the position of the assessed amenity areas within Phase 1

In total 8 no. spaces have been assessed, 7 no. of which would meet the criteria as set out in the BRE Guidelines.

The BRE Guidelines recommend that should at least 50% of a space be capable of receiving two hours or more of direct sunlight on March 21st, then that space is likely to appear adequately sunlit throughout the year. All assessed 'public open spaces' comfortably achieve this recommendation. With over 90% of the public open space capable of receiving two hours on March 21st these areas will have excellent sunlight potential.

The majority of the assessed 'communal open spaces' have also achieved this criteria. The only space to fall marginally short of the recommended level, is the raised podium of block E (indicated in Figure 5.7 as space no.6). For which two hours of direct sunlight can be received across 45.8% of the assessed space, which is slightly less than the 50% recommended.

Although this podium does not achieve the recommended level of sunlight on March 21st, this podium is a large space, at more than 1000 square meters, there will be plenty of bright areas to counteract areas that are in shade. Furthermore, occupants of this block will also have access to the central park and the coastal gardens which both directly connect with Block E.

Despite a marginal non-compliance in one of the assessed communal amenity areas, it is the expert opinion of 3D Design Bureau that all future occupants of the proposed development will have easy access to outdoor amenity areas that are capable of excellent levels of sunlight.

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section C.4 on page 179.

A visual representation of these readings can be seen in the false colour plan in section C.4 and in the hourly shadow diagrams for March 21st in section B.1 on page 84 of the appendix section of this report.

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# 6.0 Conclusion

This application seeks permission for Phase 2 of the Sea Gardens development, building upon the approved elements of Phase 1. The design of this application is guided by the masterplan for the redevelopment of the former Bray Golf Course, aiming for sustainable integration with other phases and the surrounding environment.

As part of the proposal, 3D Design Bureau (3DDB) were commissioned to carry out a comprehensive daylight and sunlight assessment, along with an accompanying shadow study

The impact assessment for this report has quantified the effect that the proposed development would have on the level of daylight and sunlight received by neighbouring permitted developments in close proximity to the proposed development, as indicated in Figure 6.1 below.

Among the assessed properties are Block B and Block C, which form part of earlier phases of the proposed development. The impacts imposed on these blocks are understood by the design team which form part of the masterplan for the wider development where emphasis has been given to place-making and street-front activation.

The design team has made appropriate alterations to the form and massing of the proposed development to ensure that reasonable levels of effect were respected in the one assessed property that is in close proximity to the subject site but does not form part of the wider masterplan.

The positional relationship between the proposed development and the existing neighbouring properties is such that a further, more detailed impact analysis is not necessary. Further explanation of the criteria applied can be found in section “4.1 Impact Assessment, Window Selection Criteria” on page 14.

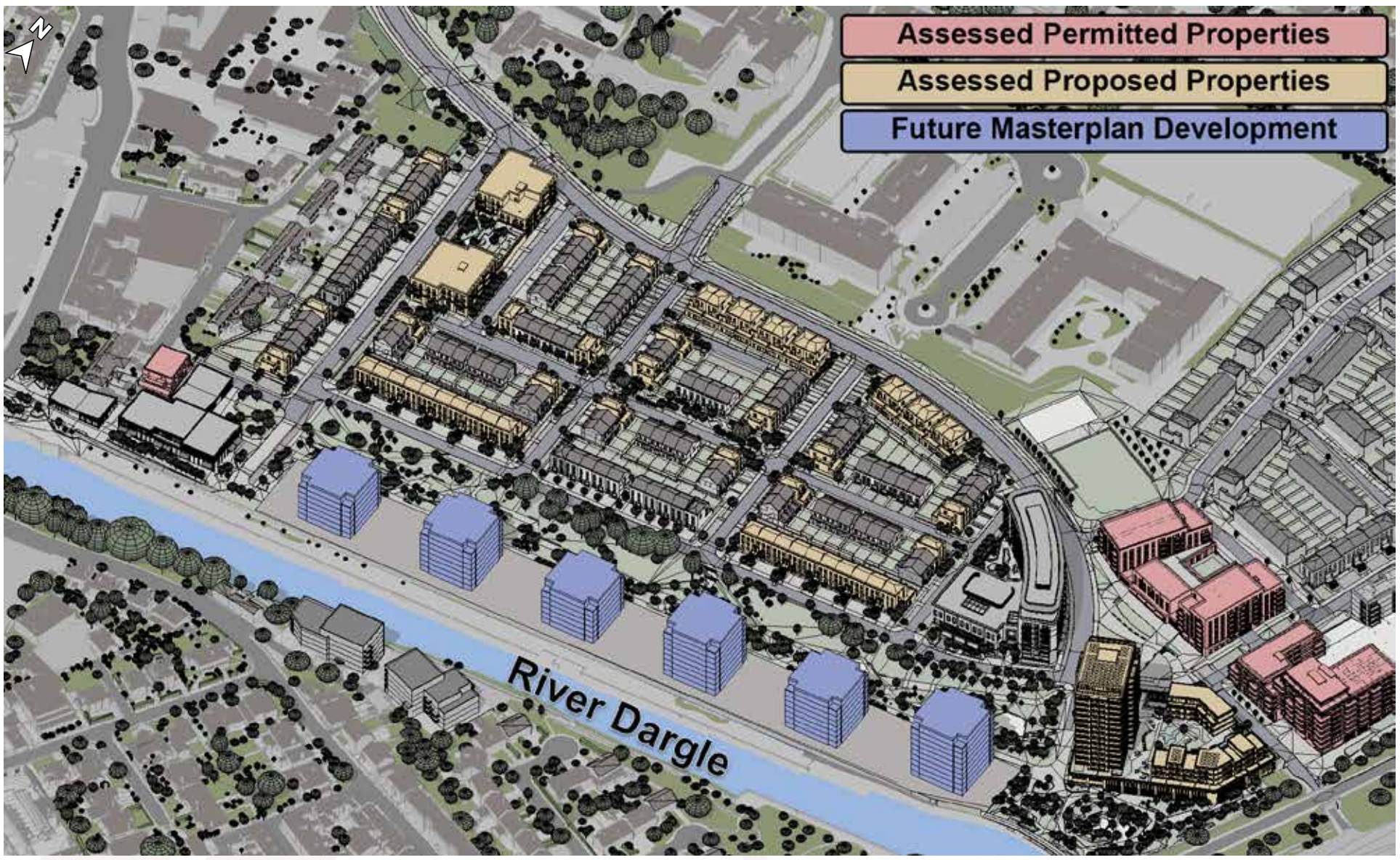


Figure 6.1: Scope of surrounding properties and environment assessed.

The scheme performance assessment for this report has quantified the level of daylight and sunlight within the proposed development.

The proposed development achieves exceptional compliance, with nearly every habitable room in the duplexes and apartments meeting or greatly exceeding the recommended levels of daylight access as demonstrated in the Spatial Daylight Autonomy(SDA) assessment.

Future occupants will also enjoy favourable levels of sunlight access as indicated in the Sunlight Exposure (SE) assessment. While overall compliance, for sunlight within the assessed units, is broadly in line with the recommendations, the majority of these units achieved a ‘high’ standard of sunlight exposure. Furthermore, the Sun On Ground (SOG) assessment has shown an abundance of exterior amenity areas with excellent sunlight potential.

In conclusion, it is the opinion of 3DDB that assessments conducted for this report demonstrate that the proposed development performs very favourably in relation to the provision of daylight and sunlight access to future residents, whilst maintaining a balanced approach in terms of impacts to neighbouring developments.

# Appendix - Results

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+353 (0)1 288 0186
info@3ddesignbureau.com
www.3ddesignbureau.com

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Assessment criteria and detailed analysis of results can be found in the accompanying report.

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# A.0 Impact Assessment Results

## A.1 Effect on Vertical Sky Component (VSC)

Below is an example of the table used to describe the effect on VSC.

| Table Example. A.1 - VSC Impact Assessment | | | | | | |
|---|---|---|---|---|---|---|
| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended Minimum VSC | Level of Compliance with BRE Guidelines | Effect of Proposed Development |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** |

**A: Window Number**

The number in this column will identify the assessed window. All windows are represented visually in the corresponding figure.

**B: Baseline VSC Value**

The *Baseline VSC Value* represents the VSC value of the assessed window which is calculated in the baseline model state (as explained in the "Building the Model States" on page 15).

**C: Proposed VSC Value**

The *Proposed VSC Value* represents the VSC value of the assessed window which is calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

**D: Ratio of Proposed VSC to Baseline VSC**

This column expresses the ratio of change between the baseline VSC value and the proposed VSC value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction in daylight is more likely to be perceptible.

**E: Recommended minimum VSC**

The *BRE Target Value* for each window has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the daylight received by an existing window, if the VSC value **both** drops below the guideline value of 27% **and** the VSC value is less than 0.8 times the baseline value.

Therefore, to determine the *recommended minimum Value*, 80% of the *Baseline VSC value* has been calculated. If this value is above the 27% threshold, a target value of 27% will be applied. If 80% of the baseline value is below 27%, then 80% of the baseline value is the appropriate target value.

**F: Level of Compliance with the BRE Guidelines**

This column states the compliance of the *Proposed VSC Value* with the *recommended minimum VSC* as per the BRE Guidelines. In essence, it shows whether or not the assessed window would experience a perceptible level of impact. If the window complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the window does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

**G: Effect of Proposed Development**

The levels of effect in this column describe the effect an assessed window will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section *"Definition of Effects"* on page 12.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## A.1.1 Permitted Block B (Phase 1) - 1st Floor

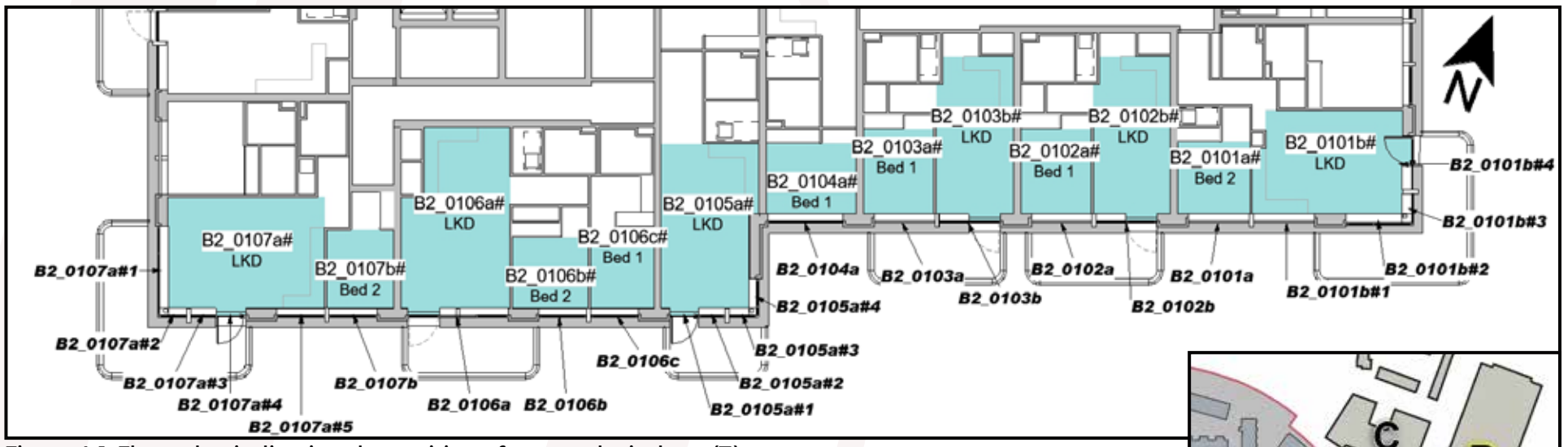
Table No. A.1.1 - VSC Results: Permitted Block B (Phase 1) - 1st Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0101a | 29.39% | 23.39% | 0.80 | 23.51% | 99% | Minor Adverse |
| B2_0101b#1 | 26.97% | 21.14% | 0.78 | 21.58% | 98% | - |
| B2_0101b#2 | 8.58% | 5.25% | 0.61 | 6.86% | 76% | - |
| B2_0101b#3 | 8.90% | 8.90% | 1.00 | 7.12% | BRE Compliant | - |
| B2_0101b#4 | 12.24% | 12.24% | 1.00 | 9.79% | BRE Compliant | - |
| B2_0101b# | 14.11% | 11.76% | 0.83 | 11.28% | BRE Compliant | Negligible |
| B2_0102a | 8.20% | 3.09% | 0.38 | 6.56% | 47% | Major Adverse |
| B2_0102b | 12.35% | 7.00% | 0.57 | 9.88% | 71% | Moderate Adverse |
| B2_0103a | 7.73% | 2.44% | 0.32 | 6.18% | 39% | Major Adverse |
| B2_0103b | 10.59% | 4.71% | 0.44 | 8.47% | 56% | Moderate Adverse |
| B2_0104a | 20.00% | 15.64% | 0.78 | 16.00% | 98% | Minor Adverse |
| B2_0105a#1 | 13.76% | 4.92% | 0.36 | 11.01% | 45% | - |
| B2_0105a#2 | 9.28% | 2.79% | 0.30 | 7.42% | 38% | - |
| B2_0105a#3 | 11.56% | 4.97% | 0.43 | 9.25% | 54% | - |
| B2_0105a#4 | 16.94% | 15.54% | 0.92 | 13.55% | BRE Compliant | - |
| B2_0105a# | 13.30% | 7.41% | 0.56 | 10.64% | 70% | Moderate Adverse |
| B2_0106a | 11.61% | 2.28% | 0.20 | 9.29% | 25% | Major Adverse |
| B2_0106b | 25.55% | 14.70% | 0.58 | 20.44% | 72% | Moderate Adverse |
| B2_0106c | 28.28% | 16.63% | 0.59 | 22.62% | 74% | Moderate Adverse |
| B2_0107a#1 | 3.69% | 1.00% | 0.27 | 2.95% | 34% | - |
| B2_0107a#2 | 8.23% | 0.89% | 0.11 | 6.58% | 14% | - |
| B2_0107a#3 | 8.70% | 1.39% | 0.16 | 6.96% | 20% | - |
| B2_0107a#4 | 13.66% | 4.43% | 0.32 | 10.93% | 41% | - |
| B2_0107a#5 | 28.99% | 15.48% | 0.53 | 23.19% | 67% | - |
| B2_0107a# | 11.07% | 4.17% | 0.38 | 8.86% | 47% | Major Adverse |
| B2_0107b | 28.97% | 15.54% | 0.54 | 23.18% | 67% | Moderate Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.



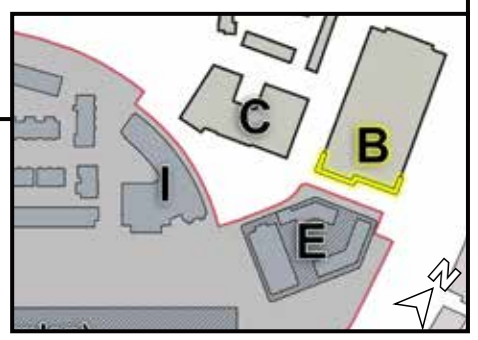




Figure A.1: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.2 Permitted Block B (Phase 1) - 2nd Floor

Table No. A.1.2 - VSC Results: Permitted Block B (Phase 1) - 2nd Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0201a | 29.51% | 24.45% | 0.83 | 23.61% | BRE Compliant | Negligible |
| B2_0201b#1 | 27.09% | 22.18% | 0.82 | 21.67% | BRE Compliant | - |
| B2_0201b#2 | 8.70% | 5.90% | 0.68 | 6.96% | 85% | - |
| B2_0201b#3 | 8.93% | 8.93% | 1.00 | 7.14% | BRE Compliant | - |
| B2_0201b#4 | 12.27% | 12.27% | 1.00 | 9.82% | BRE Compliant | - |
| B2_0201b# | 14.18% | 12.21% | 0.86 | 11.35% | BRE Compliant | Negligible |
| B2_0202a | 8.33% | 4.10% | 0.49 | 6.66% | 62% | Moderate Adverse |
| B2_0202b | 12.48% | 8.10% | 0.65 | 9.98% | 81% | Minor Adverse |
| B2_0203a | 7.96% | 3.63% | 0.46 | 6.37% | 57% | Moderate Adverse |
| B2_0203b | 10.71% | 5.88% | 0.55 | 8.57% | 69% | Moderate Adverse |
| B2_0204a | 20.90% | 17.58% | 0.84 | 16.72% | BRE Compliant | Negligible |
| B2_0205a#1 | 13.97% | 6.34% | 0.45 | 11.18% | 57% | - |
| B2_0205a#2 | 9.42% | 3.85% | 0.41 | 7.54% | 51% | - |
| B2_0205a#3 | 11.69% | 6.36% | 0.54 | 9.35% | 68% | - |
| B2_0205a#4 | 17.51% | 16.66% | 0.95 | 14.01% | BRE Compliant | - |
| B2_0205a# | 13.58% | 8.68% | 0.64 | 10.86% | 80% | Minor Adverse |
| B2_0206a | 11.78% | 3.49% | 0.30 | 9.42% | 37% | Major Adverse |
| B2_0206b | 25.98% | 16.98% | 0.65 | 20.78% | 82% | Minor Adverse |
| B2_0206c | 28.88% | 19.13% | 0.66 | 23.10% | 83% | Minor Adverse |
| B2_0207a#1 | 3.93% | 1.54% | 0.39 | 3.14% | 49% | - |
| B2_0207a#2 | 8.38% | 1.19% | 0.14 | 6.70% | 18% | - |
| B2_0207a#3 | 8.87% | 1.77% | 0.20 | 7.10% | 25% | - |
| B2_0207a#4 | 13.84% | 5.82% | 0.42 | 11.07% | 53% | - |
| B2_0207a#5 | 29.53% | 18.15% | 0.61 | 23.62% | 77% | - |
| B2_0207a# | 11.33% | 5.19% | 0.46 | 9.07% | 57% | Moderate Adverse |
| B2_0207b | 29.51% | 18.19% | 0.62 | 23.61% | 77% | Moderate Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

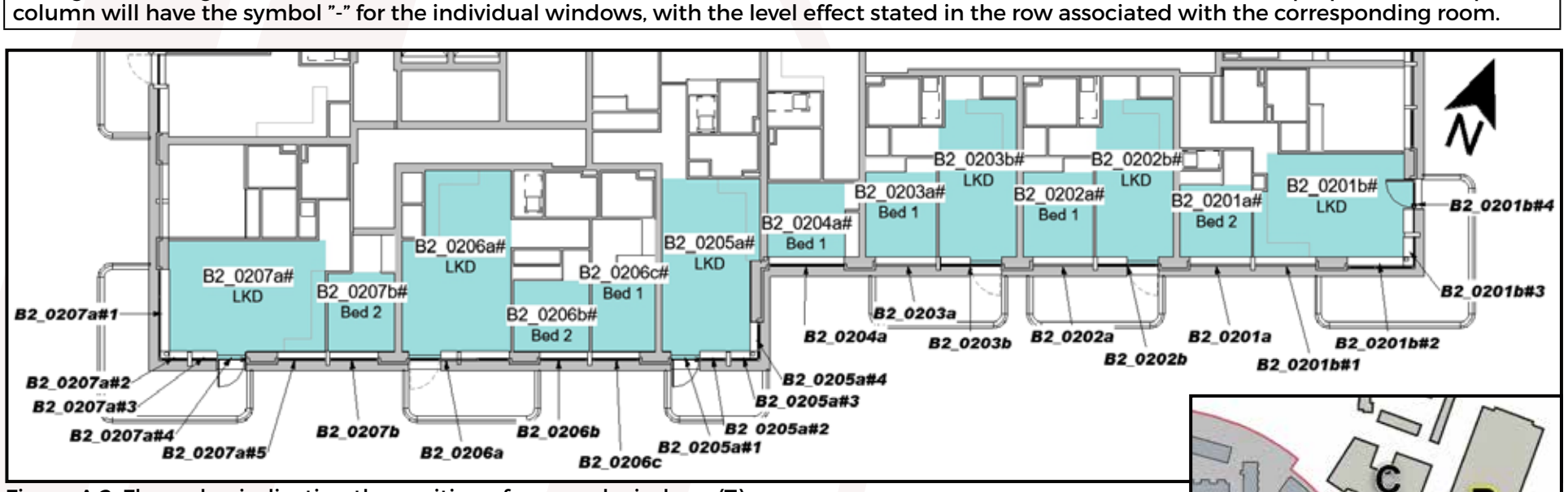


Figure A.2: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.3 Permitted Block B (Phase 1) - 3rd Floor

Table No. A.1.3 - VSC Results: Permitted Block B (Phase 1) - 3rd Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0301a | 29.61% | 25.49% | 0.86 | 23.69% | BRE Compliant | Negligible |
| B2_0301b#1 | 27.18% | 23.17% | 0.85 | 21.74% | BRE Compliant | - |
| B2_0301b#2 | 8.79% | 6.51% | 0.74 | 7.03% | 93% | - |
| B2_0301b#3 | 8.93% | 8.93% | 1.00 | 7.14% | BRE Compliant | - |
| B2_0301b#4 | 12.27% | 12.27% | 1.00 | 9.82% | BRE Compliant | - |
| B2_0301b# | 14.23% | 12.62% | 0.89 | 11.38% | BRE Compliant | Negligible |
| B2_0302a | 8.47% | 5.14% | 0.61 | 6.78% | 76% | Moderate Adverse |
| B2_0302b | 12.62% | 9.07% | 0.72 | 10.10% | 90% | Minor Adverse |
| B2_0303a | 8.67% | 5.17% | 0.60 | 6.94% | 75% | Moderate Adverse |
| B2_0303b | 11.01% | 7.11% | 0.65 | 8.81% | 81% | Minor Adverse |
| B2_0304a | 21.63% | 18.85% | 0.87 | 17.30% | BRE Compliant | Negligible |
| B2_0305a#1 | 33.74% | 26.31% | 0.78 | 26.99% | 97% | - |
| B2_0305a#2 | 32.35% | 25.12% | 0.78 | 25.88% | 97% | - |
| B2_0305a#3 | 32.59% | 25.58% | 0.78 | 26.07% | 98% | - |
| B2_0305a#4 | 17.83% | 17.48% | 0.98 | 14.26% | BRE Compliant | - |
| B2_0305a# | 28.88% | 23.51% | 0.81 | 23.11% | BRE Compliant | Negligible |
| B2_0306a | 35.42% | 26.45% | 0.75 | 27.00% | 98% | Minor Adverse |
| B2_0306b | 33.11% | 24.90% | 0.75 | 26.49% | 94% | Minor Adverse |
| B2_0306c | 33.11% | 25.22% | 0.76 | 26.49% | 95% | Minor Adverse |
| B2_0307a#1 | 27.24% | 24.56% | 0.90 | 21.79% | BRE Compliant | - |
| B2_0307a#2 | 32.64% | 23.10% | 0.71 | 26.11% | 88% | - |
| B2_0307a#3 | 32.35% | 22.86% | 0.71 | 25.88% | 88% | - |
| B2_0307a#4 | 33.73% | 24.19% | 0.72 | 26.98% | 90% | - |
| B2_0307a#5 | 33.11% | 23.79% | 0.72 | 26.49% | 90% | - |
| B2_0307a# | 30.75% | 23.99% | 0.78 | 24.60% | 98% | Minor Adverse |
| B2_0307b | 33.11% | 23.93% | 0.72 | 26.49% | 90% | Minor Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

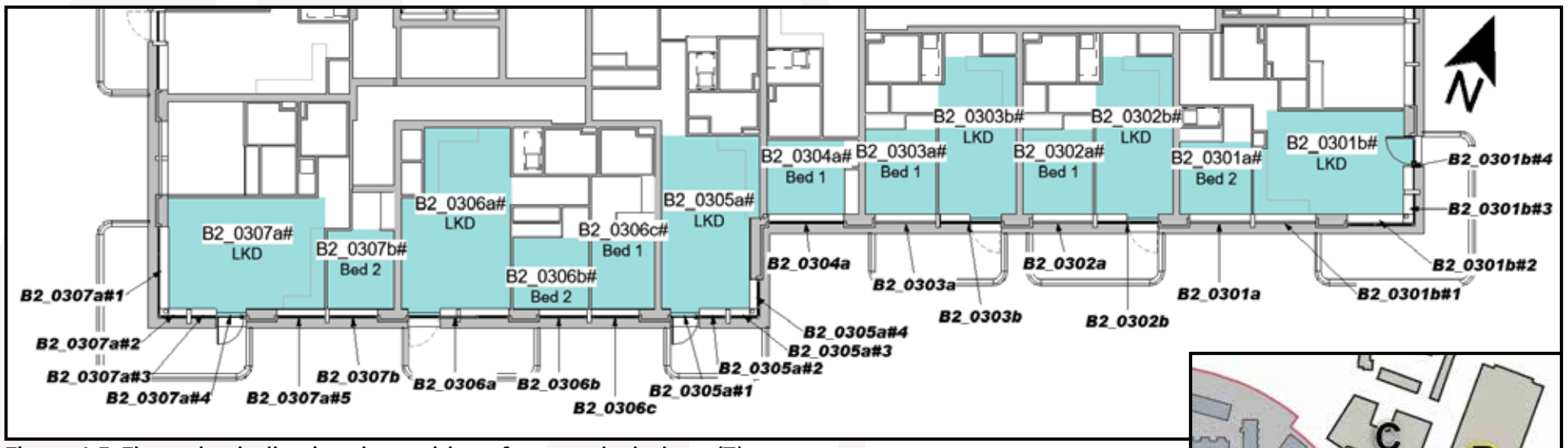


Figure A.3: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.4 Permitted Block B (Phase 1) - 4th Floor

Table No. A.1.4 - VSC Results: Permitted Block B (Phase 1) - 4th Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0401a | 29.69% | 26.40% | 0.89 | 23.75% | BRE Compliant | Negligible |
| B2_0401b#1 | 27.26% | 24.07% | 0.88 | 21.81% | BRE Compliant | - |
| B2_0401b#2 | 8.86% | 7.05% | 0.80 | 7.09% | 99% | - |
| B2_0401b#3 | 8.93% | 8.93% | 1.00 | 7.14% | BRE Compliant | - |
| B2_0401b#4 | 12.27% | 12.27% | 1.00 | 9.82% | BRE Compliant | - |
| B2_0401b# | 14.27% | 12.99% | 0.91 | 11.42% | BRE Compliant | Negligible |
| B2_0402a | 9.78% | 7.11% | 0.73 | 7.82% | 91% | Minor Adverse |
| B2_0402b | 12.83% | 9.98% | 0.78 | 10.26% | 97% | Minor Adverse |
| B2_0403a | 29.45% | 25.11% | 0.85 | 23.56% | BRE Compliant | Negligible |
| B2_0403b | 31.37% | 27.09% | 0.86 | 25.10% | BRE Compliant | Negligible |
| B2_0404a | 8.56% | 5.95% | 0.70 | 6.85% | 87% | Minor Adverse |
| B2_0405a | 33.17% | 26.41% | 0.80 | 26.54% | >99% | Negligible |
| B2_0405b#1 | 33.18% | 26.59% | 0.80 | 26.54% | BRE Compliant | - |
| B2_0405b#2 | 33.25% | 26.97% | 0.81 | 26.60% | BRE Compliant | - |
| B2_0405b#3 | 21.24% | 21.20% | 1.00 | 16.99% | BRE Compliant | - |
| B2_0405b# | 29.64% | 25.13% | 0.85 | 23.71% | BRE Compliant | Negligible |
| B2_0406a#2 | 31.79% | 29.43% | 0.93 | 25.43% | BRE Compliant | - |
| B2_0406a#3 | 32.18% | 29.58% | 0.92 | 25.74% | BRE Compliant | - |
| B2_0406a#4 | 32.55% | 25.21% | 0.77 | 26.04% | 97% | - |
| B2_0406a#5 | 33.17% | 26.01% | 0.78 | 26.54% | 98% | - |
| B2_0406a#6 | 33.17% | 26.15% | 0.79 | 26.54% | 99% | - |
| B2_0406a# | 32.63% | 26.96% | 0.83 | 26.10% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

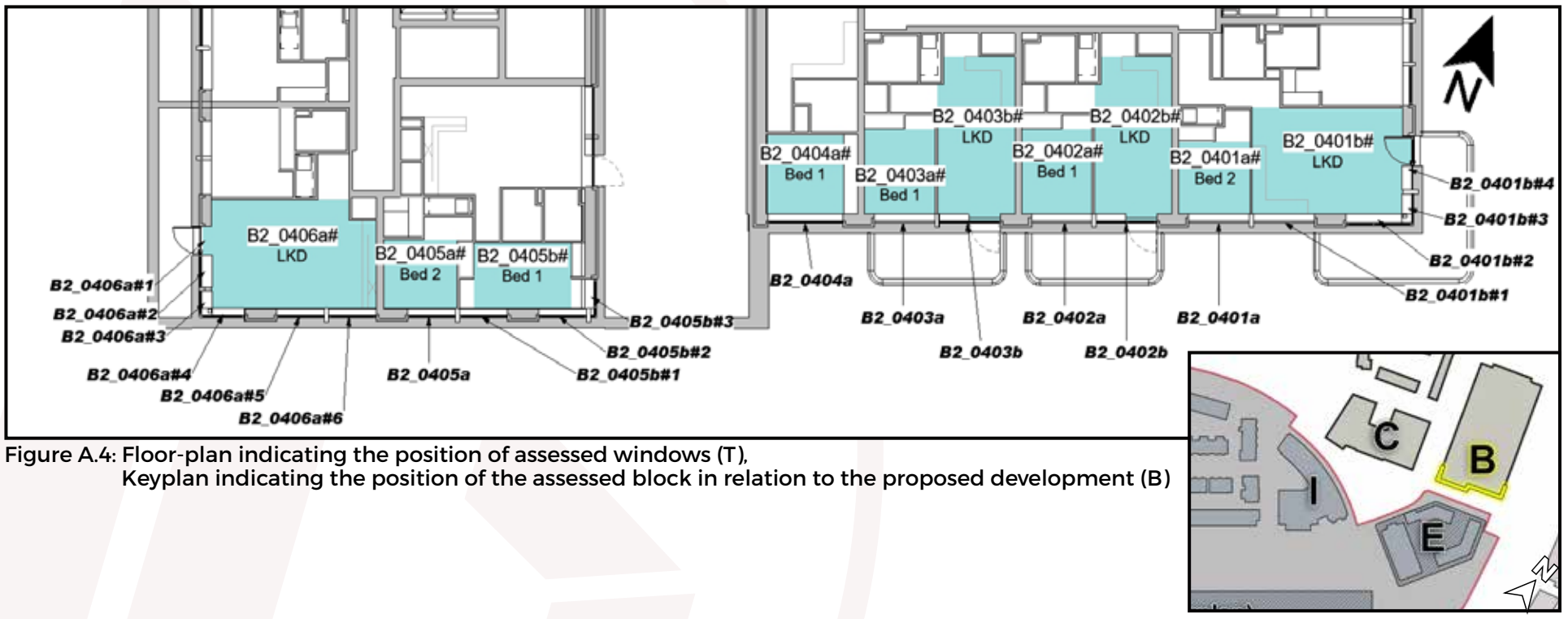


Figure A.4: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.5 Permitted Block B (Phase 1) - 5th Floor

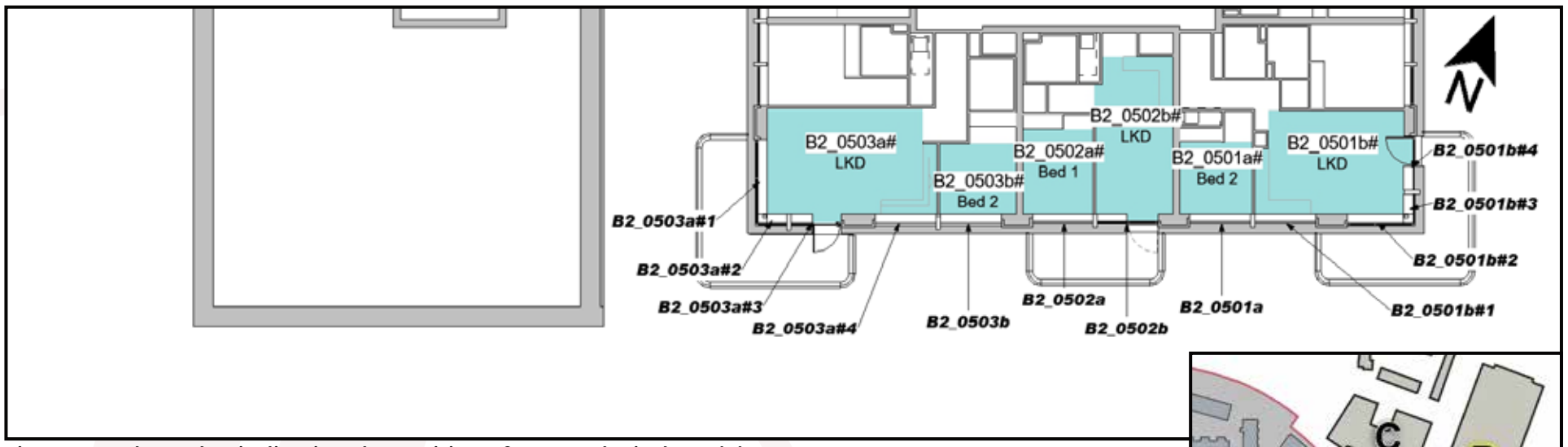
Table No. A.1.5 - VSC Results: Permitted Block B (Phase 1) - 5th Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0501a | 30.14% | 27.16% | 0.90 | 24.11% | BRE Compliant | Negligible |
| B2_0501b#1 | 27.60% | 24.76% | 0.90 | 22.08% | BRE Compliant | - |
| B2_0501b#2 | 8.89% | 7.17% | 0.81 | 7.11% | BRE Compliant | - |
| B2_0501b#3 | 8.94% | 8.94% | 1.00 | 7.15% | BRE Compliant | - |
| B2_0501b#4 | 12.34% | 12.34% | 1.00 | 9.87% | BRE Compliant | - |
| B2_0501b# | 14.38% | 13.21% | 0.92 | 11.51% | BRE Compliant | Negligible |
| B2_0502a | 9.86% | 7.34% | 0.74 | 7.89% | 93% | Minor Adverse |
| B2_0502b | 12.97% | 10.27% | 0.79 | 10.38% | 99% | Minor Adverse |
| B2_0503a#1 | 8.72% | 7.33% | 0.84 | 6.98% | BRE Compliant | - |
| B2_0503a#2 | 8.51% | 5.77% | 0.68 | 6.81% | 85% | - |
| B2_0503a#3 | 12.69% | 9.63% | 0.76 | 10.15% | 95% | - |
| B2_0503a#4 | 32.10% | 28.16% | 0.88 | 25.68% | BRE Compliant | - |
| B2_0503a# | 15.20% | 12.65% | 0.83 | 12.16% | BRE Compliant | Negligible |
| B2_0503b | 32.60% | 28.84% | 0.88 | 26.08% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.



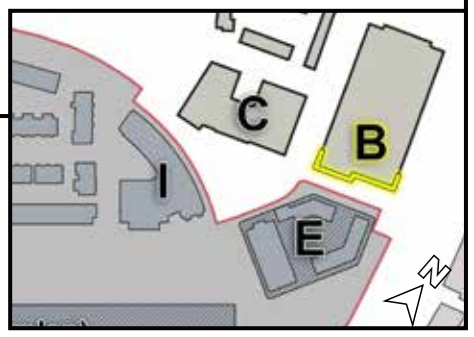




Figure A.5: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.6 Permitted Block B (Phase 1) - 6th Floor

| Table No. A.1.6 - VSC Results: Permitted Block B (Phase 1) - 6th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| B2_0601a | 33.24% | 30.59% | 0.92 | 26.59% | BRE Compliant | Negligible |
| B2_0601b#1 | 33.24% | 30.74% | 0.92 | 26.59% | BRE Compliant | - |
| B2_0601b#2 | 34.62% | 32.34% | 0.93 | 27.00% | BRE Compliant | - |
| B2_0601b#3 | 34.83% | 34.83% | 1.00 | 27.00% | BRE Compliant | - |
| B2_0601b#4 | 35.77% | 35.77% | 1.00 | 27.00% | BRE Compliant | - |
| B2_0601b# | 34.72% | 33.46% | 0.96 | 27.00% | BRE Compliant | Negligible |
| B2_0602a | 33.24% | 30.18% | 0.91 | 26.59% | BRE Compliant | Negligible |
| B2_0602b | 35.12% | 32.18% | 0.92 | 27.00% | BRE Compliant | Negligible |
| B2_0603a#1 | 34.57% | 32.49% | 0.94 | 27.00% | BRE Compliant | - |
| B2_0603a#2 | 34.83% | 30.95% | 0.89 | 27.00% | BRE Compliant | - |
| B2_0603a#4 | 35.75% | 32.00% | 0.90 | 27.00% | BRE Compliant | - |
| B2_0603a#5 | 33.24% | 29.75% | 0.90 | 26.59% | BRE Compliant | - |
| B2_0603a# | 34.53% | 31.51% | 0.91 | 27.00% | BRE Compliant | Negligible |
| B2_0603b | 33.24% | 29.92% | 0.90 | 26.59% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

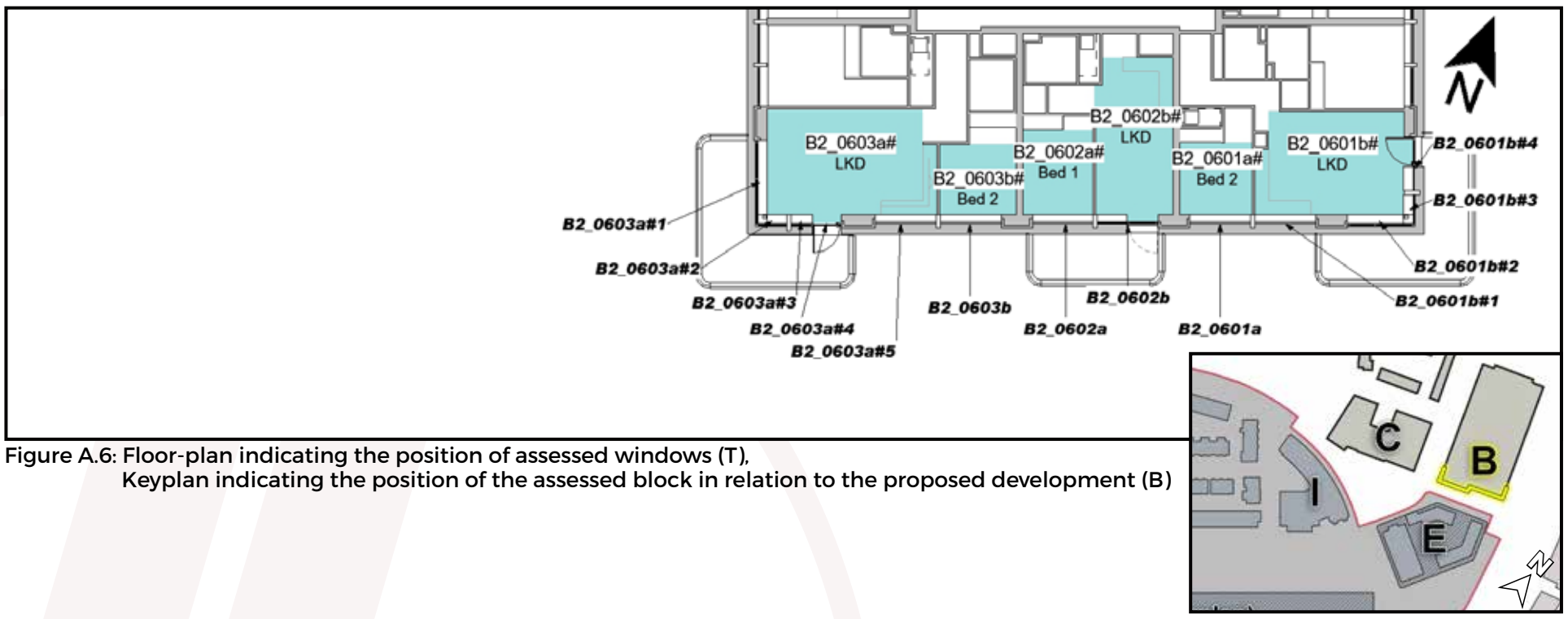


Figure A.6: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.7 Permitted Block B (Phase 1) - 7th Floor

| Table No. A.1.7 - VSC Results: Permitted Block B (Phase 1) - 7th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| B2_0701b | 15.06% | 12.78% | 0.85 | 12.05% | BRE Compliant | Negligible |
| B2_0701c#1 | 15.11% | 12.99% | 0.86 | 12.09% | BRE Compliant | - |
| B2_0701c#2 | 18.85% | 18.85% | 1.00 | 15.08% | BRE Compliant | - |
| B2_0702a | 15.05% | 12.62% | 0.84 | 12.04% | BRE Compliant | Negligible |
| B2_0702a#1 | 18.89% | 17.64% | 0.93 | 15.11% | BRE Compliant | - |
| B2_0702a#3 | 15.72% | 12.68% | 0.81 | 12.58% | BRE Compliant | - |
| B2_0702a#4 | 15.34% | 12.39% | 0.81 | 12.27% | BRE Compliant | - |
| B2_0702a# | 17.24% | 15.28% | 0.89 | 13.79% | BRE Compliant | Negligible |
| B2_0702b | 13.77% | 10.99% | 0.80 | 11.02% | >99% | Negligible |
| B2_0702c | 15.05% | 12.41% | 0.82 | 12.04% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

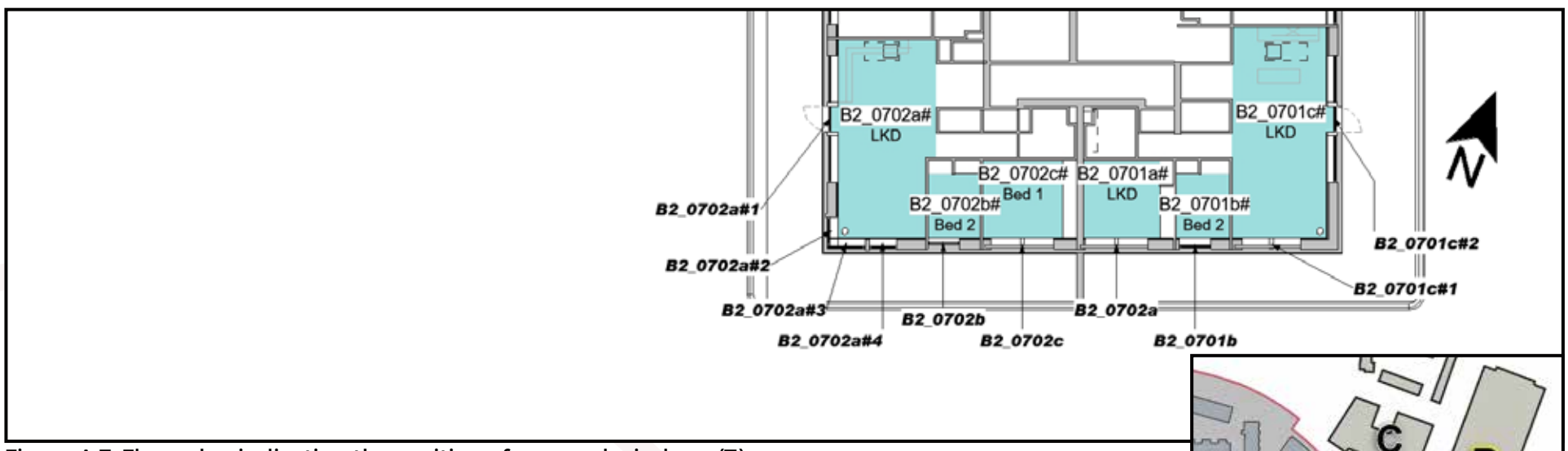


Figure A.7: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.8 Permitted Block C (Phase 1) - 1st Floor

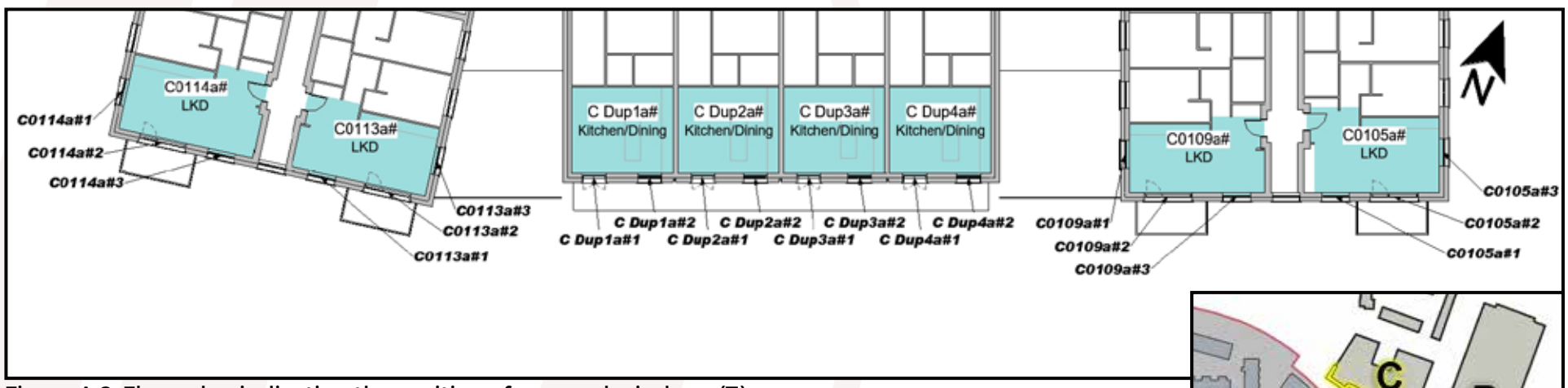
Table No. A.1.8 - VSC Results: Permitted Block C (Phase 1) - 1st Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| C Dup1a#1 | 35.68% | 22.01% | 0.62 | 27.00% | 82% | - |
| C Dup1a#2 | 35.80% | 22.80% | 0.64 | 27.00% | 84% | - |
| C Dup1a# | 35.74% | 22.41% | 0.63 | 27.00% | 83% | Minor Adverse |
| C Dup2a#1 | 35.73% | 23.31% | 0.65 | 27.00% | 86% | - |
| C Dup2a#2 | 35.80% | 23.95% | 0.67 | 27.00% | 89% | - |
| C Dup2a# | 35.77% | 23.63% | 0.66 | 27.00% | 88% | Minor Adverse |
| C Dup3a#1 | 35.73% | 24.38% | 0.68 | 27.00% | 90% | - |
| C Dup3a#2 | 35.81% | 24.82% | 0.69 | 27.00% | 92% | - |
| C Dup3a# | 35.77% | 24.60% | 0.69 | 27.00% | 91% | Minor Adverse |
| C Dup4a#1 | 35.74% | 25.09% | 0.70 | 27.00% | 93% | - |
| C Dup4a#2 | 35.72% | 25.35% | 0.71 | 27.00% | 94% | - |
| C Dup4a# | 35.73% | 25.22% | 0.71 | 27.00% | 93% | Minor Adverse |
| C0105a#1 | 31.32% | 20.35% | 0.65 | 25.06% | 81% | - |
| C0105a#2 | 15.07% | 5.55% | 0.37 | 12.06% | 46% | - |
| C0105a#3 | 29.30% | 26.54% | 0.91 | 23.44% | BRE Compliant | - |
| C0105a# | 23.26% | 15.17% | 0.65 | 18.61% | 82% | Minor Adverse |
| C0109a#1 | 24.54% | 20.04% | 0.82 | 19.63% | BRE Compliant | - |
| C0109a#2 | 15.08% | 5.94% | 0.39 | 12.06% | 49% | - |
| C0109a#3 | 33.02% | 22.85% | 0.69 | 26.42% | 87% | - |
| C0109a# | 22.44% | 14.27% | 0.64 | 17.96% | 80% | Moderate Adverse |
| C0113a#1 | 32.56% | 13.67% | 0.42 | 26.05% | 52% | - |
| C0113a#2 | 15.10% | 2.45% | 0.16 | 12.08% | 20% | - |
| C0113a#3 | 26.60% | 22.85% | 0.86 | 21.28% | BRE Compliant | - |
| C0113a# | 22.88% | 10.95% | 0.48 | 18.31% | 60% | Moderate Adverse |
| C0114a#1 | 35.72% | 30.72% | 0.86 | 27.00% | BRE Compliant | - |
| C0114a#2 | 14.96% | 2.10% | 0.14 | 11.97% | 18% | - |
| C0114a#3 | 32.01% | 13.42% | 0.42 | 25.61% | 52% | - |
| C0114a# | 25.12% | 12.83% | 0.51 | 20.10% | 64% | Moderate Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.



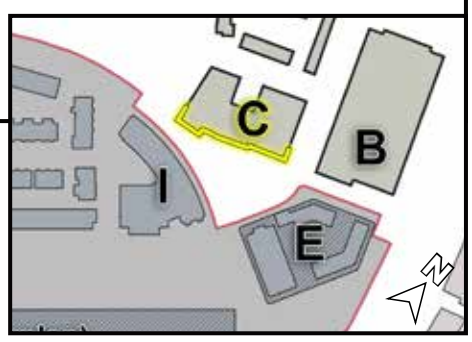




Figure A.8: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.9 Permitted Block C (Phase 1) - 2nd Floor

Table No. A.1.9 - VSC Results: Permitted Block C (Phase 1) - 2nd Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| C Dup1b | 35.91% | 23.99% | 0.67 | 27.00% | 89% | Minor Adverse |
| C Dup1c | 35.94% | 24.61% | 0.68 | 27.00% | 91% | Minor Adverse |
| C Dup2b | 35.94% | 25.10% | 0.70 | 27.00% | 93% | Minor Adverse |
| C Dup2c | 35.94% | 25.56% | 0.71 | 27.00% | 95% | Minor Adverse |
| C Dup3b | 35.94% | 26.01% | 0.72 | 27.00% | 96% | Minor Adverse |
| C Dup3c | 35.94% | 26.32% | 0.73 | 27.00% | 97% | Minor Adverse |
| C Dup4b | 35.95% | 26.62% | 0.74 | 27.00% | 99% | Minor Adverse |
| C Dup4c | 35.88% | 26.79% | 0.75 | 27.00% | 99% | Minor Adverse |
| C0205a#1 | 31.45% | 21.85% | 0.69 | 25.16% | 87% | - |
| C0205a#2 | 15.20% | 6.74% | 0.44 | 12.16% | 55% | - |
| C0205a#3 | 31.66% | 29.69% | 0.94 | 25.33% | BRE Compliant | - |
| C0205a# | 23.99% | 16.97% | 0.71 | 19.19% | 88% | Minor Adverse |
| C0206a#1 | 30.96% | 27.09% | 0.88 | 24.77% | BRE Compliant | - |
| C0206a#2 | 15.19% | 7.01% | 0.46 | 12.15% | 58% | - |
| C0206a#3 | 33.27% | 24.18% | 0.73 | 26.62% | 91% | - |
| C0206a# | 24.29% | 17.02% | 0.70 | 19.43% | 88% | Minor Adverse |
| C0213a#1 | 32.83% | 16.04% | 0.49 | 26.26% | 61% | - |
| C0213a#2 | 15.27% | 2.71% | 0.18 | 12.22% | 22% | - |
| C0213a#3 | 31.99% | 28.75% | 0.90 | 25.59% | BRE Compliant | - |
| C0213a# | 24.48% | 13.29% | 0.54 | 19.59% | 68% | Moderate Adverse |
| C0214a#1 | 36.19% | 31.91% | 0.88 | 27.00% | BRE Compliant | - |
| C0214a#2 | 15.12% | 2.27% | 0.15 | 12.10% | 19% | - |
| C0214a#3 | 32.16% | 15.39% | 0.48 | 25.73% | 60% | - |
| C0214a# | 25.36% | 13.76% | 0.54 | 20.29% | 68% | Moderate Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

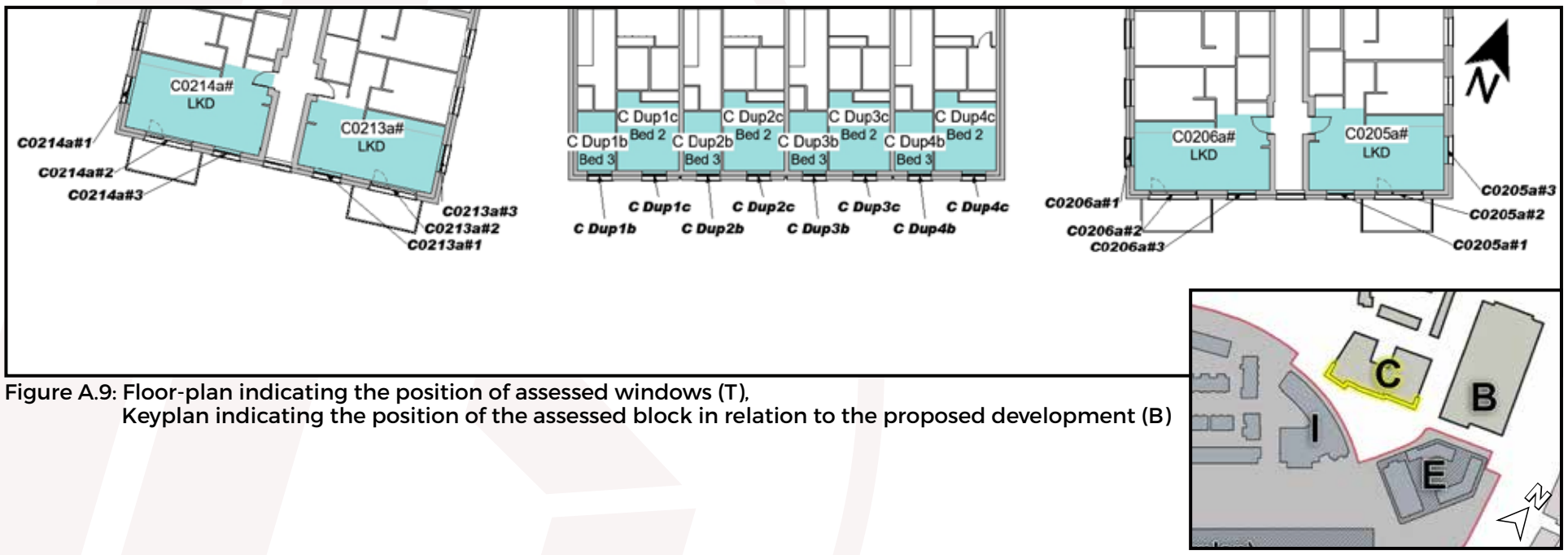


Figure A.9: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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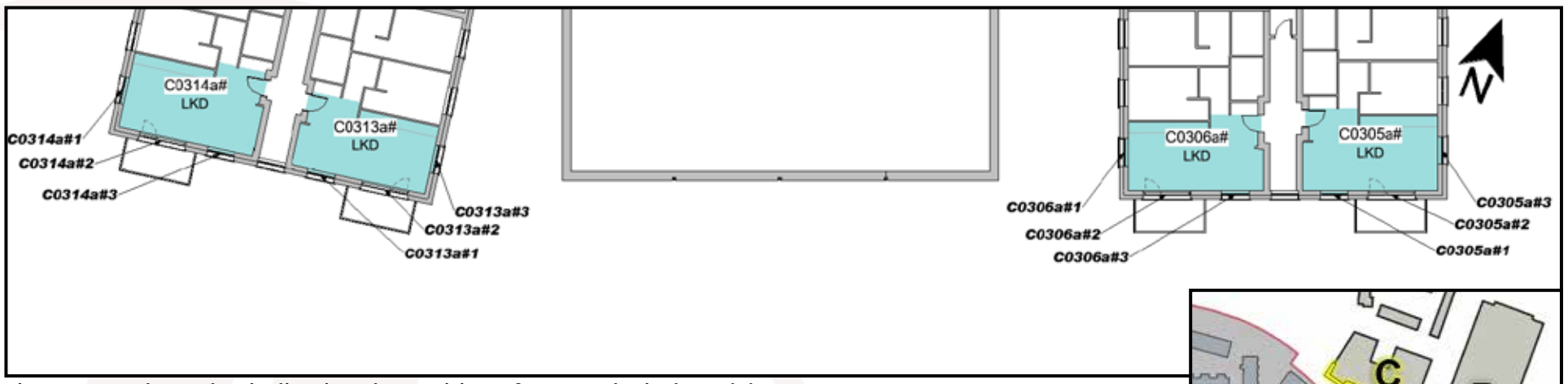
## A.1.10 Permitted Block C (Phase 1) - 3rd Floor

| Table No. A.1.10 - VSC Results: Permitted Block C (Phase 1) - 3rd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| C0305a#1 | 31.59% | 23.36% | 0.74 | 25.27% | 92% | - |
| C0305a#2 | 15.30% | 7.97% | 0.52 | 12.24% | 65% | - |
| C0305a#3 | 33.53% | 32.31% | 0.96 | 26.82% | BRE Compliant | - |
| C0305a# | 24.58% | 18.65% | 0.76 | 19.66% | 95% | Minor Adverse |
| C0306a#1 | 35.01% | 31.47% | 0.90 | 27.00% | BRE Compliant | - |
| C0306a#2 | 15.29% | 8.14% | 0.53 | 12.23% | 67% | - |
| C0306a#3 | 34.17% | 26.22% | 0.77 | 27.00% | 97% | - |
| C0306a# | 25.66% | 19.27% | 0.75 | 20.53% | 94% | Minor Adverse |
| C0313a#1 | 33.81% | 19.51% | 0.58 | 27.00% | 72% | - |
| C0313a#2 | 15.28% | 3.01% | 0.20 | 12.22% | 25% | - |
| C0313a#3 | 34.78% | 32.06% | 0.92 | 27.00% | BRE Compliant | - |
| C0313a# | 25.50% | 15.25% | 0.60 | 20.40% | 75% | Moderate Adverse |
| C0314a#1 | 36.61% | 33.05% | 0.90 | 27.00% | BRE Compliant | - |
| C0314a#2 | 15.27% | 2.56% | 0.17 | 12.22% | 21% | - |
| C0314a#3 | 33.09% | 18.44% | 0.56 | 26.47% | 70% | - |
| C0314a# | 25.80% | 15.02% | 0.58 | 20.64% | 73% | Moderate Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.



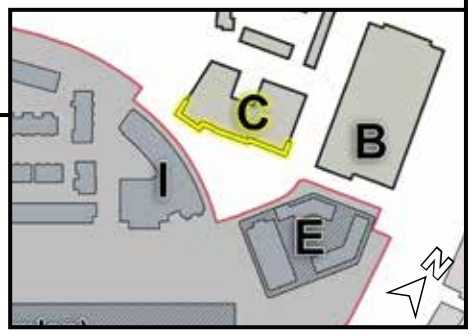




Figure A.10: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.11 Permitted Block C (Phase 1) - 4th Floor

Table No. A.1.11 - VSC Results: Permitted Block C (Phase 1) - 4th Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| C0405a#1 | 32.44% | 25.54% | 0.79 | 25.95% | 98% | - |
| C0405a#2 | 15.38% | 9.10% | 0.59 | 12.30% | 74% | - |
| C0405a#3 | 34.78% | 34.16% | 0.98 | 27.00% | BRE Compliant | - |
| C0405a# | 25.18% | 20.25% | 0.80 | 20.14% | BRE Compliant | Negligible |
| C0406a#1 | 36.16% | 33.34% | 0.92 | 27.00% | BRE Compliant | - |
| C0406a#2 | 37.38% | 30.68% | 0.82 | 27.00% | BRE Compliant | - |
| C0406a#3 | 36.98% | 30.23% | 0.82 | 27.00% | BRE Compliant | - |
| C0406a# | 36.94% | 31.27% | 0.85 | 27.00% | BRE Compliant | Negligible |
| C0412a#1 | 37.02% | 25.17% | 0.68 | 27.00% | 93% | - |
| C0412a#2 | 37.38% | 26.07% | 0.70 | 27.00% | 97% | - |
| C0412a#3 | 35.64% | 33.41% | 0.94 | 27.00% | BRE Compliant | - |
| C0412a# | 36.82% | 27.80% | 0.76 | 27.00% | BRE Compliant | Negligible |
| C0413a#1 | 36.93% | 34.15% | 0.92 | 27.00% | BRE Compliant | - |
| C0413a#2 | 37.38% | 24.29% | 0.65 | 27.00% | 90% | - |
| C0413a#3 | 37.02% | 24.36% | 0.66 | 27.00% | 90% | - |
| C0413a# | 37.16% | 26.96% | 0.73 | 27.00% | >99% | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

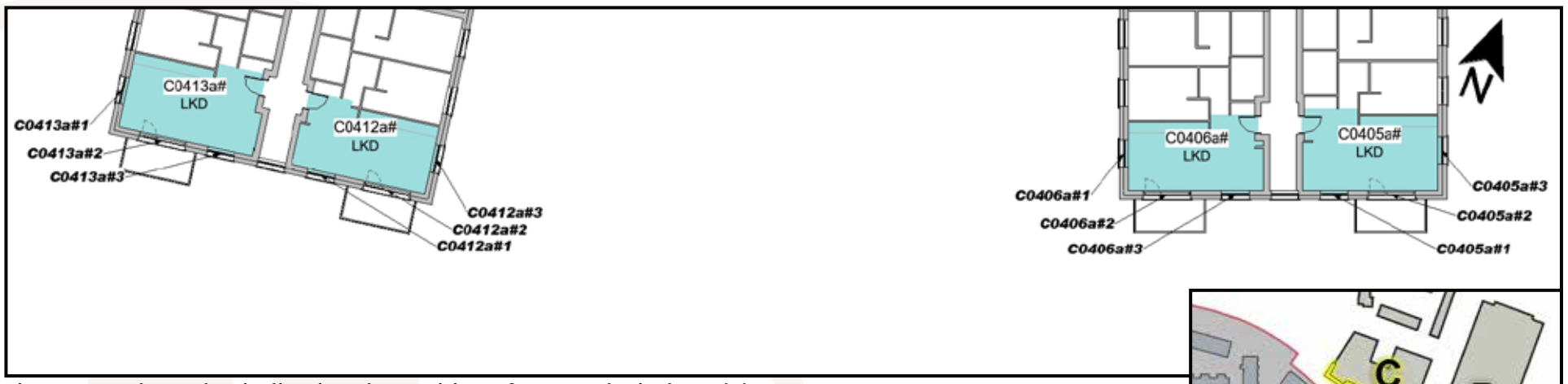


Figure A.11: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.12 Permitted Block C (Phase 1) - 5th Floor

Table No. A.1.12 - VSC Results: Permitted Block C (Phase 1) - 5th Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| C0504a#1 | 37.06% | 31.13% | 0.84 | 27.00% | BRE Compliant | - |
| C0504a#2 | 37.43% | 31.34% | 0.84 | 27.00% | BRE Compliant | - |
| C0504a#3 | 35.68% | 35.11% | 0.98 | 27.00% | BRE Compliant | - |
| C0504a# | 36.86% | 32.30% | 0.88 | 27.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.

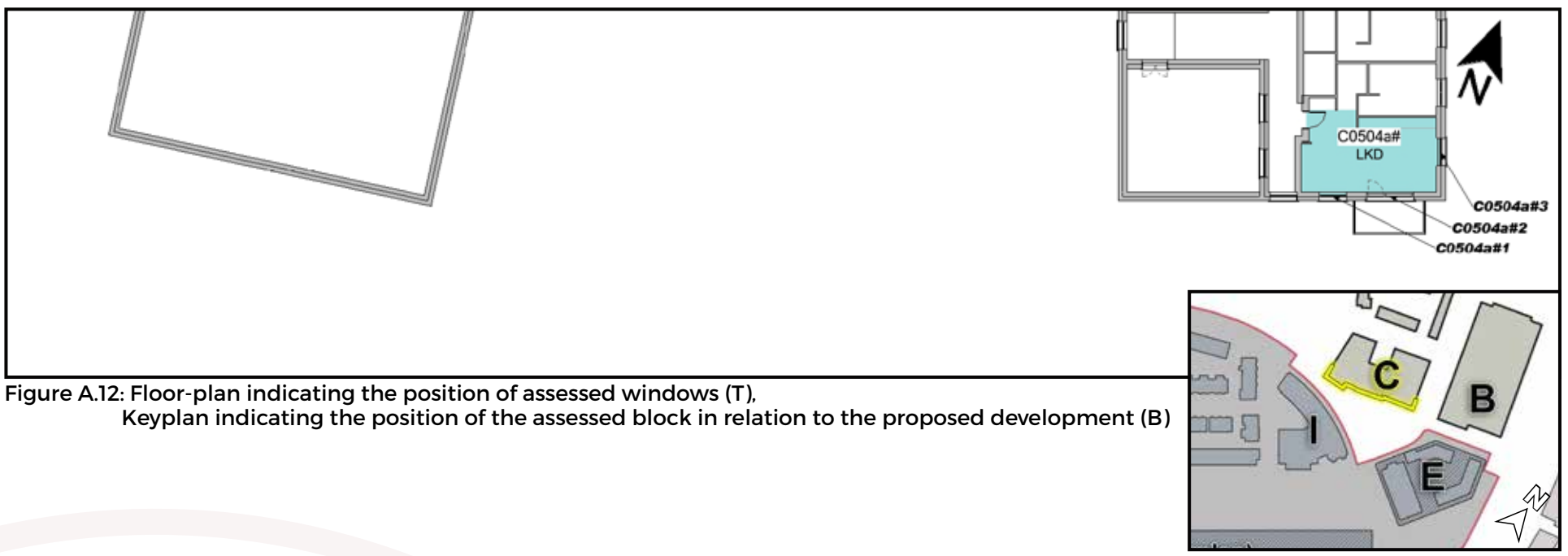


Figure A.12: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.1.13 Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor

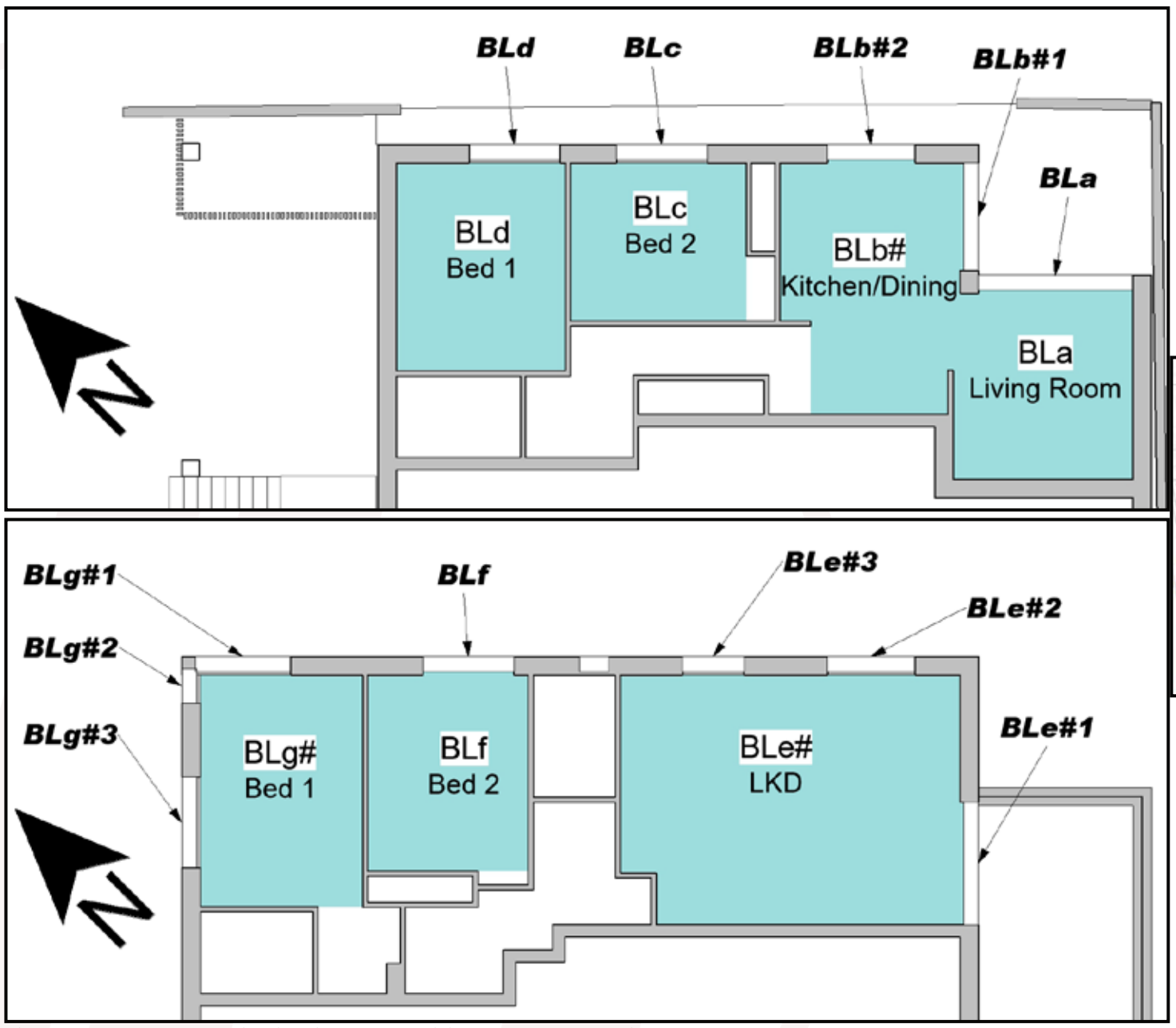
Table No. A.1.13 - VSC Results: Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor

| Window Number | Baseline VSC Value | Proposed VSC Value | Ratio of Proposed VSC to Baseline VSC | Recommended minimum VSC* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| BLa | 27.50% | 22.12% | 0.80 | 22.00% | BRE Compliant | Negligible |
| BLb#1 | 25.50% | 19.71% | 0.77 | 20.40% | 97% | - |
| BLb#2 | 37.95% | 28.46% | 0.75 | 27.00% | BRE Compliant | - |
| BLb# | 31.24% | 23.74% | 0.76 | 24.99% | 95% | Minor Adverse |
| BLc | 37.96% | 27.19% | 0.72 | 27.00% | BRE Compliant | Negligible |
| BLd | 37.99% | 26.53% | 0.70 | 27.00% | 98% | Minor Adverse |
| BLe#1 | 35.78% | 34.67% | 0.97 | 27.00% | BRE Compliant | - |
| BLe#2 | 38.30% | 35.91% | 0.94 | 27.00% | BRE Compliant | - |
| BLe#3 | 38.31% | 36.01% | 0.94 | 27.00% | BRE Compliant | - |
| BLe# | 37.05% | 35.31% | 0.95 | 27.00% | BRE Compliant | Negligible |
| BLf | 38.36% | 36.17% | 0.94 | 27.00% | BRE Compliant | Negligible |
| BLg#1 | 38.37% | 36.09% | 0.94 | 27.00% | BRE Compliant | - |
| BLg#2 | 38.04% | 37.42% | 0.98 | 27.00% | BRE Compliant | - |
| BLg#3 | 37.96% | 37.42% | 0.99 | 27.00% | BRE Compliant | - |
| BLg# | 38.15% | 36.85% | 0.97 | 27.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the VSC of an existing window, the value needs to both drop below the stated target value of 27% **and** be less than 0.8 times the baseline value.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated to determine the level of effect of the room. In such instances, the 'effect of proposed development' column will have the symbol "-" for the individual windows, with the level effect stated in the row associated with the corresponding room.



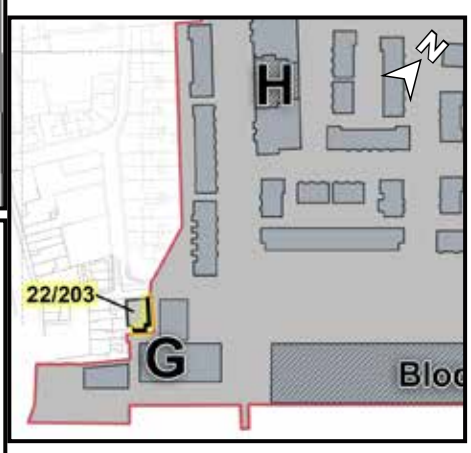




Figure A.13: Floor-plan indicating the position of assessed windows, Ground Floor (T) & 1st Floor (B)
Keyplan indicating the position of the assessed block in relation to the proposed development (R)

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## A.2 Effect on No Sky Line (NSL)

Below is an example of the table used to describe the effect on NSL.

| Table Example. A.2 - NSL Impact Assessment | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL | Level of Compliance with BRE Guidelines | Effect of Proposed Development |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** |

**A: Room Number**

The number in this column will identify the assessed Room. All assessed rooms are represented visually in the corresponding figure.

**B: Baseline No Sky Line (NSL) Value**

The *Baseline NSL Value* represents the NSL value of the assessed room which is calculated in the baseline model state (as explained in the "Building the Model States" on page 15).

**C: Proposed No Sky Line (NSL) Value**

The *Proposed NSL Value* represents the NSL value of the assessed room which is calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

**D: Ratio of Proposed NSL to Baseline NSL**

This column expressed the ratio of change between the baseline NSL value and the proposed NSL value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction in daylight is more likely to be perceptible.

**E: Recommended minimum NSL**

The *BRE Target Value* for each room has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the daylight received by an existing room, if the NSL value **both** drops below the guideline value of 80% **and** the NSL value is less than 0.8 times the baseline value.

Therefore, to determine the *recommended minimum Value*, 80% of the *Baseline NSL value* has been calculated.

**F: Level of Compliance with the BRE Guidelines**

This column states the compliance of the *Proposed NSL Value* with the *recommended minimum NSL* as per the BRE Guidelines. In essence, it shows whether or not the assessed room would experience a perceptible level of impact. If the room complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the room does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

**G: Effect of Proposed Development**

The levels of effect in this column describe the effect an assessed room will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section *"Definition of Effects"* on page 12.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation on these figures may yield a negligible difference and should not be considered an error.

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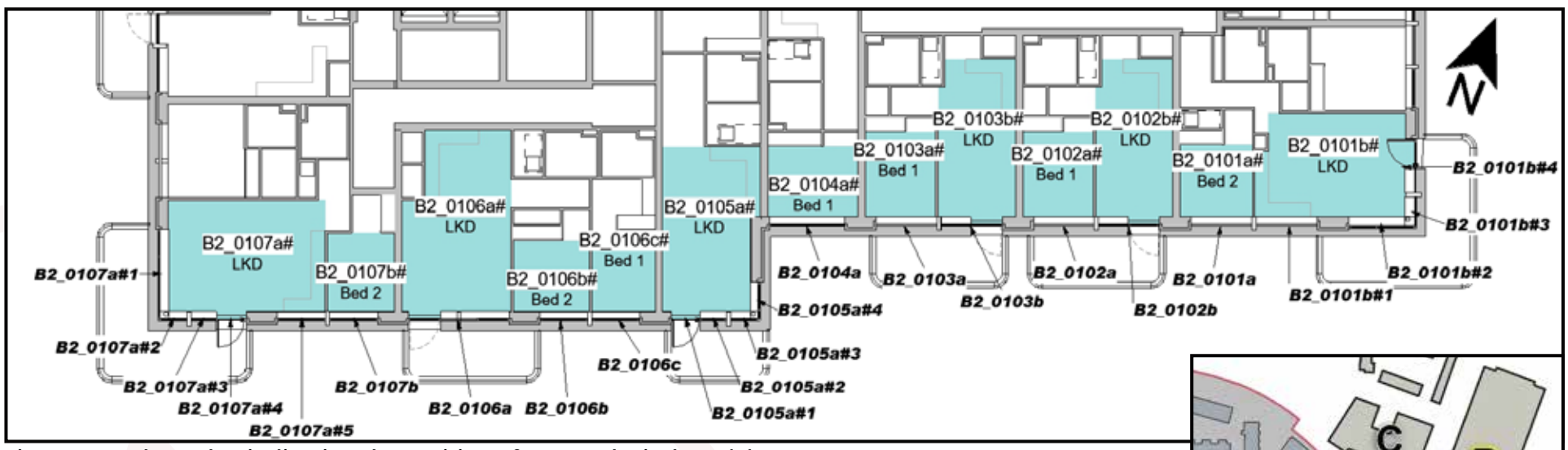
## A.2.1 Permitted Block B (Phase 1) - 1st Floor

Table No. A.2.1 - NSL Results: Permitted Block B (Phase 1) - 1st Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0101a# | 97.23% | 97.23% | 1.00 | 77.78% | BRE Compliant | Negligible |
| B2_0101b# | 99.89% | 99.89% | 1.00 | 79.92% | BRE Compliant | Negligible |
| B2_0102a# | 92.69% | 92.29% | 1.00 | 74.15% | BRE Compliant | Negligible |
| B2_0102b# | 99.16% | 95.41% | 0.96 | 79.33% | BRE Compliant | Negligible |
| B2_0103a# | 91.93% | 91.89% | 1.00 | 73.54% | BRE Compliant | Negligible |
| B2_0103b# | 98.19% | 95.14% | 0.97 | 78.55% | BRE Compliant | Negligible |
| B2_0104a# | 93.82% | 92.88% | 0.99 | 75.06% | BRE Compliant | Negligible |
| B2_0105a# | 99.42% | 87.98% | 0.88 | 79.54% | BRE Compliant | Negligible |
| B2_0106a# | 97.72% | 53.38% | 0.55 | 78.17% | 68% | Moderate Adverse |
| B2_0106b# | 95.77% | 94.47% | 0.99 | 76.61% | BRE Compliant | Negligible |
| B2_0106c# | 97.10% | 86.15% | 0.89 | 77.68% | BRE Compliant | Negligible |
| B2_0107a# | 98.94% | 97.66% | 0.99 | 79.15% | BRE Compliant | Negligible |
| B2_0107b# | 97.14% | 82.28% | 0.85 | 77.71% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.



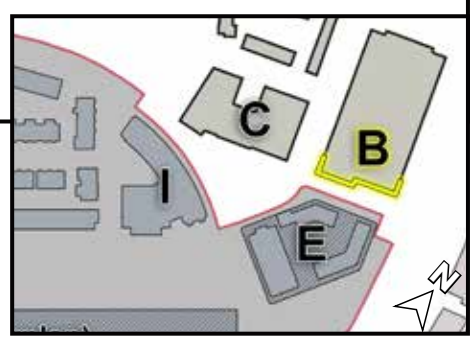




Figure A.14: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.2 Permitted Block B (Phase 1) - 2nd Floor

| Table No. A.2.2 - NSL Results: Permitted Block B (Phase 1) - 2nd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| B2_0201a# | 97.31% | 97.31% | 1.00 | 77.85% | BRE Compliant | Negligible |
| B2_0201b# | 99.92% | 99.92% | 1.00 | 79.93% | BRE Compliant | Negligible |
| B2_0202a# | 92.62% | 92.44% | 1.00 | 74.09% | BRE Compliant | Negligible |
| B2_0202b# | 99.15% | 99.14% | 1.00 | 79.32% | BRE Compliant | Negligible |
| B2_0203a# | 93.28% | 93.28% | 1.00 | 74.63% | BRE Compliant | Negligible |
| B2_0203b# | 98.21% | 98.17% | 1.00 | 78.57% | BRE Compliant | Negligible |
| B2_0204a# | 95.34% | 95.34% | 1.00 | 76.27% | BRE Compliant | Negligible |
| B2_0205a# | 99.55% | 96.33% | 0.97 | 79.64% | BRE Compliant | Negligible |
| B2_0206a# | 97.74% | 63.03% | 0.64 | 78.19% | 81% | Minor Adverse |
| B2_0206b# | 96.00% | 95.96% | 1.00 | 76.80% | BRE Compliant | Negligible |
| B2_0206c# | 97.26% | 90.73% | 0.93 | 77.81% | BRE Compliant | Negligible |
| B2_0207a# | 98.98% | 98.88% | 1.00 | 79.18% | BRE Compliant | Negligible |
| B2_0207b# | 97.31% | 90.10% | 0.93 | 77.85% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

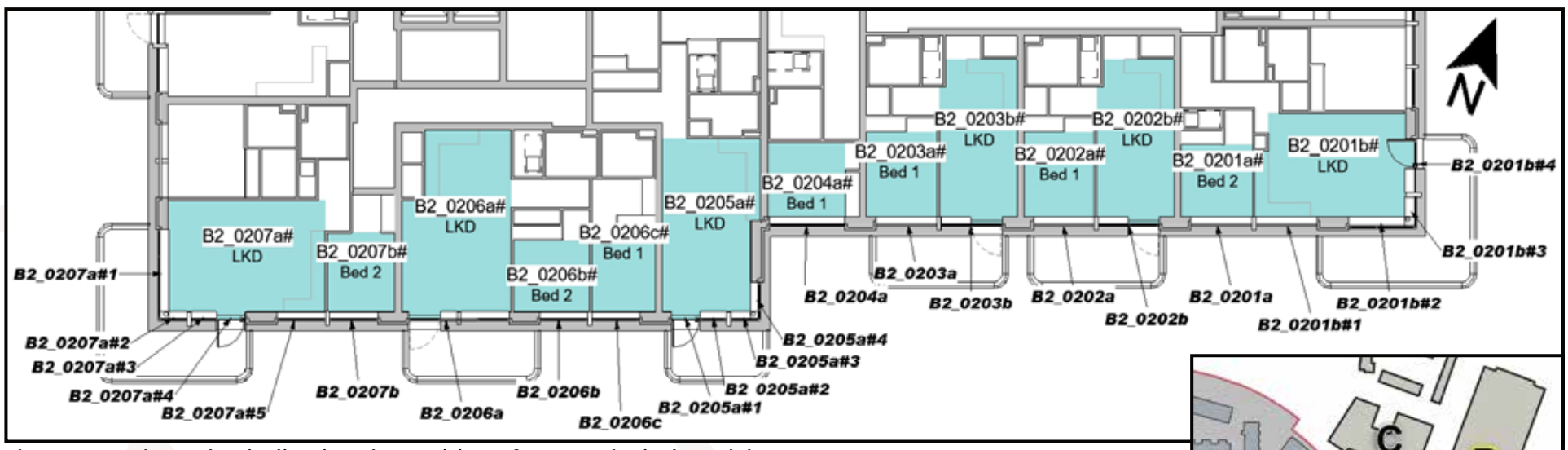


Figure A.15: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.3 Permitted Block B (Phase 1) - 3rd Floor

Table No. A.2.3 - NSL Results: Permitted Block B (Phase 1) - 3rd Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0301a# | 97.31% | 97.31% | 1.00 | 77.85% | BRE Compliant | Negligible |
| B2_0301b# | 99.89% | 99.89% | 1.00 | 79.91% | BRE Compliant | Negligible |
| B2_0302a# | 92.86% | 92.70% | 1.00 | 74.28% | BRE Compliant | Negligible |
| B2_0302b# | 99.17% | 99.16% | 1.00 | 79.33% | BRE Compliant | Negligible |
| B2_0303a# | 93.92% | 93.92% | 1.00 | 75.13% | BRE Compliant | Negligible |
| B2_0303b# | 98.28% | 98.27% | 1.00 | 78.63% | BRE Compliant | Negligible |
| B2_0304a# | 95.27% | 95.27% | 1.00 | 76.22% | BRE Compliant | Negligible |
| B2_0305a# | 99.63% | 97.79% | 0.98 | 79.70% | BRE Compliant | Negligible |
| B2_0306a# | 98.72% | 96.15% | 0.97 | 78.98% | BRE Compliant | Negligible |
| B2_0306b# | 96.25% | 96.25% | 1.00 | 77.00% | BRE Compliant | Negligible |
| B2_0306c# | 97.49% | 92.51% | 0.95 | 77.99% | BRE Compliant | Negligible |
| B2_0307a# | 99.14% | 99.14% | 1.00 | 79.31% | BRE Compliant | Negligible |
| B2_0307b# | 97.35% | 91.06% | 0.94 | 77.88% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

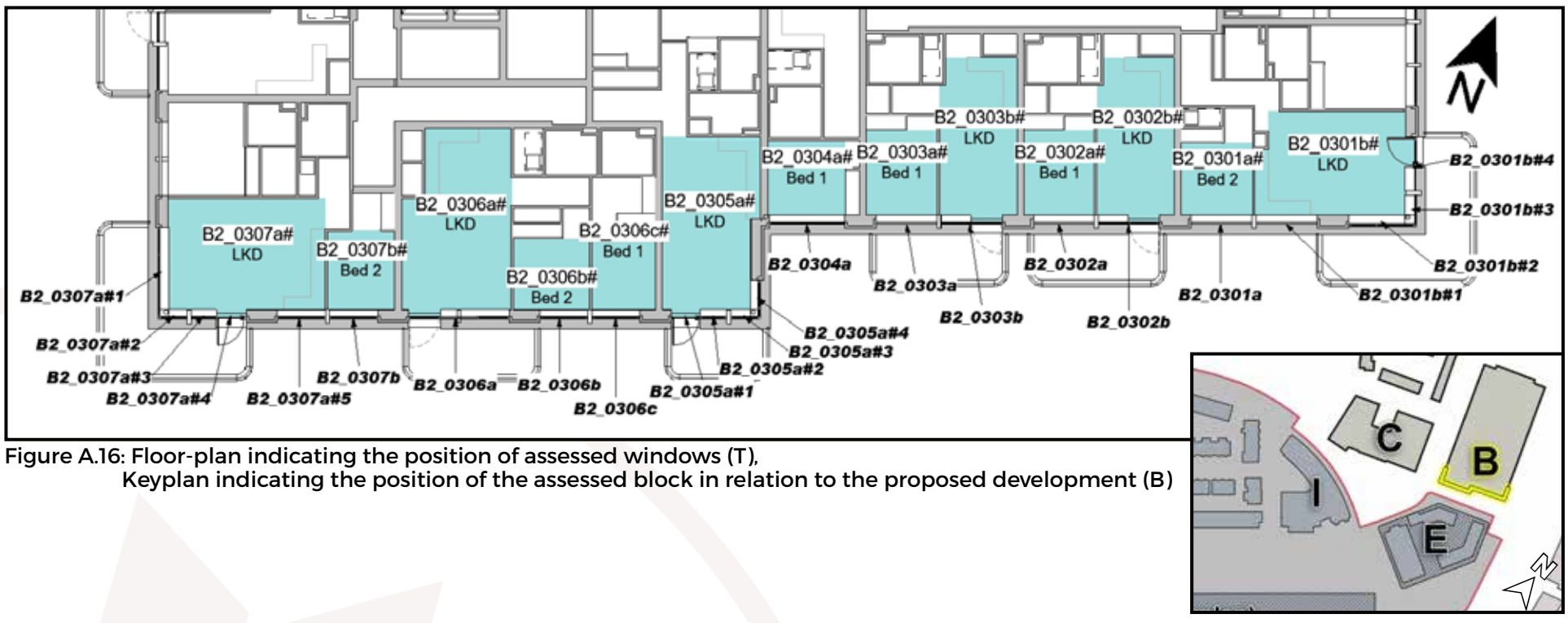


Figure A.16: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.4 Permitted Block B (Phase 1) - 4th Floor

Table No. A.2.4 - NSL Results: Permitted Block B (Phase 1) - 4th Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0401a# | 97.34% | 97.34% | 1.00 | 77.88% | BRE Compliant | Negligible |
| B2_0401b# | 99.90% | 99.90% | 1.00 | 79.92% | BRE Compliant | Negligible |
| B2_0402a# | 95.64% | 95.64% | 1.00 | 76.51% | BRE Compliant | Negligible |
| B2_0402b# | 99.19% | 99.19% | 1.00 | 79.35% | BRE Compliant | Negligible |
| B2_0403a# | 97.76% | 97.76% | 1.00 | 78.21% | BRE Compliant | Negligible |
| B2_0403b# | 99.41% | 99.41% | 1.00 | 79.53% | BRE Compliant | Negligible |
| B2_0404a# | 94.09% | 94.08% | 1.00 | 75.27% | BRE Compliant | Negligible |
| B2_0405a# | 96.43% | 96.24% | 1.00 | 77.14% | BRE Compliant | Negligible |
| B2_0405b# | 100.00% | 100.00% | 1.00 | 80.00% | BRE Compliant | Negligible |
| B2_0406a# | 99.85% | 99.85% | 1.00 | 79.88% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

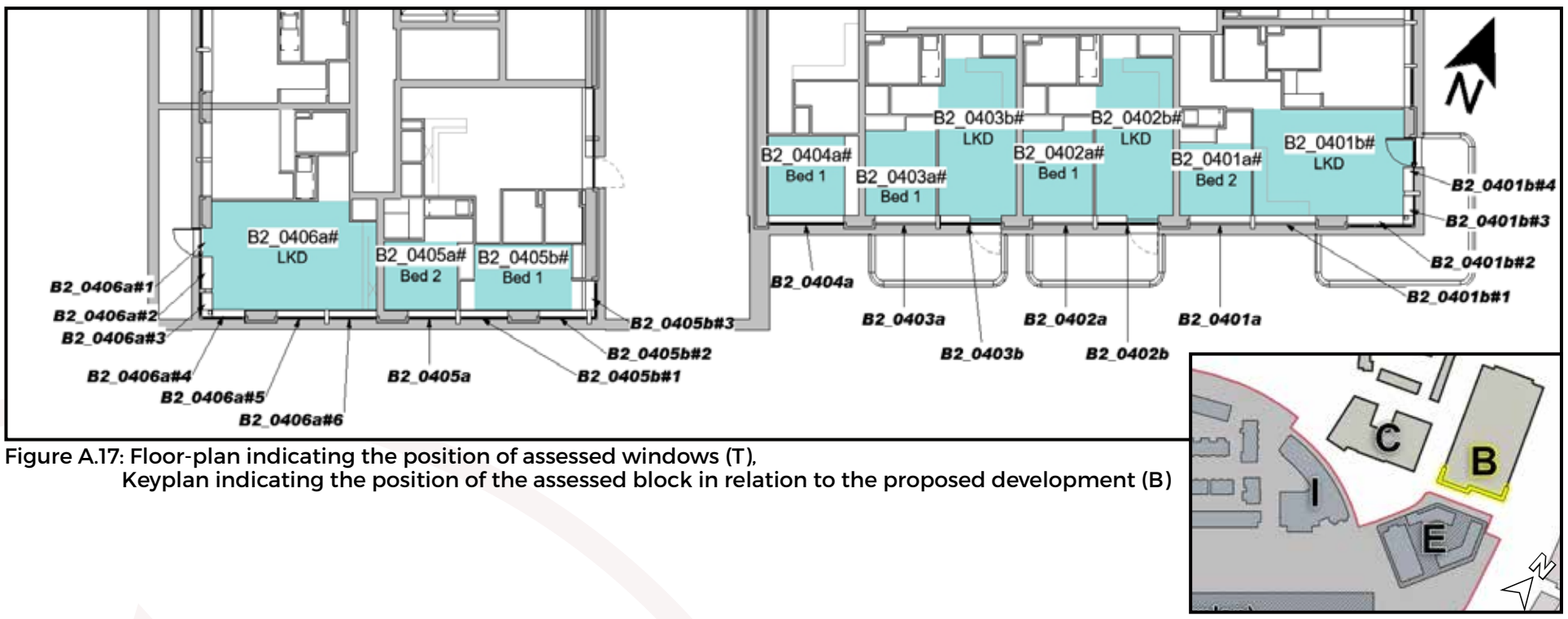


Figure A.17: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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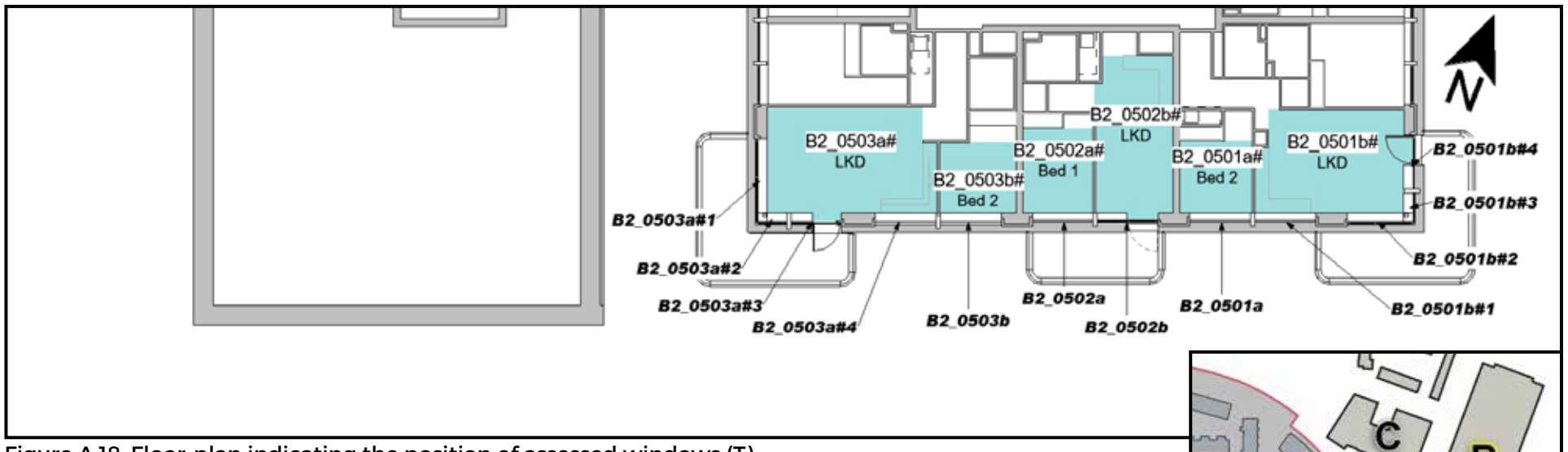
## A.2.5 Permitted Block B (Phase 1) - 5th Floor

Table No. A.2.5 - NSL Results: Permitted Block B (Phase 1) - 5th Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0501a# | 97.36% | 97.36% | 1.00 | 77.89% | BRE Compliant | Negligible |
| B2_0501b# | 99.90% | 99.90% | 1.00 | 79.92% | BRE Compliant | Negligible |
| B2_0502a# | 95.66% | 95.66% | 1.00 | 76.52% | BRE Compliant | Negligible |
| B2_0502b# | 99.20% | 99.20% | 1.00 | 79.36% | BRE Compliant | Negligible |
| B2_0503a# | 99.93% | 99.93% | 1.00 | 79.94% | BRE Compliant | Negligible |
| B2_0503b# | 95.00% | 95.00% | 1.00 | 76.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.



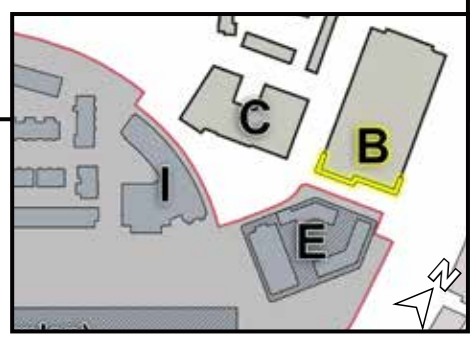




Figure A.18: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.6 Permitted Block B (Phase 1) - 6th Floor

Table No. A.2.6 - NSL Results: Permitted Block B (Phase 1) - 6th Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| B2_0601a# | 97.38% | 97.38% | 1.00 | 77.90% | BRE Compliant | Negligible |
| B2_0601b# | 99.97% | 99.97% | 1.00 | 79.97% | BRE Compliant | Negligible |
| B2_0602a# | 97.80% | 97.80% | 1.00 | 78.24% | BRE Compliant | Negligible |
| B2_0602b# | 99.41% | 99.41% | 1.00 | 79.52% | BRE Compliant | Negligible |
| B2_0603a# | 99.95% | 99.95% | 1.00 | 79.96% | BRE Compliant | Negligible |
| B2_0603b# | 97.21% | 97.21% | 1.00 | 77.77% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

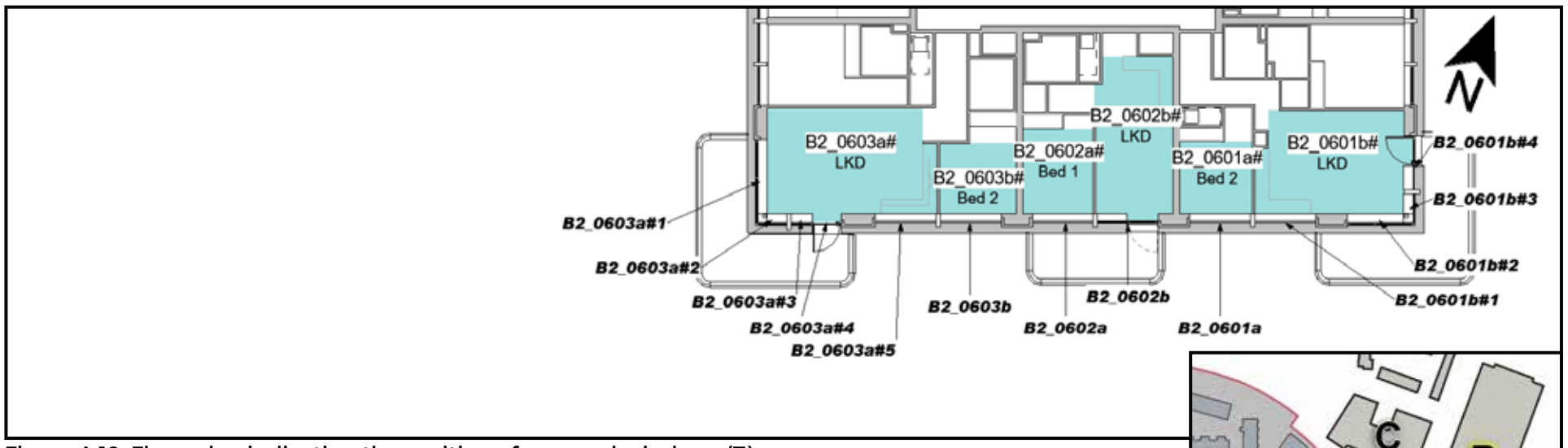


Figure A.19: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.7 Permitted Block B (Phase 1) - 7th Floor

| Table No. A.2.7 - NSL Results: Permitted Block B (Phase 1) - 7th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| B2_0701b# | 88.87% | 88.87% | 1.00 | 71.09% | BRE Compliant | Negligible |
| B2_0701c# | 99.33% | 99.33% | 1.00 | 79.46% | BRE Compliant | Negligible |
| B2_0702a# | 99.62% | 99.62% | 1.00 | 79.69% | BRE Compliant | Negligible |
| B2_0702b# | 88.88% | 88.88% | 1.00 | 71.11% | BRE Compliant | Negligible |
| B2_0702c# | 90.98% | 90.98% | 1.00 | 72.78% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

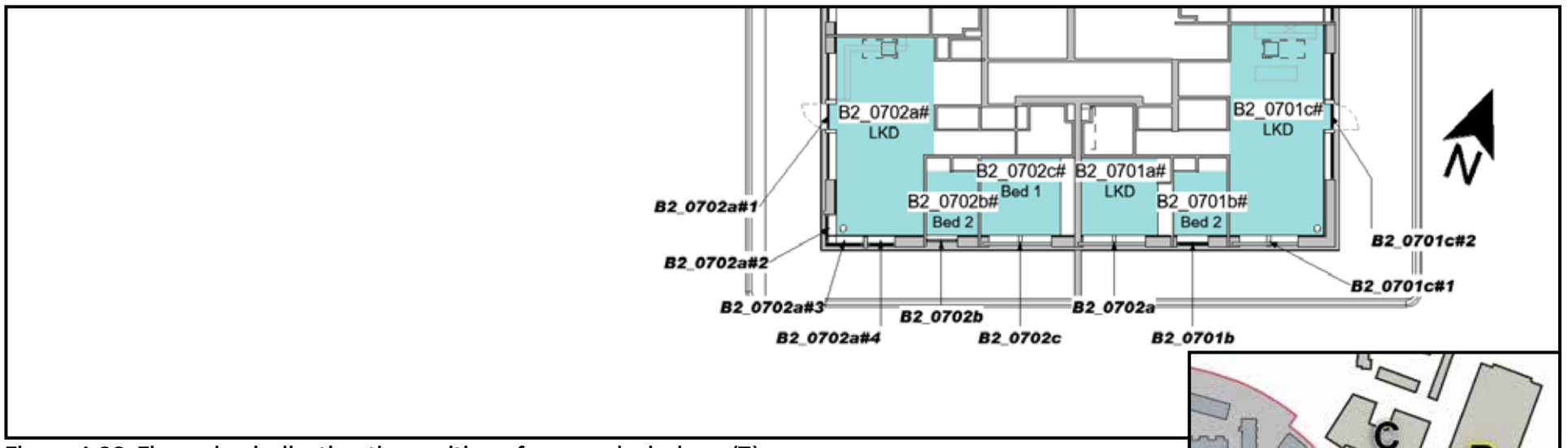


Figure A.20: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.8 Permitted Block C (Phase 1) - 1st Floor

Table No. A.2.8 - NSL Results: Permitted Block C (Phase 1) - 1st Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| C Dup1a# | 98.33% | 82.14% | 0.84 | 78.66% | BRE Compliant | Negligible |
| C Dup2a# | 98.29% | 89.91% | 0.91 | 78.64% | BRE Compliant | Negligible |
| C Dup3a# | 98.39% | 93.86% | 0.95 | 78.71% | BRE Compliant | Negligible |
| C Dup4a# | 98.35% | 98.00% | 1.00 | 78.68% | BRE Compliant | Negligible |
| C0105a# | 99.36% | 98.69% | 0.99 | 79.49% | BRE Compliant | Negligible |
| C0109a# | 98.83% | 96.80% | 0.98 | 79.07% | BRE Compliant | Negligible |
| C0113a# | 98.69% | 96.60% | 0.98 | 78.95% | BRE Compliant | Negligible |
| C0114a# | 99.60% | 95.46% | 0.96 | 79.68% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

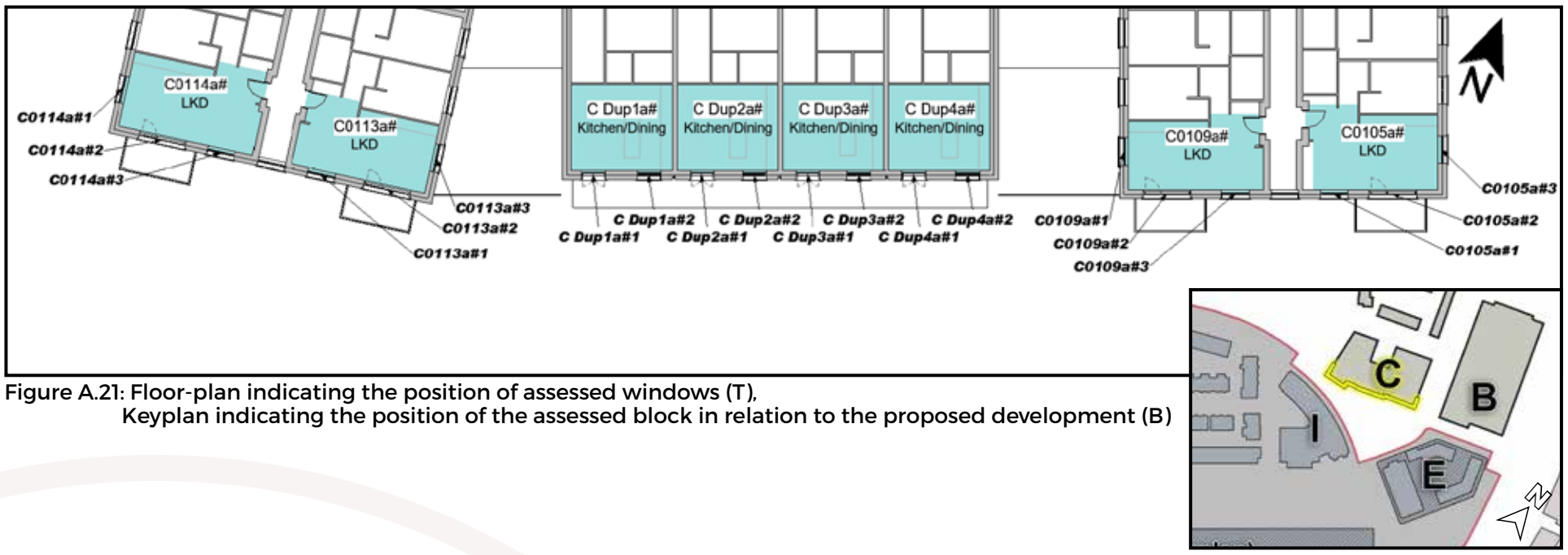


Figure A.21: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.9 Permitted Block C (Phase 1) - 2nd Floor

| Table No. A.2.9 - NSL Results: Permitted Block C (Phase 1) - 2nd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| C Dup1b | 98.99% | 91.40% | 0.92 | 79.19% | BRE Compliant | Negligible |
| C Dup1c | 96.06% | 85.04% | 0.89 | 76.85% | BRE Compliant | Negligible |
| C Dup2b | 98.48% | 97.29% | 0.99 | 78.79% | BRE Compliant | Negligible |
| C Dup2c | 96.26% | 89.28% | 0.93 | 77.01% | BRE Compliant | Negligible |
| C Dup3b | 98.41% | 98.41% | 1.00 | 78.73% | BRE Compliant | Negligible |
| C Dup3c | 96.17% | 92.40% | 0.96 | 76.94% | BRE Compliant | Negligible |
| C Dup4b | 98.48% | 98.48% | 1.00 | 78.79% | BRE Compliant | Negligible |
| C Dup4c | 95.79% | 89.95% | 0.94 | 76.63% | BRE Compliant | Negligible |
| C0205a# | 98.98% | 98.96% | 1.00 | 79.18% | BRE Compliant | Negligible |
| C0206a# | 99.05% | 98.15% | 0.99 | 79.24% | BRE Compliant | Negligible |
| C0213a# | 99.21% | 98.17% | 0.99 | 79.36% | BRE Compliant | Negligible |
| C0214a# | 99.59% | 96.08% | 0.96 | 79.67% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

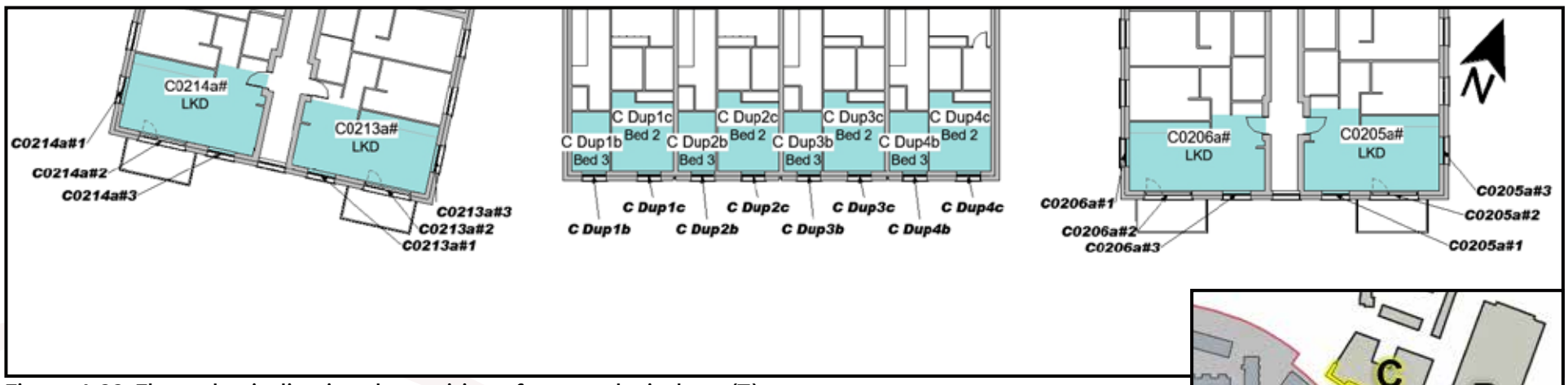


Figure A.22: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.10 Permitted Block C (Phase 1) - 3rd Floor

| Table No. A.2.10 - NSL Results: Permitted Block C (Phase 1) - 3rd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| C0305a# | 99.35% | 99.34% | 1.00 | 79.48% | BRE Compliant | Negligible |
| C0306a# | 99.73% | 99.21% | 0.99 | 79.78% | BRE Compliant | Negligible |
| C0313a# | 99.67% | 97.95% | 0.98 | 79.74% | BRE Compliant | Negligible |
| C0314a# | 99.60% | 95.54% | 0.96 | 79.68% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

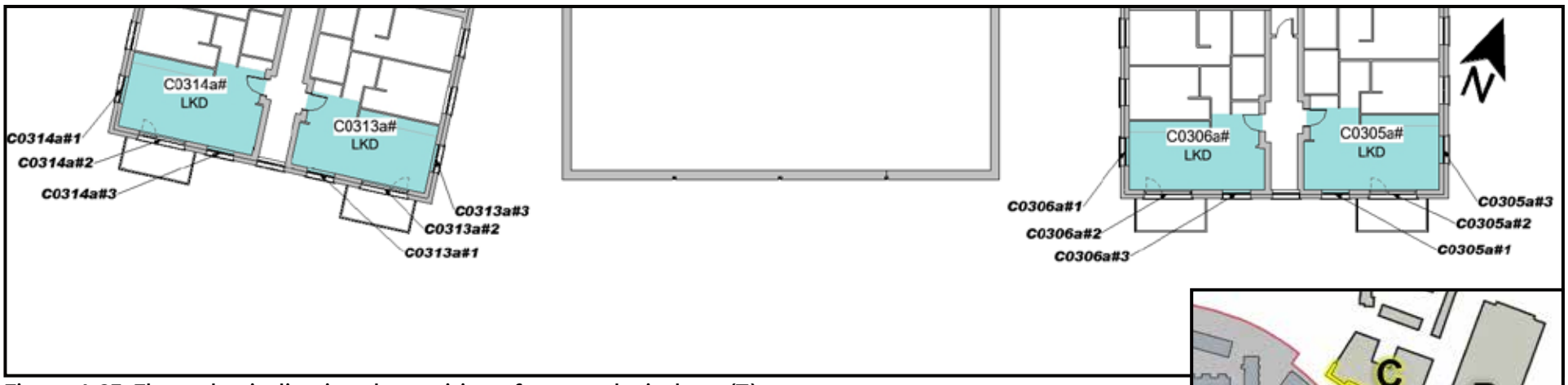


Figure A.23: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.11 Permitted Block C (Phase 1) - 4th Floor

| Table No. A.2.11 - NSL Results: Permitted Block C (Phase 1) - 4th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| C0405a# | 99.41% | 99.41% | 1.00 | 79.53% | BRE Compliant | Negligible |
| C0406a# | 99.78% | 99.27% | 0.99 | 79.82% | BRE Compliant | Negligible |
| C0412a# | 99.87% | 98.91% | 0.99 | 79.89% | BRE Compliant | Negligible |
| C0413a# | 99.60% | 96.17% | 0.97 | 79.68% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

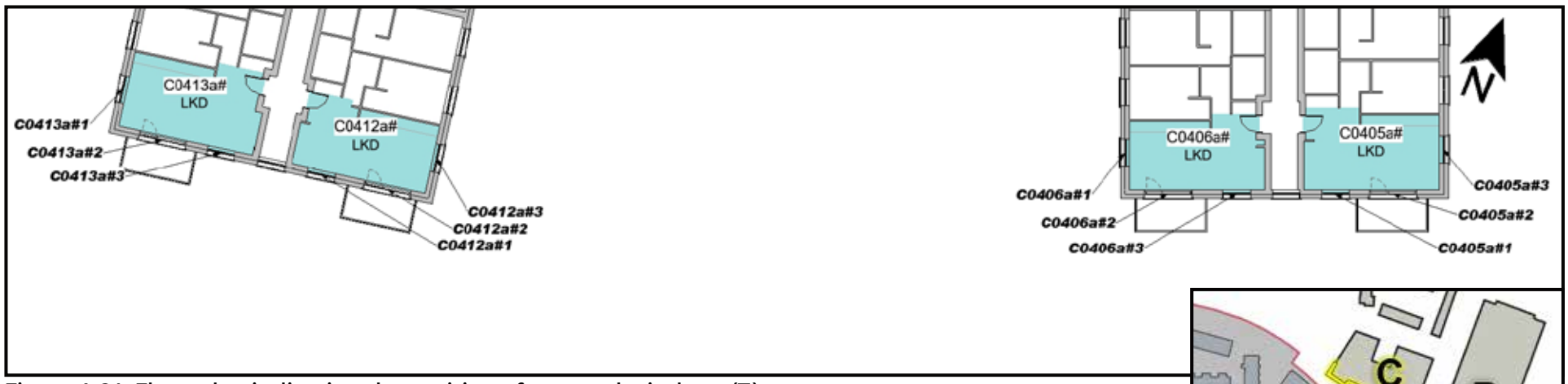


Figure A.24: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.12 Permitted Block C (Phase 1) - 5th Floor

| Table No. A.2.12 - NSL Results: Permitted Block C (Phase 1) - 5th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
| C0504a# | 99.73% | 99.73% | 1.00 | 79.78% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

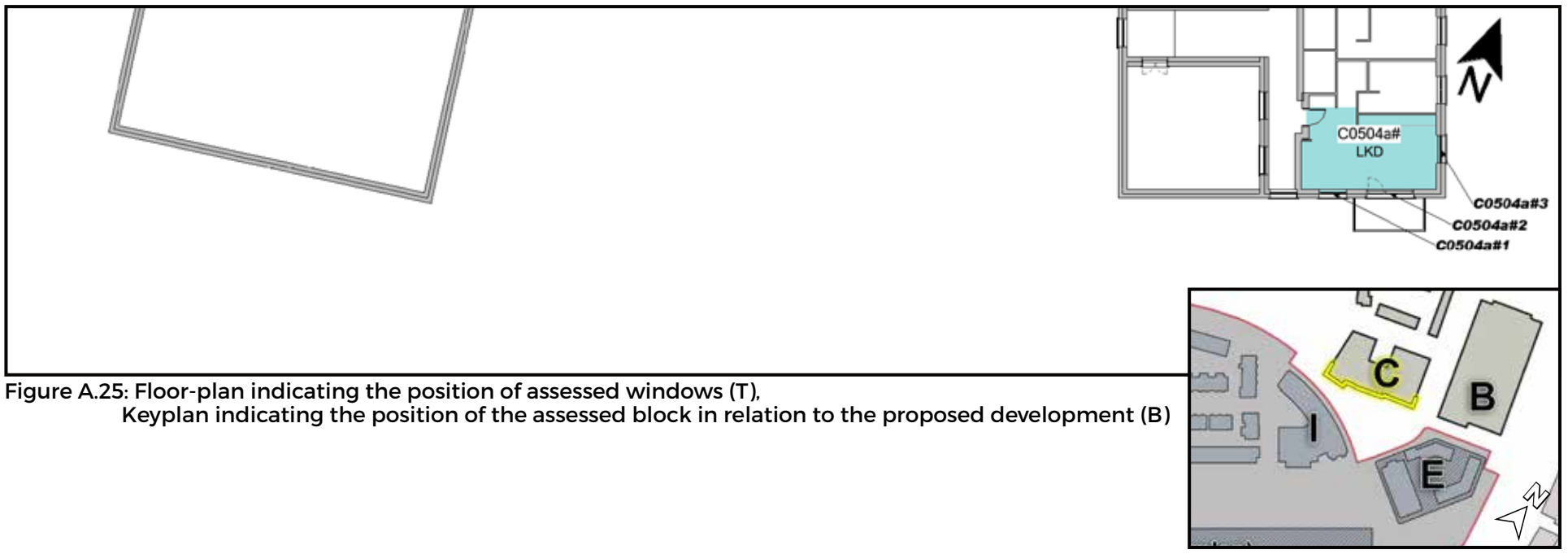


Figure A.25: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.2.13 Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor

Table No. A.2.13 - NSL Results: Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor

| Room Number | Baseline NSL Value | Proposed NSL Value | Ratio of Proposed NSL to Baseline NSL | Recommended minimum NSL* | Level of Compliance with BRE Guidelines | Effect of Proposed Development** |
|---|---|---|---|---|---|---|
| Bla | 99.95% | 99.94% | 1.00 | 79.96% | BRE Compliant | Negligible |
| BLb# | 100.00% | 93.15% | 0.93 | 80.00% | BRE Compliant | Negligible |
| BLc | 99.12% | 99.09% | 1.00 | 79.29% | BRE Compliant | Negligible |
| BLd | 98.67% | 81.18% | 0.82 | 78.94% | BRE Compliant | Negligible |
| BLe# | 99.87% | 99.87% | 1.00 | 79.89% | BRE Compliant | Negligible |
| BLf | 99.25% | 99.25% | 1.00 | 79.40% | BRE Compliant | Negligible |
| BLg# | 100.00% | 100.00% | 1.00 | 80.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that if the NSL value of a room drops below the stated target value of 80% **and** is less than 0.8 times the baseline value then loss of daylight is likely to be noticeable.

** For the interpretation of level of effects please refer to"3.2 Definition of Effects" on page 11.

Figure A.26: Floor-plan indicating the position of assessed windows, Ground Floor (T) & 1st Floor (B)
Keyplan indicating the position of the assessed block in relation to the proposed development (R)

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## A.3 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

Below is an example of the table used to describe the effect to the APSH/WPSH of existing windows / rooms.

| Table Example. A.3 - APSH/WPSH Impact Assessment | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH/WPSH | Proposed APSH/WPSH | Ratio of Proposed to Baseline APSH/ WPSH | Recommended Minimum APSH/WPSH | Level of Compliance with BRE Guidelines | Effect of Proposed Development |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** |

**A: Window / Room Number**

The number in this column will identify the assessed window / room. All windows / rooms are represented visually in the corresponding figure.

**B: Baseline APSH/WPSH**

The *Baseline APSH/WPSH Value* represents the percentage of the probable sunlight hours that the assessed window / room can receive, calculated in the baseline model state (as explained in the "Building the Model States" on page 15). The annual and winter assessments will be represented in separate tables.

**C: Proposed APSH/WPSH**

The *Proposed APSH/WPSH Value* represents the percentage of probable sunlight hours that the assessed window / room can receive, calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

**D: Ratio of Proposed to Baseline APSH/WPSH**

This column expresses the ratio of change between the baseline APSH/WPSH value and the proposed APSH/WPSH value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction to sunlight is more likely to be perceptible.

**E: Recommended Minimum APSH/WPSH**

The *BRE Target Value* for each window / room has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the sunlight received by an existing window / room, if the APSH value drops below the annual (25%) or WPSH value below the winter (5%) guidelines; **and** the APSH/WPSH value is less than 0.8 times the baseline value; **and** there is a reduction of more than 4% to the APSH.

Therefore, to determine the *recommended minimum APSH Value* for the annual study, 80% of the *Baseline APSH value* has been calculated. If this value is above the 25% threshold, a target value of 25% will be applied. If 80% of the baseline value is below 25%, then 80% of the baseline value is the appropriate target value.

To determine the *recommended minimum WPSH Value* for the winter study, 80% of the *Baseline winter APSH value* has been calculated. If this value is above the 5% threshold, a target value of 5% will be applied. If 80% of the baseline value is below 5%, then 80% of the baseline value is the appropriate target value.

**F: Level of Compliance with BRE Guidelines**

This column states the compliance of the *Proposed APSH/WPSH Value* with the *recommended minimum APSH/WPSH* as per the BRE Guidelines. In essence, it shows whether or not the assessed window / room would experience a perceptible level of impact. If the window / room complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the window / room does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

**G: Effect of Proposed Development**

The levels of effect in this column describe the effect an assessed window /room will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section *"Definition of Effects"* on page 12.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## A.3.1 Permitted Block B (Phase 1) - 1st Floor - Annual Probable Sunlight Hours

Table No. A.3.1 - APSH Results: Permitted Block B (Phase 1) - 1st Floor

| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0101a | 58.72% | 47.66% | 0.81 | 25.00% | BRE Compliant | Negligible |
| B2_0101b# | 60.42% | 49.54% | 0.82 | 25.00% | BRE Compliant | Negligible |
| B2_0102a | 15.68% | 6.76% | 0.43 | 11.68% | 58% | Moderate Adverse |
| B2_0102b | 27.63% | 17.64% | 0.64 | 22.11% | 80% | Minor Adverse |
| B2_0103a | 14.07% | 5.57% | 0.40 | 10.07% | 55% | Moderate Adverse |
| B2_0103b | 18.91% | 7.57% | 0.40 | 14.91% | 51% | Moderate Adverse |
| B2_0104a | 37.97% | 31.05% | 0.82 | 25.00% | BRE Compliant | Negligible |
| B2_0105a# | 49.73% | 34.59% | 0.70 | 25.00% | BRE Compliant | Negligible |
| B2_0106a | 24.56% | 7.11% | 0.29 | 19.65% | 36% | Major Adverse |
| B2_0106b | 49.85% | 32.09% | 0.64 | 25.00% | BRE Compliant | Negligible |
| B2_0106c | 53.77% | 33.70% | 0.63 | 25.00% | BRE Compliant | Negligible |
| B2_0107a# | 63.07% | 39.82% | 0.63 | 25.00% | BRE Compliant | Negligible |
| B2_0107b | 55.27% | 32.59% | 0.59 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

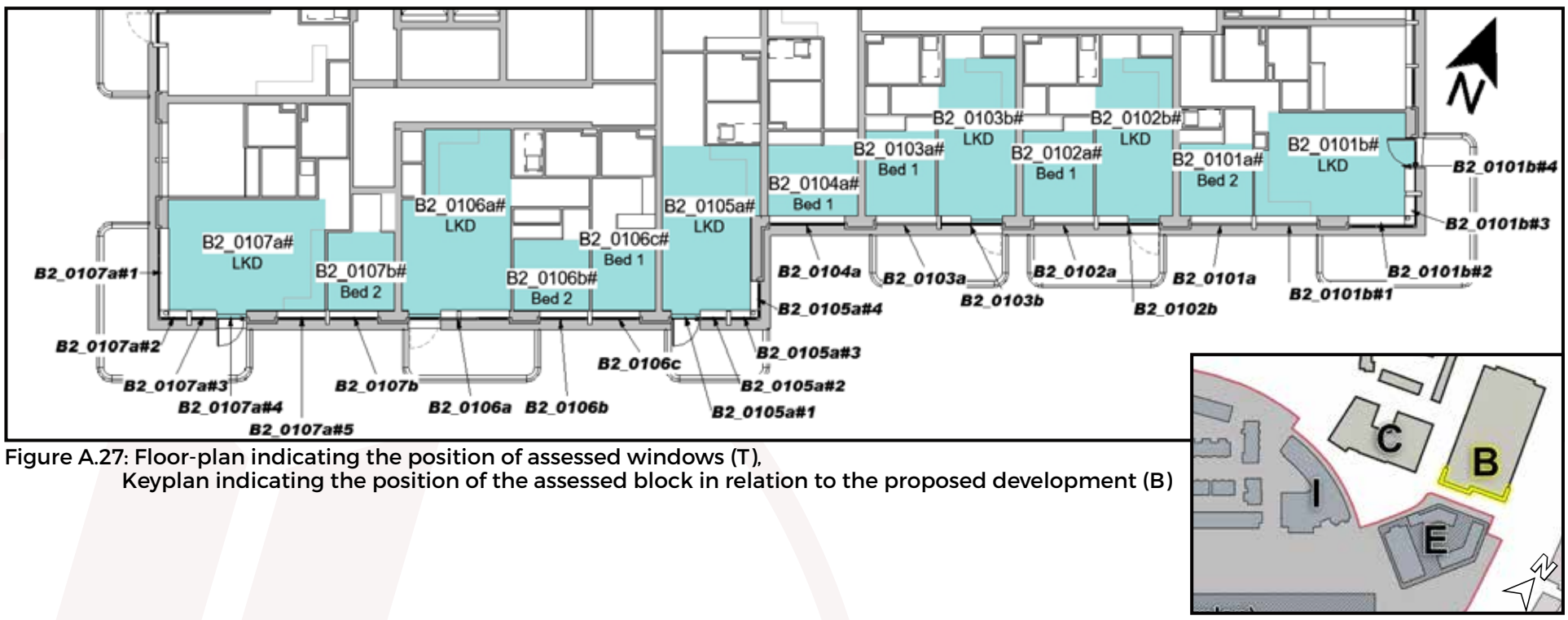


Figure A.27: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.2 Permitted Block B (Phase 1) - 1st Floor - Winter Probable Sunlight Hours

Table No. A.3.2 - WPSH Results: Permitted Block B (Phase 1) - 1st Floor

| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0101a | 26.44% | 15.37% | 0.58 | 5.00% | BRE Compliant | Negligible |
| B2_0101b# | 30.59% | 19.72% | 0.64 | 5.00% | BRE Compliant | Negligible |
| B2_0102a | 15.03% | 6.11% | 0.41 | 5.00% | BRE Compliant | Negligible |
| B2_0102b | 19.68% | 9.68% | 0.49 | 5.00% | BRE Compliant | Negligible |
| B2_0103a | 13.41% | 4.92% | 0.37 | 5.00% | 98% | Minor Adverse |
| B2_0103b | 17.76% | 6.42% | 0.36 | 5.00% | BRE Compliant | Negligible |
| B2_0104a | 15.83% | 8.92% | 0.56 | 5.00% | BRE Compliant | Negligible |
| B2_0105a# | 26.98% | 11.84% | 0.44 | 5.00% | BRE Compliant | Negligible |
| B2_0106a | 22.44% | 5.11% | 0.23 | 5.00% | BRE Compliant | Negligible |
| B2_0106b | 22.33% | 4.69% | 0.21 | 5.00% | 94% | Minor Adverse |
| B2_0106c | 27.79% | 7.88% | 0.28 | 5.00% | BRE Compliant | Negligible |
| B2_0107a# | 28.67% | 6.46% | 0.23 | 5.00% | BRE Compliant | Negligible |
| B2_0107b | 29.40% | 7.42% | 0.25 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

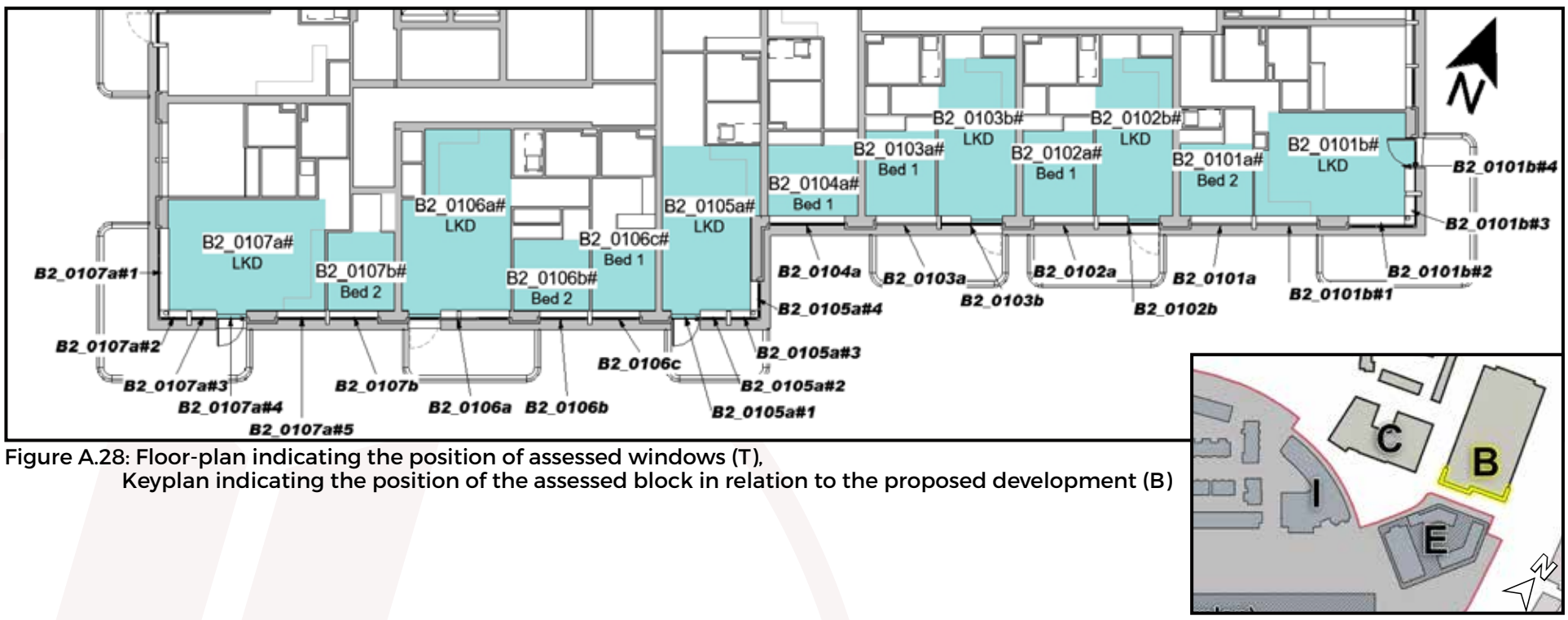


Figure A.28: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.3 Permitted Block B (Phase 1) - 2nd Floor - Annual Probable Sunlight Hours

Table No. A.3.3 - APSH Results: Permitted Block B (Phase 1) - 2nd Floor

| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0201a | 58.72% | 50.61% | 0.86 | 25.00% | BRE Compliant | Negligible |
| B2_0201b# | 60.42% | 52.27% | 0.87 | 25.00% | BRE Compliant | Negligible |
| B2_0202a | 15.68% | 9.19% | 0.59 | 11.68% | 79% | Moderate Adverse |
| B2_0202b | 27.63% | 20.95% | 0.76 | 22.11% | 95% | Minor Adverse |
| B2_0203a | 14.14% | 6.80% | 0.48 | 10.14% | 67% | Moderate Adverse |
| B2_0203b | 18.91% | 10.34% | 0.55 | 14.91% | 69% | Moderate Adverse |
| B2_0204a | 38.47% | 32.97% | 0.86 | 25.00% | BRE Compliant | Negligible |
| B2_0205a# | 50.12% | 37.51% | 0.75 | 25.00% | BRE Compliant | Negligible |
| B2_0206a | 24.94% | 9.45% | 0.38 | 19.95% | 47% | Major Adverse |
| B2_0206b | 50.92% | 36.13% | 0.71 | 25.00% | BRE Compliant | Negligible |
| B2_0206c | 54.19% | 38.59% | 0.71 | 25.00% | BRE Compliant | Negligible |
| B2_0207a# | 64.30% | 44.50% | 0.69 | 25.00% | BRE Compliant | Negligible |
| B2_0207b | 55.69% | 36.01% | 0.65 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

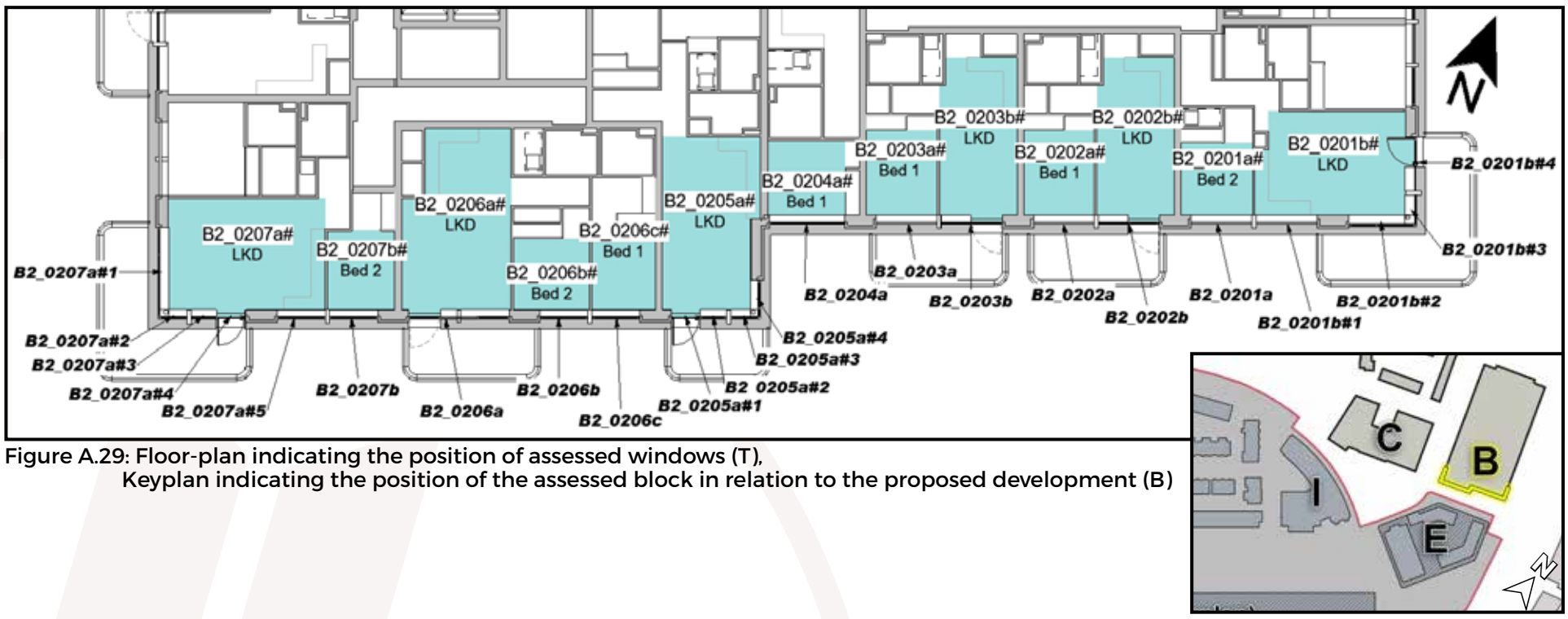


Figure A.29: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.4 Permitted Block B (Phase 1) - 2nd Floor - Winter Probable Sunlight Hours

Table No. A.3.4 - WPSH Results: Permitted Block B (Phase 1) - 2nd Floor

| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0201a | 26.44% | 18.33% | 0.69 | 5.00% | BRE Compliant | Negligible |
| B2_0201b# | 30.59% | 22.44% | 0.73 | 5.00% | BRE Compliant | Negligible |
| B2_0202a | 15.03% | 8.53% | 0.57 | 5.00% | BRE Compliant | Negligible |
| B2_0202b | 19.68% | 12.99% | 0.66 | 5.00% | BRE Compliant | Negligible |
| B2_0203a | 13.49% | 6.15% | 0.46 | 5.00% | BRE Compliant | Negligible |
| B2_0203b | 17.76% | 9.19% | 0.52 | 5.00% | BRE Compliant | Negligible |
| B2_0204a | 16.26% | 10.76% | 0.66 | 5.00% | BRE Compliant | Negligible |
| B2_0205a# | 27.06% | 14.45% | 0.53 | 5.00% | BRE Compliant | Negligible |
| B2_0206a | 22.71% | 7.23% | 0.32 | 5.00% | BRE Compliant | Negligible |
| B2_0206b | 22.33% | 7.53% | 0.34 | 5.00% | BRE Compliant | Negligible |
| B2_0206c | 27.79% | 12.26% | 0.44 | 5.00% | BRE Compliant | Negligible |
| B2_0207a# | 28.63% | 9.30% | 0.32 | 5.00% | BRE Compliant | Negligible |
| B2_0207b | 29.40% | 10.03% | 0.34 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

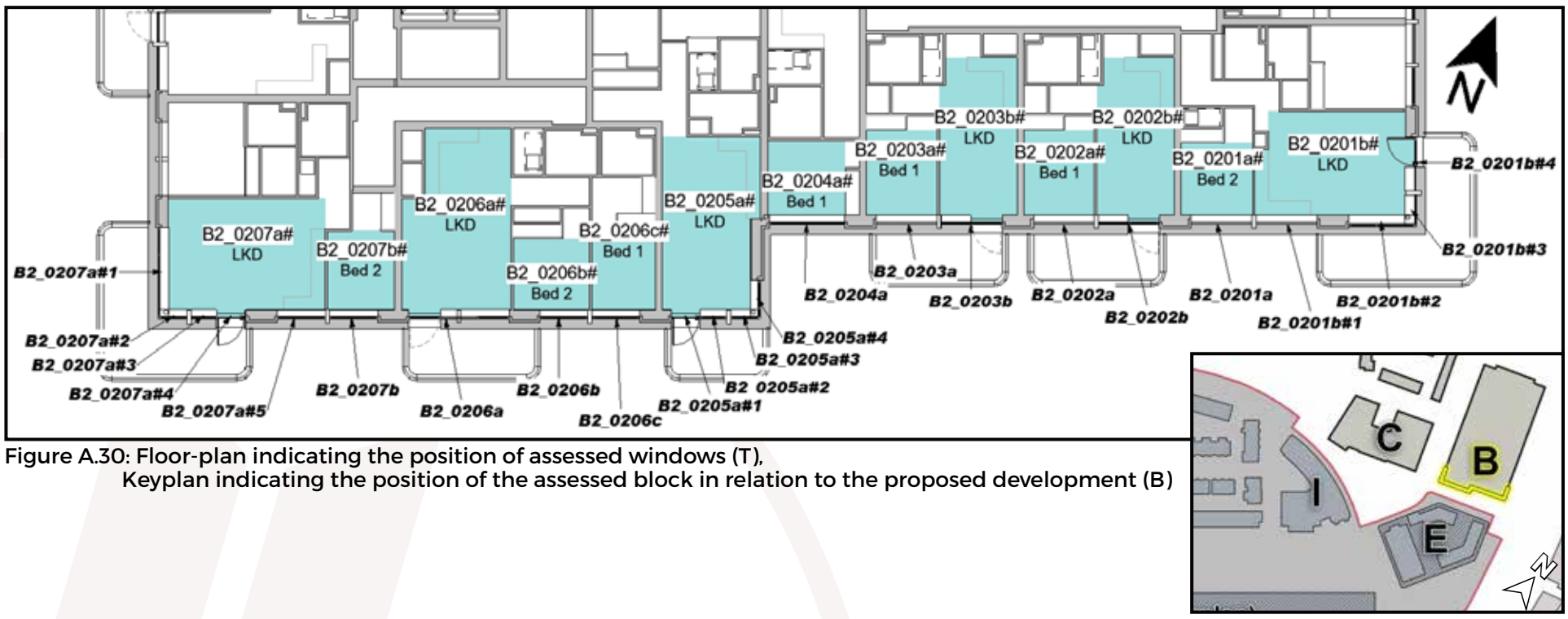


Figure A.30: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.5 Permitted Block B (Phase 1) - 3rd Floor - Annual Probable Sunlight Hours

Table No. A.3.5 - APSH Results: Permitted Block B (Phase 1) - 3rd Floor

| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0301a | 58.72% | 52.61% | 0.90 | 25.00% | BRE Compliant | Negligible |
| B2_0301b# | 60.42% | 53.84% | 0.89 | 25.00% | BRE Compliant | Negligible |
| B2_0302a | 15.68% | 11.61% | 0.74 | 11.68% | >99% | Negligible |
| B2_0302b | 27.71% | 23.10% | 0.83 | 22.17% | BRE Compliant | Negligible |
| B2_0303a | 15.91% | 10.22% | 0.64 | 11.91% | 86% | Minor Adverse |
| B2_0303b | 20.64% | 14.26% | 0.69 | 16.51% | 86% | Minor Adverse |
| B2_0304a | 39.12% | 34.67% | 0.89 | 25.00% | BRE Compliant | Negligible |
| B2_0305a# | 75.06% | 63.57% | 0.85 | 25.00% | BRE Compliant | Negligible |
| B2_0306a | 75.52% | 60.95% | 0.81 | 25.00% | BRE Compliant | Negligible |
| B2_0306b | 71.52% | 58.19% | 0.81 | 25.00% | BRE Compliant | Negligible |
| B2_0306c | 71.06% | 59.26% | 0.83 | 25.00% | BRE Compliant | Negligible |
| B2_0307a# | 88.59% | 74.33% | 0.84 | 25.00% | BRE Compliant | Negligible |
| B2_0307b | 71.06% | 55.30% | 0.78 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

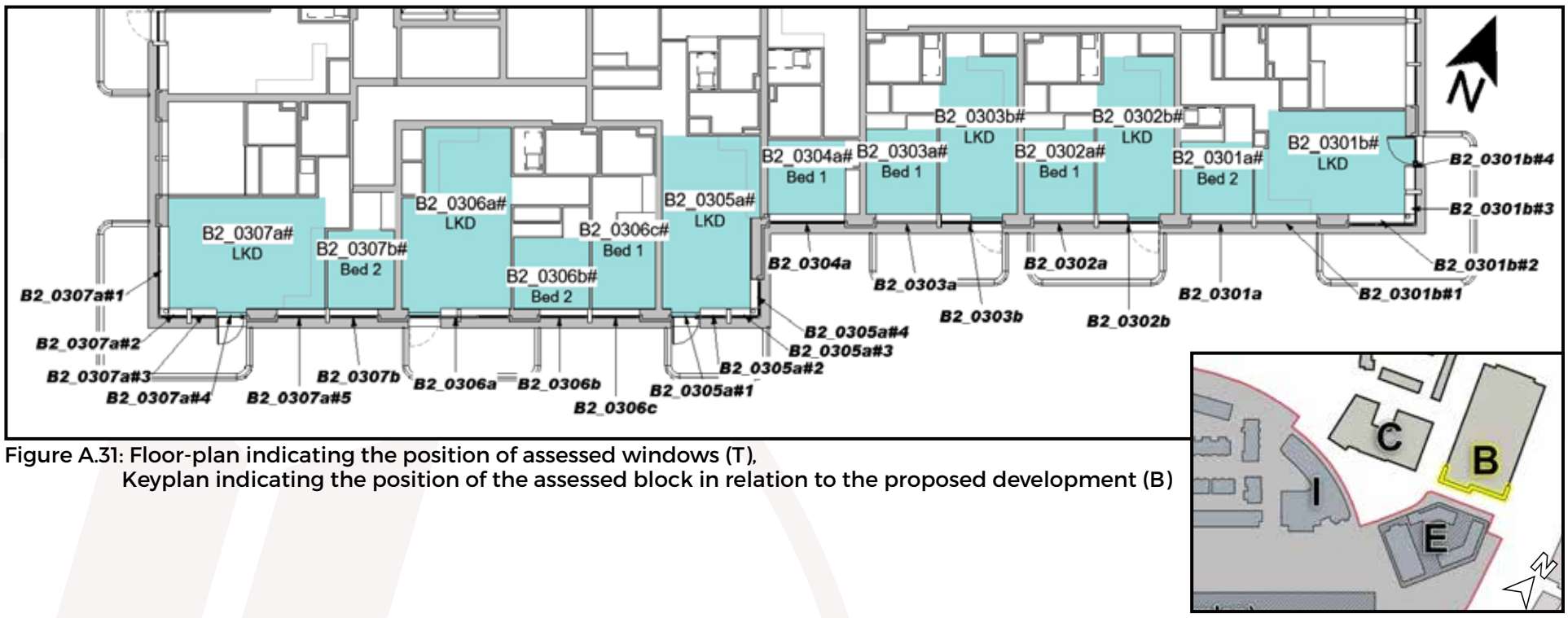


Figure A.31: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.6 Permitted Block B (Phase 1) - 3rd Floor - Winter Probable Sunlight Hours

Table No. A.3.6 - WPSH Results: Permitted Block B (Phase 1) - 3rd Floor

| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0301a | 26.44% | 20.33% | 0.77 | 5.00% | BRE Compliant | Negligible |
| B2_0301b# | 30.59% | 24.02% | 0.79 | 5.00% | BRE Compliant | Negligible |
| B2_0302a | 15.03% | 10.95% | 0.73 | 5.00% | BRE Compliant | Negligible |
| B2_0302b | 19.75% | 15.14% | 0.77 | 5.00% | BRE Compliant | Negligible |
| B2_0303a | 15.26% | 9.57% | 0.63 | 5.00% | BRE Compliant | Negligible |
| B2_0303b | 19.49% | 13.11% | 0.67 | 5.00% | BRE Compliant | Negligible |
| B2_0304a | 17.79% | 13.34% | 0.75 | 5.00% | BRE Compliant | Negligible |
| B2_0305a# | 32.09% | 20.60% | 0.64 | 5.00% | BRE Compliant | Negligible |
| B2_0306a | 32.32% | 17.76% | 0.55 | 5.00% | BRE Compliant | Negligible |
| B2_0306b | 32.17% | 18.83% | 0.59 | 5.00% | BRE Compliant | Negligible |
| B2_0306c | 32.17% | 20.37% | 0.63 | 5.00% | BRE Compliant | Negligible |
| B2_0307a# | 32.48% | 18.26% | 0.56 | 5.00% | BRE Compliant | Negligible |
| B2_0307b | 32.17% | 16.49% | 0.51 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

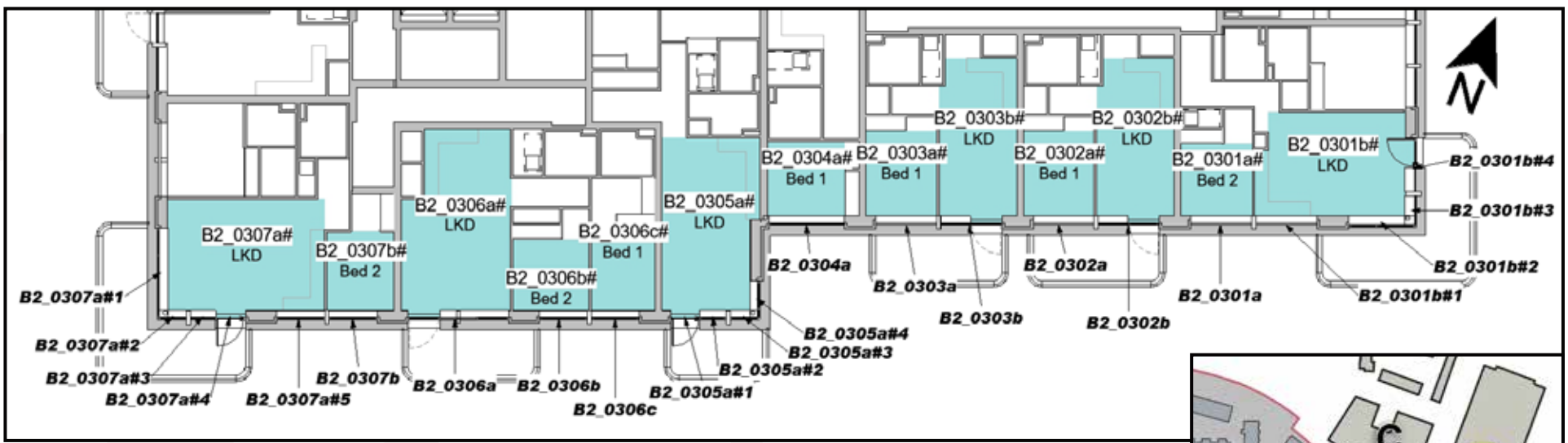


Figure A.32: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.7 Permitted Block B (Phase 1) - 4th Floor - Annual Probable Sunlight Hours

Table No. A.3.7 - APSH Results: Permitted Block B (Phase 1) - 4th Floor

| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0401a | 58.72% | 52.96% | 0.90 | 25.00% | BRE Compliant | Negligible |
| B2_0401b# | 60.42% | 54.27% | 0.90 | 25.00% | BRE Compliant | Negligible |
| B2_0402a | 19.95% | 15.64% | 0.78 | 15.95% | 98% | Minor Adverse |
| B2_0402b | 28.29% | 23.79% | 0.84 | 22.63% | BRE Compliant | Negligible |
| B2_0403a | 58.07% | 50.81% | 0.87 | 25.00% | BRE Compliant | Negligible |
| B2_0403b | 60.72% | 52.81% | 0.87 | 25.00% | BRE Compliant | Negligible |
| B2_0404a | 16.33% | 12.91% | 0.79 | 12.33% | BRE Compliant | Negligible |
| B2_0405a | 71.52% | 60.88% | 0.85 | 25.00% | BRE Compliant | Negligible |
| B2_0405b# | 73.79% | 64.68% | 0.88 | 25.00% | BRE Compliant | Negligible |
| B2_0406a# | 93.81% | 84.63% | 0.90 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

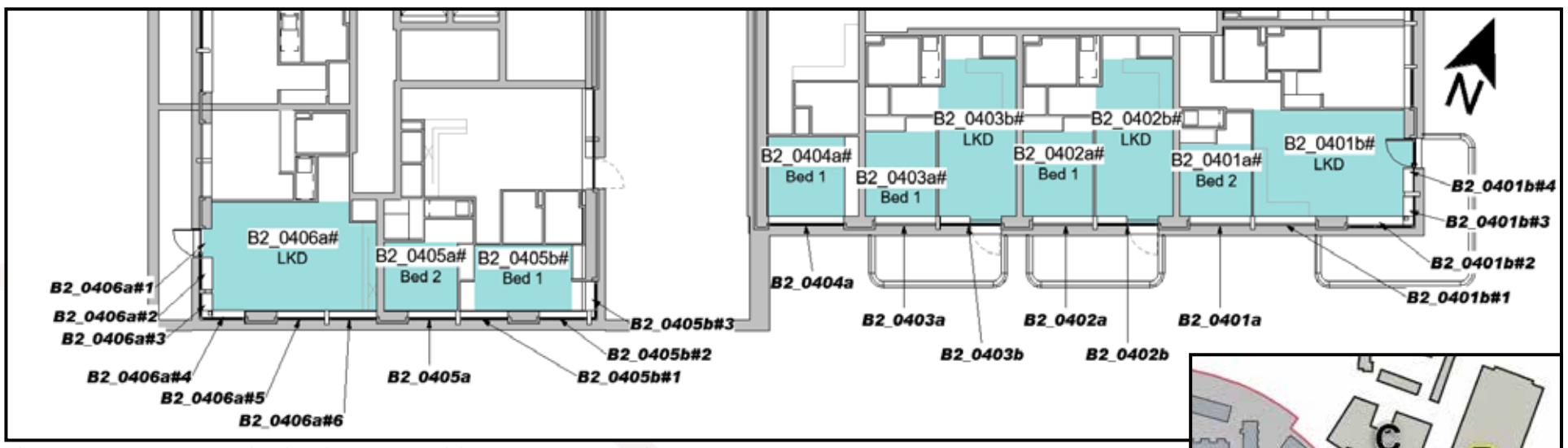


Figure A.33: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.8 Permitted Block B (Phase 1) - 4th Floor - Winter Probable Sunlight Hours

Table No. A.3.8 - WPSH Results: Permitted Block B (Phase 1) - 4th Floor

| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| B2_0401a | 26.44% | 20.68% | 0.78 | 5.00% | BRE Compliant | Negligible |
| B2_0401b# | 30.59% | 24.44% | 0.80 | 5.00% | BRE Compliant | Negligible |
| B2_0402a | 19.29% | 14.99% | 0.78 | 5.00% | BRE Compliant | Negligible |
| B2_0402b | 20.33% | 15.83% | 0.78 | 5.00% | BRE Compliant | Negligible |
| B2_0403a | 25.79% | 18.52% | 0.72 | 5.00% | BRE Compliant | Negligible |
| B2_0403b | 29.94% | 22.02% | 0.74 | 5.00% | BRE Compliant | Negligible |
| B2_0404a | 12.95% | 9.53% | 0.74 | 5.00% | BRE Compliant | Negligible |
| B2_0405a | 32.17% | 21.52% | 0.67 | 5.00% | BRE Compliant | Negligible |
| B2_0405b# | 32.17% | 23.06% | 0.72 | 5.00% | BRE Compliant | Negligible |
| B2_0406a# | 32.63% | 23.44% | 0.72 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

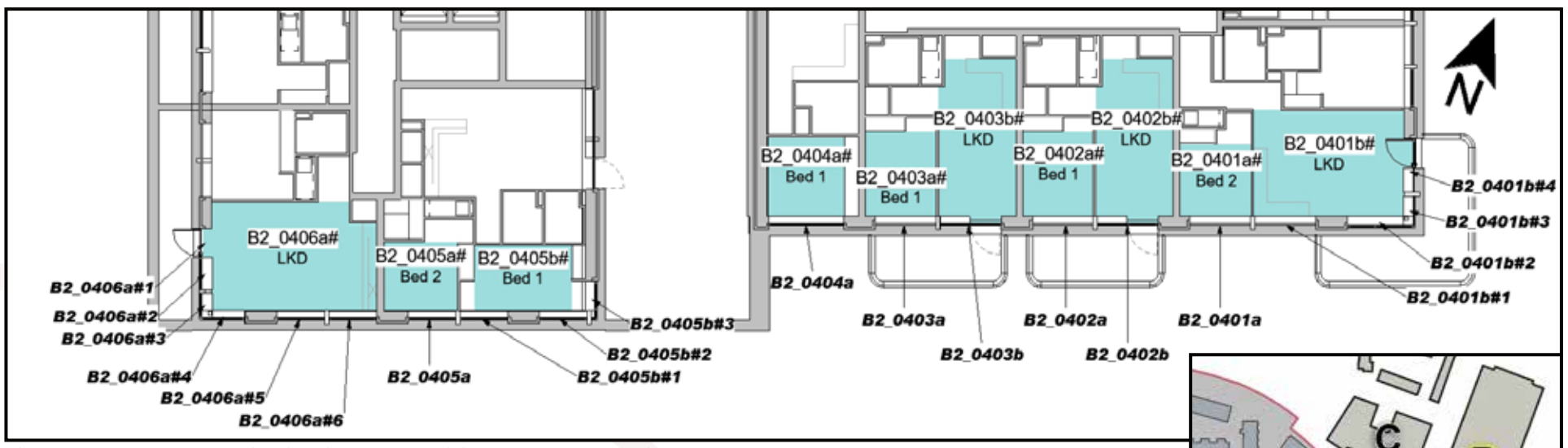


Figure A.34: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.9 Permitted Block B (Phase 1) - 5th Floor - Annual Probable Sunlight Hours

| Table No. A.3.10 - APSH Results: Permitted Block B (Phase 1) - 5th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0501a | 59.49% | 54.15% | 0.91 | 25.00% | BRE Compliant | Negligible |
| B2_0501b# | 60.91% | 55.15% | 0.91 | 25.00% | BRE Compliant | Negligible |
| B2_0502a | 20.18% | 16.10% | 0.80 | 16.14% | >99% | Negligible |
| B2_0502b | 29.48% | 25.13% | 0.85 | 23.58% | BRE Compliant | Negligible |
| B2_0503a# | 72.71% | 66.87% | 0.92 | 25.00% | BRE Compliant | Negligible |
| B2_0503b | 62.80% | 55.53% | 0.88 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

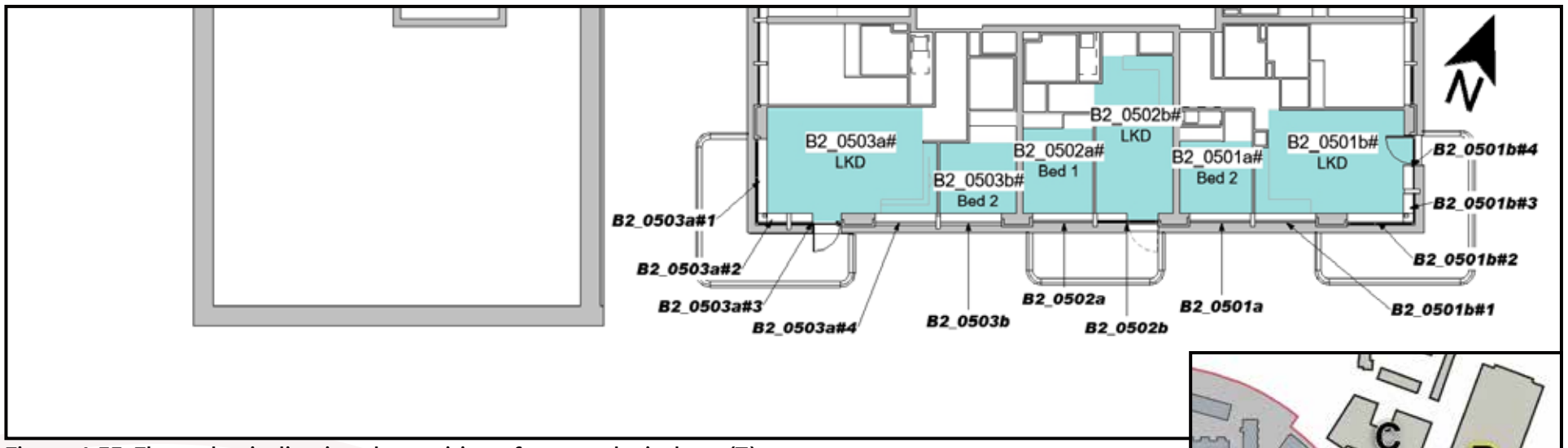


Figure A.35: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.10 Permitted Block B (Phase 1) - 5th Floor - Winter Probable Sunlight Hours

| Table No. A.3.10 - WPSH Results: Permitted Block B (Phase 1) - 5th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0501a | 26.44% | 21.10% | 0.80 | 5.00% | BRE Compliant | Negligible |
| B2_0501b# | 30.67% | 24.90% | 0.81 | 5.00% | BRE Compliant | Negligible |
| B2_0502a | 19.52% | 15.45% | 0.79 | 5.00% | BRE Compliant | Negligible |
| B2_0502b | 20.33% | 15.99% | 0.79 | 5.00% | BRE Compliant | Negligible |
| B2_0503a# | 29.29% | 23.44% | 0.80 | 5.00% | BRE Compliant | Negligible |
| B2_0503b | 30.13% | 22.87% | 0.76 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.11 Permitted Block B (Phase 1) - 6th Floor - Annual Probable Sunlight Hours

| Table No. A.3.12 - APSH Results: Permitted Block B (Phase 1) - 6th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0601a | 71.52% | 66.56% | 0.93 | 25.00% | BRE Compliant | Negligible |
| B2_0601b# | 77.52% | 72.67% | 0.94 | 25.00% | BRE Compliant | Negligible |
| B2_0602a | 71.52% | 65.99% | 0.92 | 25.00% | BRE Compliant | Negligible |
| B2_0602b | 74.71% | 69.83% | 0.93 | 25.00% | BRE Compliant | Negligible |
| B2_0603a# | 96.89% | 92.08% | 0.95 | 25.00% | BRE Compliant | Negligible |
| B2_0603b | 71.33% | 64.99% | 0.91 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

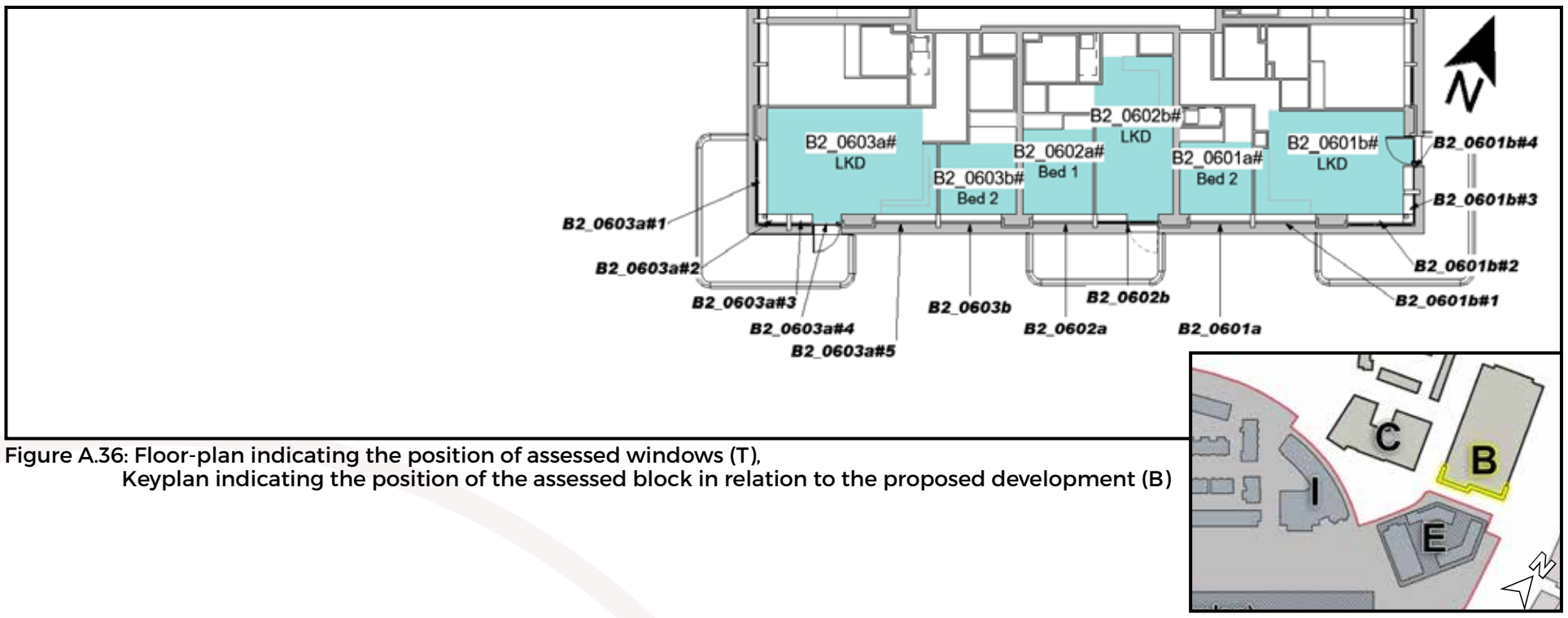


Figure A.36: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.12 Permitted Block B (Phase 1) - 6th Floor - Winter Probable Sunlight Hours

| Table No. A.3.12 - WPSH Results: Permitted Block B (Phase 1) - 6th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0601a | 32.17% | 27.21% | 0.85 | 5.00% | BRE Compliant | Negligible |
| B2_0601b# | 32.32% | 27.48% | 0.85 | 5.00% | BRE Compliant | Negligible |
| B2_0602a | 32.17% | 26.63% | 0.83 | 5.00% | BRE Compliant | Negligible |
| B2_0602b | 32.32% | 27.44% | 0.85 | 5.00% | BRE Compliant | Negligible |
| B2_0603a# | 32.97% | 28.17% | 0.85 | 5.00% | BRE Compliant | Negligible |
| B2_0603b | 32.17% | 25.83% | 0.80 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.13 Permitted Block B (Phase 1) - 7th Floor - Annual Probable Sunlight Hours

| Table No. A.3.14 - APSH Results: Permitted Block B (Phase 1) - 7th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0701b | 27.82% | 23.90% | 0.86 | 22.26% | BRE Compliant | Negligible |
| B2_0702a | 27.63% | 23.64% | 0.86 | 22.11% | BRE Compliant | Negligible |
| B2_0702a# | 47.00% | 42.81% | 0.91 | 25.00% | BRE Compliant | Negligible |
| B2_0702b | 25.63% | 21.71% | 0.85 | 20.51% | BRE Compliant | Negligible |
| B2_0702c | 27.63% | 23.41% | 0.85 | 22.11% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

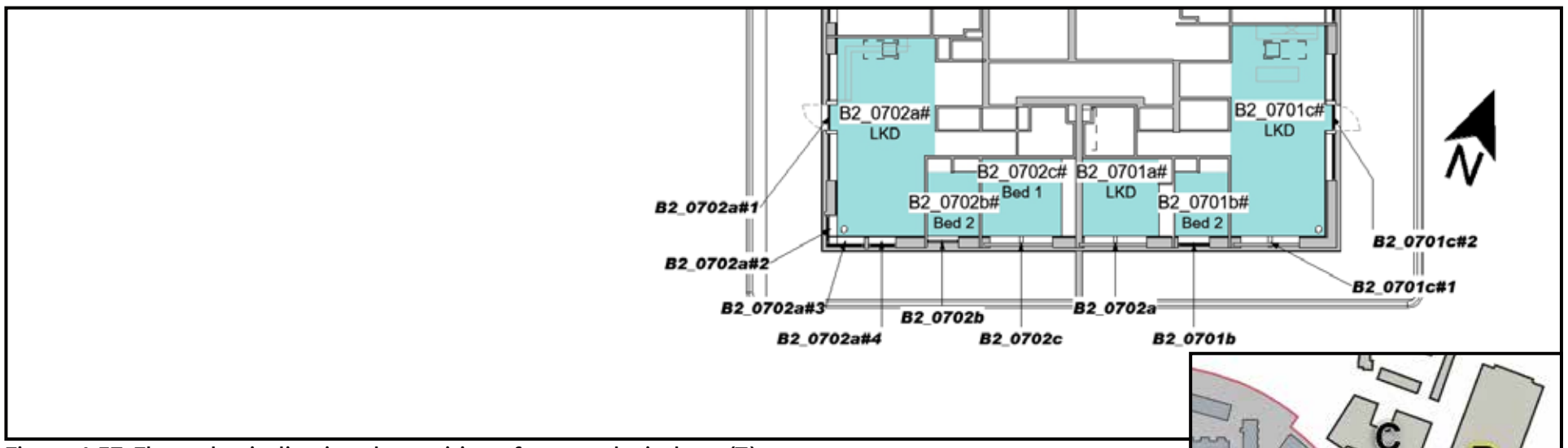


Figure A.37: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.14 Permitted Block B (Phase 1) - 7th Floor - Winter Probable Sunlight Hours

| Table No. A.3.14 - WPSH Results: Permitted Block B (Phase 1) - 7th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| B2_0701b | 25.17% | 21.25% | 0.84 | 5.00% | BRE Compliant | Negligible |
| B2_0702a | 25.17% | 21.18% | 0.84 | 5.00% | BRE Compliant | Negligible |
| B2_0702a# | 29.86% | 25.67% | 0.86 | 5.00% | BRE Compliant | Negligible |
| B2_0702b | 24.02% | 20.10% | 0.84 | 5.00% | BRE Compliant | Negligible |
| B2_0702c | 25.17% | 20.95% | 0.83 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.15 Permitted Block C (Phase 1) - 1st Floor - Annual Probable Sunlight Hours

| Table No. A.3.16 - APSH Results: Permitted Block C (Phase 1) - 1st Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C Dup1a# | 73.33% | 48.16% | 0.66 | 25.00% | BRE Compliant | Negligible |
| C Dup2a# | 73.33% | 49.69% | 0.68 | 25.00% | BRE Compliant | Negligible |
| C Dup3a# | 73.33% | 52.23% | 0.71 | 25.00% | BRE Compliant | Negligible |
| C Dup4a# | 73.33% | 52.46% | 0.72 | 25.00% | BRE Compliant | Negligible |
| C0105a# | 77.13% | 58.84% | 0.76 | 25.00% | BRE Compliant | Negligible |
| C0109a# | 80.90% | 60.07% | 0.74 | 25.00% | BRE Compliant | Negligible |
| C0113a# | 81.32% | 49.19% | 0.60 | 25.00% | BRE Compliant | Negligible |
| C0114a# | 90.35% | 56.96% | 0.63 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

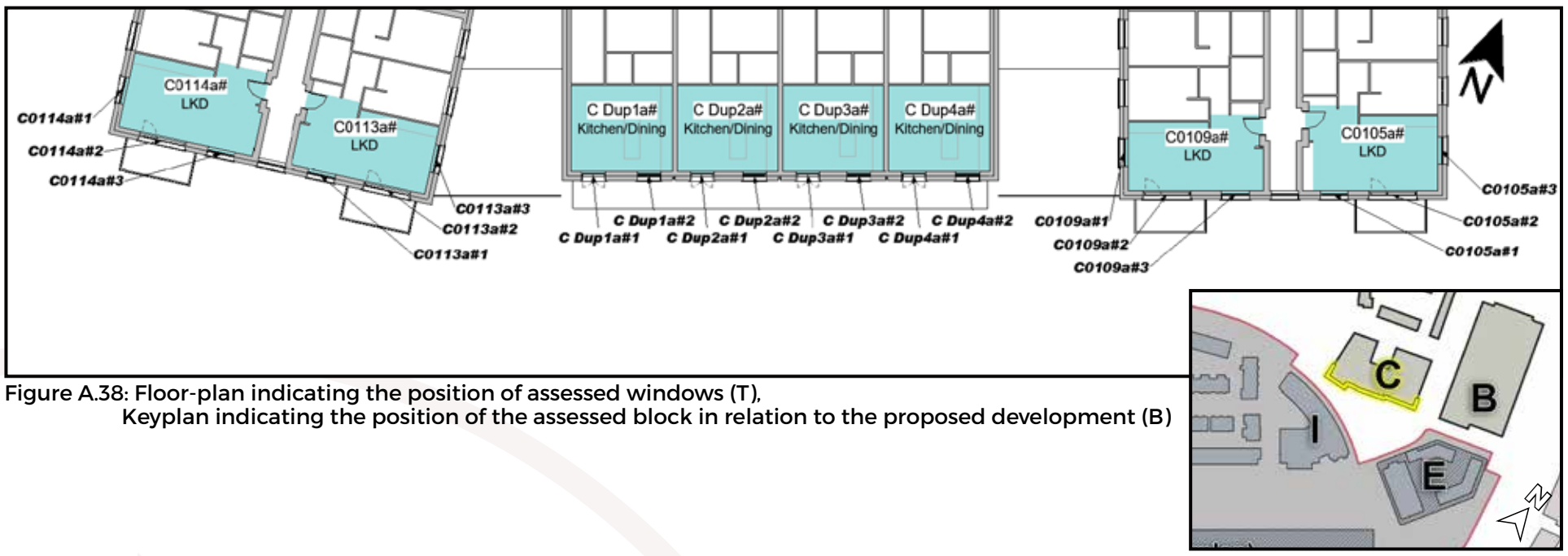


Figure A.38: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.16 Permitted Block C (Phase 1) - 1st Floor - Winter Probable Sunlight Hours

| Table No. A.3.16 - WPSH Results: Permitted Block C (Phase 1) - 1st Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C Dup1a# | 31.21% | 7.57% | 0.24 | 5.00% | BRE Compliant | Negligible |
| C Dup2a# | 31.21% | 9.34% | 0.30 | 5.00% | BRE Compliant | Negligible |
| C Dup3a# | 31.21% | 12.14% | 0.39 | 5.00% | BRE Compliant | Negligible |
| C Dup4a# | 31.21% | 11.99% | 0.38 | 5.00% | BRE Compliant | Negligible |
| C0105a# | 32.17% | 15.07% | 0.47 | 5.00% | BRE Compliant | Negligible |
| C0109a# | 32.32% | 13.87% | 0.43 | 5.00% | BRE Compliant | Negligible |
| C0113a# | 32.78% | 5.00% | 0.15 | 5.00% | BRE Compliant | Negligible |
| C0114a# | 32.97% | 4.84% | 0.15 | 5.00% | 97% | Minor Adverse |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.17 Permitted Block C (Phase 1) - 2nd Floor - Annual Probable Sunlight Hours

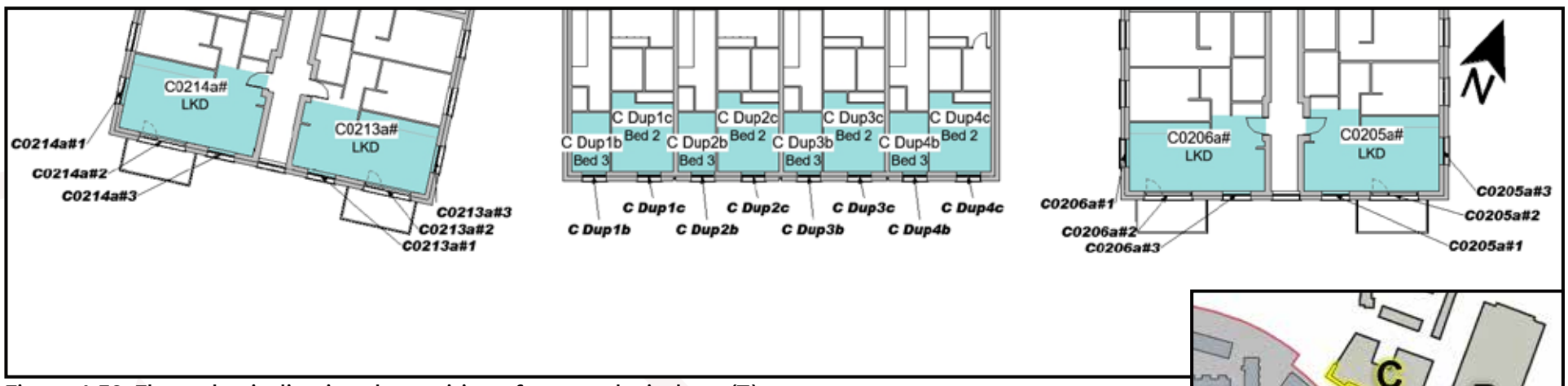
Table No. A.3.17 - APSH Results: Permitted Block C (Phase 1) - 2nd Floor

| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| C Dup1b | 73.33% | 48.85% | 0.67 | 25.00% | BRE Compliant | Negligible |
| C Dup1c | 73.33% | 50.46% | 0.69 | 25.00% | BRE Compliant | Negligible |
| C Dup2b | 73.33% | 50.96% | 0.69 | 25.00% | BRE Compliant | Negligible |
| C Dup2c | 73.33% | 51.61% | 0.70 | 25.00% | BRE Compliant | Negligible |
| C Dup3b | 73.33% | 52.77% | 0.72 | 25.00% | BRE Compliant | Negligible |
| C Dup3c | 73.33% | 53.50% | 0.73 | 25.00% | BRE Compliant | Negligible |
| C Dup4b | 73.33% | 54.00% | 0.74 | 25.00% | BRE Compliant | Negligible |
| C Dup4c | 73.10% | 53.73% | 0.74 | 25.00% | BRE Compliant | Negligible |
| C0205a# | 77.33% | 61.64% | 0.80 | 25.00% | BRE Compliant | Negligible |
| C0206a# | 89.97% | 72.44% | 0.81 | 25.00% | BRE Compliant | Negligible |
| C0213a# | 81.32% | 52.23% | 0.64 | 25.00% | BRE Compliant | Negligible |
| C0214a# | 90.35% | 60.15% | 0.67 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



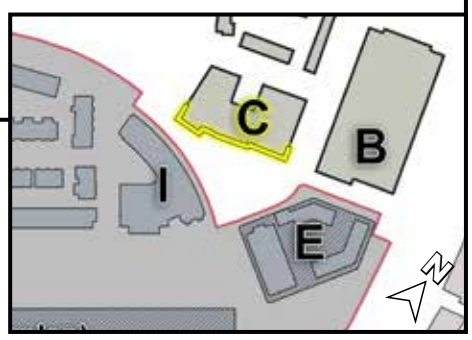




Figure A.39: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.18 Permitted Block C (Phase 1) - 2nd Floor - Winter Probable Sunlight Hours

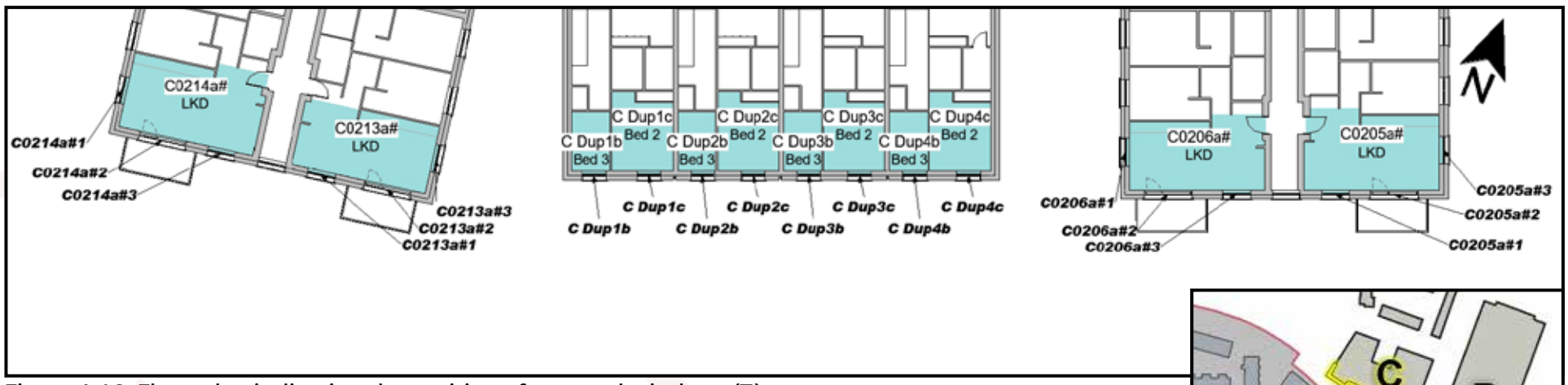
Table No. A.3.18 - WPSH Results: Permitted Block C (Phase 1) - 2nd Floor

| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
|---|---|---|---|---|---|---|
| C Dup1b | 31.21% | 8.30% | 0.27 | 5.00% | BRE Compliant | Negligible |
| C Dup1c | 31.21% | 9.84% | 0.32 | 5.00% | BRE Compliant | Negligible |
| C Dup2b | 31.21% | 10.22% | 0.33 | 5.00% | BRE Compliant | Negligible |
| C Dup2c | 31.21% | 10.91% | 0.35 | 5.00% | BRE Compliant | Negligible |
| C Dup3b | 31.21% | 12.18% | 0.39 | 5.00% | BRE Compliant | Negligible |
| C Dup3c | 31.21% | 13.07% | 0.42 | 5.00% | BRE Compliant | Negligible |
| C Dup4b | 31.21% | 13.26% | 0.42 | 5.00% | BRE Compliant | Negligible |
| C Dup4c | 31.21% | 13.18% | 0.42 | 5.00% | BRE Compliant | Negligible |
| C0205a# | 32.17% | 17.10% | 0.53 | 5.00% | BRE Compliant | Negligible |
| C0206a# | 32.32% | 16.41% | 0.51 | 5.00% | BRE Compliant | Negligible |
| C0213a# | 32.78% | 5.80% | 0.18 | 5.00% | BRE Compliant | Negligible |
| C0214a# | 32.97% | 5.30% | 0.16 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



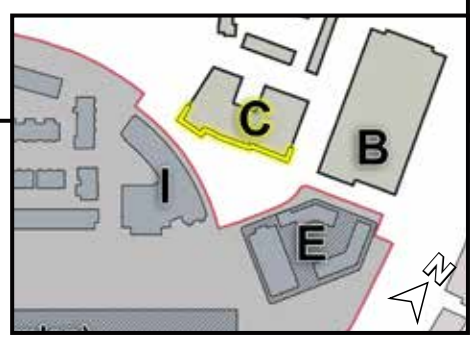




Figure A.40: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

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## A.3.19 Permitted Block C (Phase 1) - 3rd Floor - Annual Probable Sunlight Hours

| Table No. A.3.20 - APSH Results: Permitted Block C (Phase 1) - 3rd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0305a# | 79.09% | 65.99% | 0.83 | 25.00% | BRE Compliant | Negligible |
| C0306a# | 95.43% | 81.25% | 0.85 | 25.00% | BRE Compliant | Negligible |
| C0313a# | 84.82% | 59.57% | 0.70 | 25.00% | BRE Compliant | Negligible |
| C0314a# | 90.74% | 64.22% | 0.71 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

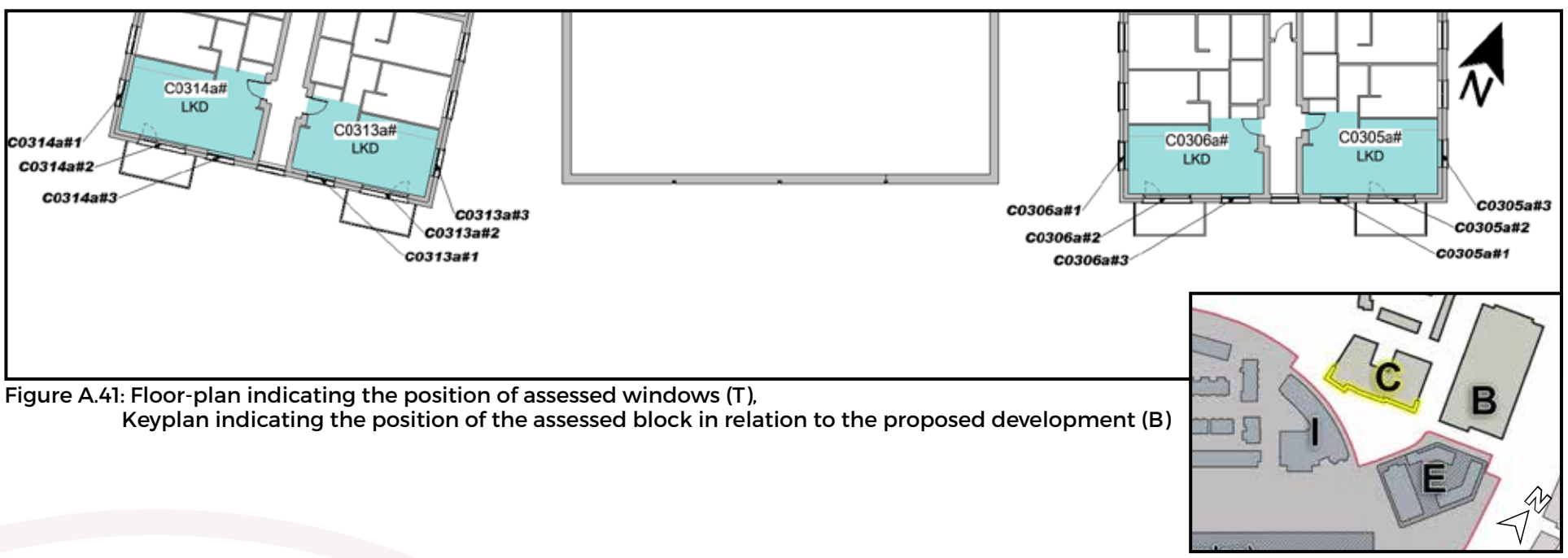


Figure A.41: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.20 Permitted Block C (Phase 1) - 3rd Floor - Winter Probable Sunlight Hours

| Table No. A.3.20 - WPSH Results: Permitted Block C (Phase 1) - 3rd Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0305a# | 32.24% | 19.29% | 0.60 | 5.00% | BRE Compliant | Negligible |
| C0306a# | 32.82% | 19.64% | 0.60 | 5.00% | BRE Compliant | Negligible |
| C0313a# | 32.78% | 8.57% | 0.26 | 5.00% | BRE Compliant | Negligible |
| C0314a# | 32.97% | 7.72% | 0.23 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.21 Permitted Block C (Phase 1) - 4th Floor - Annual Probable Sunlight Hours

| Table No. A.3.22 - APSH Results: Permitted Block C (Phase 1) - 4th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0405a# | 80.25% | 70.14% | 0.87 | 25.00% | BRE Compliant | Negligible |
| C0406a# | 95.81% | 85.24% | 0.89 | 25.00% | BRE Compliant | Negligible |
| C0412a# | 85.55% | 64.26% | 0.75 | 25.00% | BRE Compliant | Negligible |
| C0413a# | 92.51% | 69.79% | 0.75 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

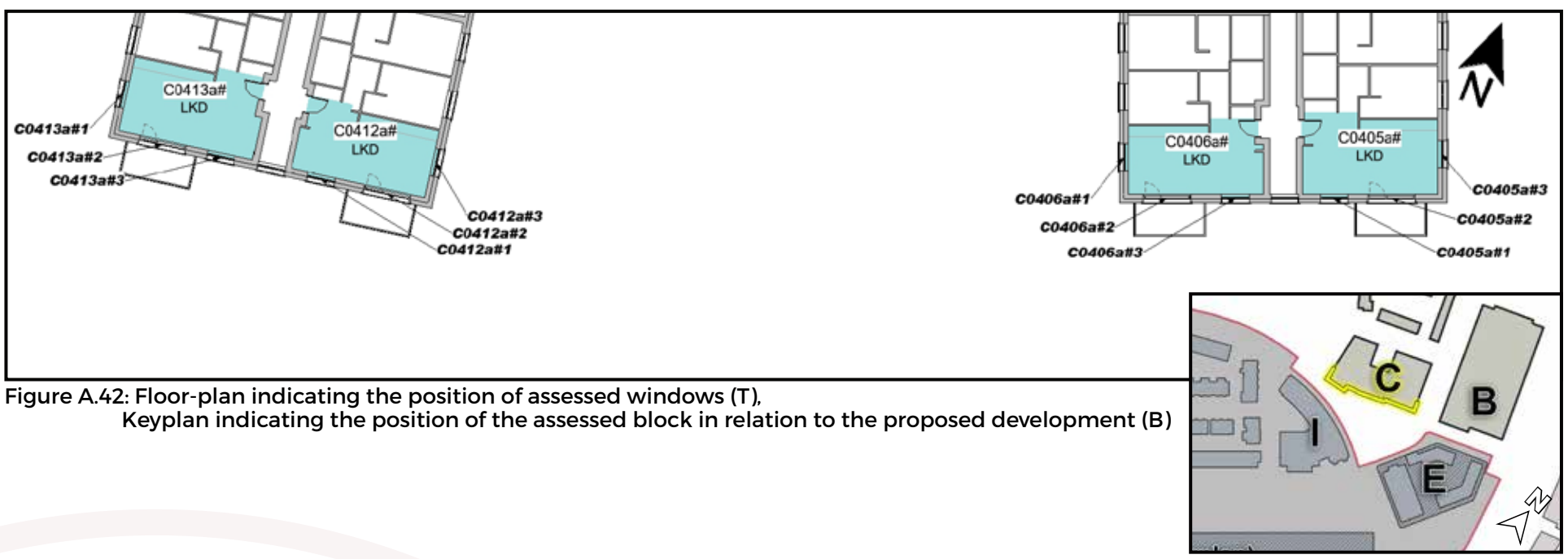


Figure A.42: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.22 Permitted Block C (Phase 1) - 4th Floor - Winter Probable Sunlight Hours

| Table No. A.3.22 - WPSH Results: Permitted Block C (Phase 1) - 4th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0405a# | 32.32% | 22.25% | 0.69 | 5.00% | BRE Compliant | Negligible |
| C0406a# | 32.97% | 22.75% | 0.69 | 5.00% | BRE Compliant | Negligible |
| C0412a# | 32.90% | 12.64% | 0.38 | 5.00% | BRE Compliant | Negligible |
| C0413a# | 32.97% | 11.22% | 0.34 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.23 Permitted Block C (Phase 1) - 5th Floor - Annual Probable Sunlight Hours

| Table No. A.3.24 - APSH Results: Permitted Block C (Phase 1) - 5th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0504a# | 80.25% | 72.14% | 0.90 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

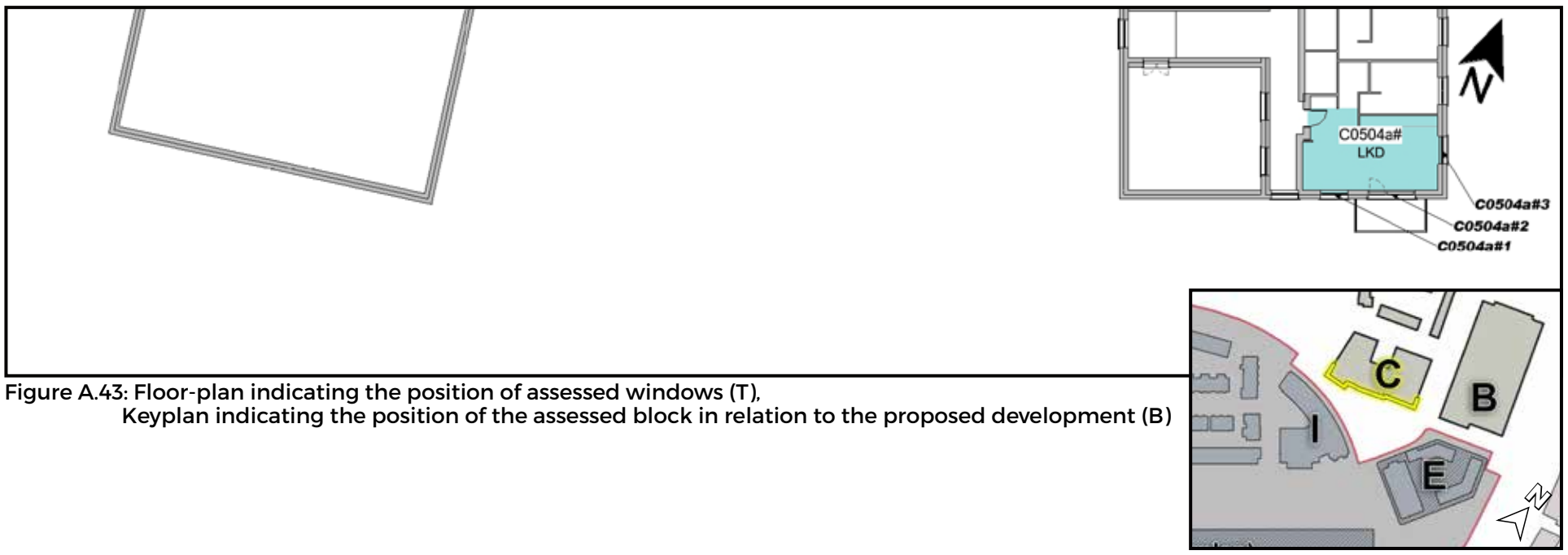


Figure A.43: Floor-plan indicating the position of assessed windows (T),
Keyplan indicating the position of the assessed block in relation to the proposed development (B)

## A.3.24 Permitted Block C (Phase 1) - 5th Floor - Winter Probable Sunlight Hours

| Table No. A.3.24 - WPSH Results: Permitted Block C (Phase 1) - 5th Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| C0504a# | 32.32% | 24.21% | 0.75 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.3.25 Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor - APSH

| Table No. A.3.26 - APSH Results: Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline APSH | Proposed APSH | Ratio of Proposed APSH to Baseline APSH | Recommended minimum APSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| BLb# | 40.92% | 28.20% | 0.69 | 25.00% | BRE Compliant | Negligible |
| BLe# | 74.87% | 70.33% | 0.94 | 25.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

Figure A.44: Floor-plan indicating the position of assessed windows, Ground Floor (T) & 1st Floor (B)
Keyplan indicating the position of the assessed block in relation to the proposed development (R)

## A.3.26 Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor - WPSH

| Table No. A.3.26 - WPSH Results: Permitted Neighbouring Development (Ref. 22203) - Ground and 1st Floor | | | | | | |
|---|---|---|---|---|---|---|
| Window / Room Number | Baseline WPSH | Proposed WPSH | Ratio of Proposed WPSH to Baseline WPSH | Recommended minimum WPSH* | Level of Compliance with BRE Guidelines** | Effect of Proposed Development |
| BLb# | 6.30% | 1.49% | 0.24 | 5.00% | 30% | Major Adverse |
| BLe# | 28.40% | 25.83% | 0.91 | 5.00% | BRE Compliant | Negligible |

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window / room, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

# If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

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## A.4 Effect on Sun On Ground (SOG) in Amenity Area

Below is an example of the table used to describe the effect on SOG in existing gardens and amenity spaces.

| Table Example. A.4 - SOG Impact Assessment | | | | | | | |
|---|---|---|---|---|---|---|---|
| Assigned Area Number | Address | % of Area to Receive Above 2 Hours Sunlight on March 21st (Target >50%) | | | | Level of Compliance with BRE Guidelines | Effect of Proposed Development |
| | | Baseline | Proposed | Ratio of Proposed to Baseline | Recommended Minimum as per BRE Guidelines | | |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** |

**A: Assigned Area Number**

This column indicates the number that 3DDB have assigned to the assessed areas, which is included for the sole purpose of aiding in the identification of the corresponding space shown in the corresponding figure.

**B: Address**

This column contains the address of the assessed garden/amenity space. The locations of the gardens and amenity spaces assessed are visually represented in the corresponding figure.

**C: Baseline**

*Baseline* represents the percentage of the assessed space's area that can receive more than 2 hours of sunlight on March 21st, calculated in the baseline model state (as explained in the "Building the Model States" on page 15).

**D: Proposed**

*Proposed* represents the percentage of the assessed space's area that can receive more than 2 hours of sunlight on March 21st, calculated in the proposed model state (as explained in the "Building the Model States" on page 15).

**E: Ratio of Proposed to Baseline**

This column expresses the ratio of change between the baseline and the proposed values. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction to sunlight is more likely to be perceptible.

**F: Recommended Minimum as per the BRE Guidelines**

The BRE Guidelines indicate that a proposed development could possibly have a noticeable effect on the sunlight received by an existing garden and/or amenity area, if half the area of the space does not receive at least two hours of sunlight during the spring equinox; **and** the area that receives more than two hours of sun on the spring equinox is less than 0.8 times its former value.

To determine the *recommended minimum*, 80% of the *Baseline* value has been calculated. If this value is above the 50% threshold, a target value of 50% will be applied. If 80% of the baseline value is below 50%, then 80% of the baseline value is the appropriate target value.

**G: Level of BRE Compliance**

This column states the compliance of the *Proposed* sunlight value with the *recommended minimum as per the BRE Guidelines*. In essence, it shows whether or not the assessed garden or amenity area would experience a perceptible level of impact. If the garden or amenity area complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the garden or amenity area does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

**H: Effect of Proposed Development**

The levels of effect in this column describe the effect an assessed area will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section *"Definition of Effects"* on page 12.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## A.4.1 Phase 1 Amenity Areas

| Table No. A.4.1 - SOG Results: Phase 1 Amenity Areas | | | | | | | |
|---|---|---|---|---|---|---|---|
| Assigned Area Number | Address | % of Area to Receive Above 2 Hours Sunlight on March 21st (Target >50%) | | | | Level of Compliance with BRE Guidelines* | Effect of Proposed Development** |
| | | Baseline | Proposed | Ratio of Proposed to Baseline | Recommended minimum | | |
| 1 | Open Space, Phase 1 | 98.78% | 98.34% | 1.00 | 50.00% | BRE Compliant | Negligible |
| 2 | Amenity Area, Block C | 99.23% | 87.79% | 0.88 | 50.00% | BRE Compliant | Negligible |

* The BRE guidelines state that in order for a proposed development to have a noticeable effect on the amount of sunlight received in an existing garden or amenity area, the value needs to both drop below the stated target value of 50% **and** be reduced by more than 20% of the existing value.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 12.

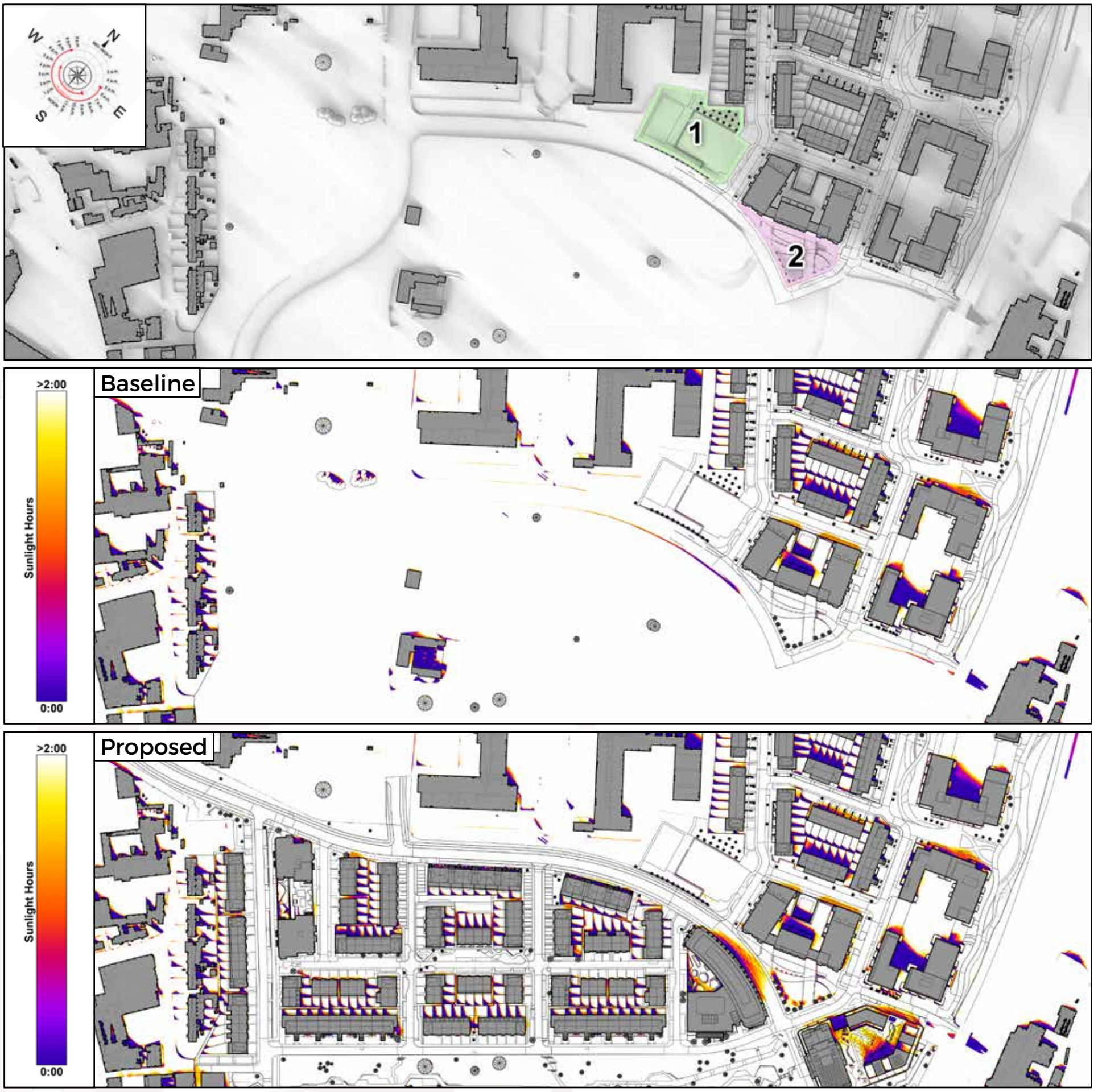


Figure A.45: False colour plans. White area indicates the area capable of receiving 2 hours of sunlight on March 21st.

| | Baseline | Proposed |
|---|---|---|
| March 21st 7:00 | | |
| March 21st 8:00 | | |
| March 21st 9:00 | | |
| March 21st 10:00 | | |

**B.0** **Shadow Studies**
**B.1** **Shadow Study 21 March**

**Project:** Sea Gardens, Phase 2, Mixed Use Development

**Granted Phase 1** | **Proposed Development** | **Future Masterplan**

**March 21st**
**Sunrise 6:32 | Sunset 18:32**

**Applicant:** Shankill Property Investments Limited

3D DESIGN BUREAU

| | Baseline | Proposed |
|---|---|---|
| March 21st 11:00 | | |
| March 21st 12:00 | | |
| March 21st 13:00 | | |
| March 21st 14:00 | | |

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| | | | | |
|---|---|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **March 21st**<br>**Sunrise 6:32 \| Sunset 18:32** | **Applicant:** Shankill Property Investments Limited | | | 3D DESIGN BUREAU |

| | Baseline | Proposed |
|---|---|---|
| March 21st 15:00 | | |
| March 21st 16:00 | | |
| March 21st 17:00 | | |
| March 21st 18:00 | | |

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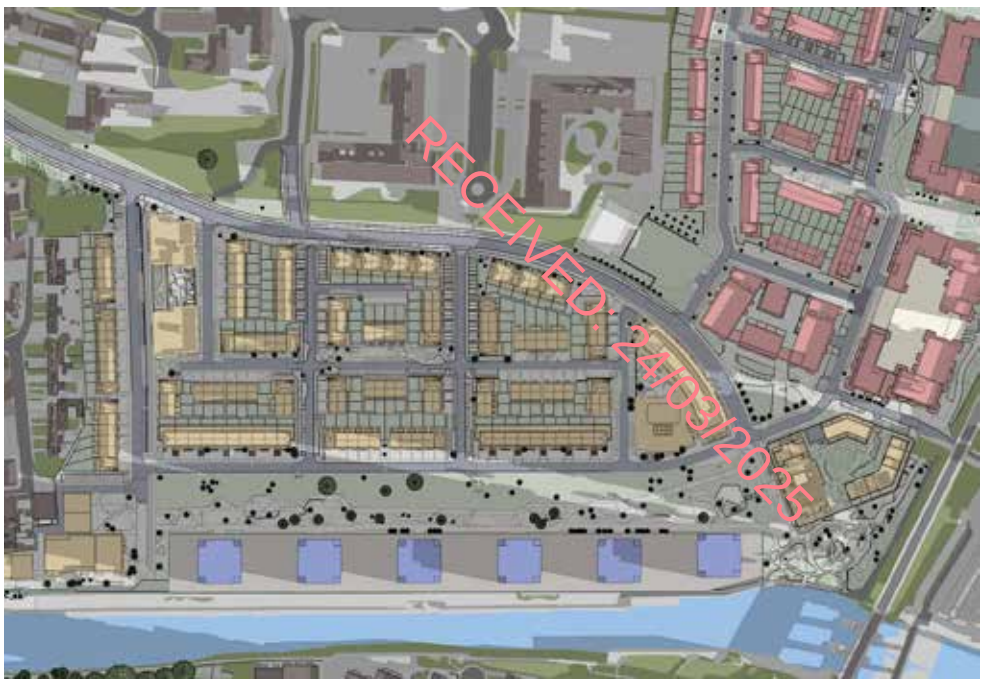
| | | |
|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** / **Proposed Development** / **Future Masterplan** |
| **March 21st**<br>**Sunrise 6:32 \| Sunset 18:32** | **Applicant:** Shankill Property Investments Limited | 3D DESIGN BUREAU |

| | Baseline | Proposed |
|---|---|---|
| June 21st 6:00 | |  |
| June 21st 7:00 | | |
| June 21st 8:00 | | |
| June 21st 9:00 | | |

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**B.2** **Shadow Study 21 June**

**June 21st**
**Sunrise 5:04 | Sunset 21:48**

**Project:** Sea Gardens, Phase 2, Mixed Use Development

**Applicant:** Shankill Property Investments Limited

| Granted Phase 1 | Proposed Development | Future Masterplan |
|---|---|---|

3D DESIGN BUREAU

| | Baseline | Proposed |
|---|---|---|
| June 21st 10:00 | | |
| June 21st 11:00 | | |
| June 21st 12:00 | | |
| June 21st 13:00 | | |

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| | | | | |
|---|---|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **June 21st**<br>**Sunrise 5:04 \| Sunset 21:48** | **Applicant:** Shankill Property Investments Limited | | | 3D DESIGN BUREAU |

| | Baseline | Proposed |
|---|---|---|
| June 21st 14:00 | | |
| June 21st 15:00 | | |
| June 21st 16:00 | | |
| June 21st 17:00 | | |

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| | | | | |
|---|---|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **June 21st**<br>**Sunrise 5:04 \| Sunset 21:48** | **Applicant:** Shankill Property Investments Limited | | | 3D DESIGN BUREAU |

| | Baseline | Proposed |
|---|---|---|
| June 21st 18:00 | | |
| June 21st 19:00 | | |
| June 21st 20:00 | | |
| June 21st 21:00 | | |



| | | | | |
|---|---|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **June 21st**<br>**Sunrise 5:04 \| Sunset 21:48** | **Applicant:** Shankill Property Investments Limited | | | 3D DESIGN BUREAU |

| | Baseline | Proposed |
|---|---|---|
| December 21st 9:00 | | |
| December 21st 10:00 | | |
| December 21st 11:00 | | |
| December 21st 12:00 | | |

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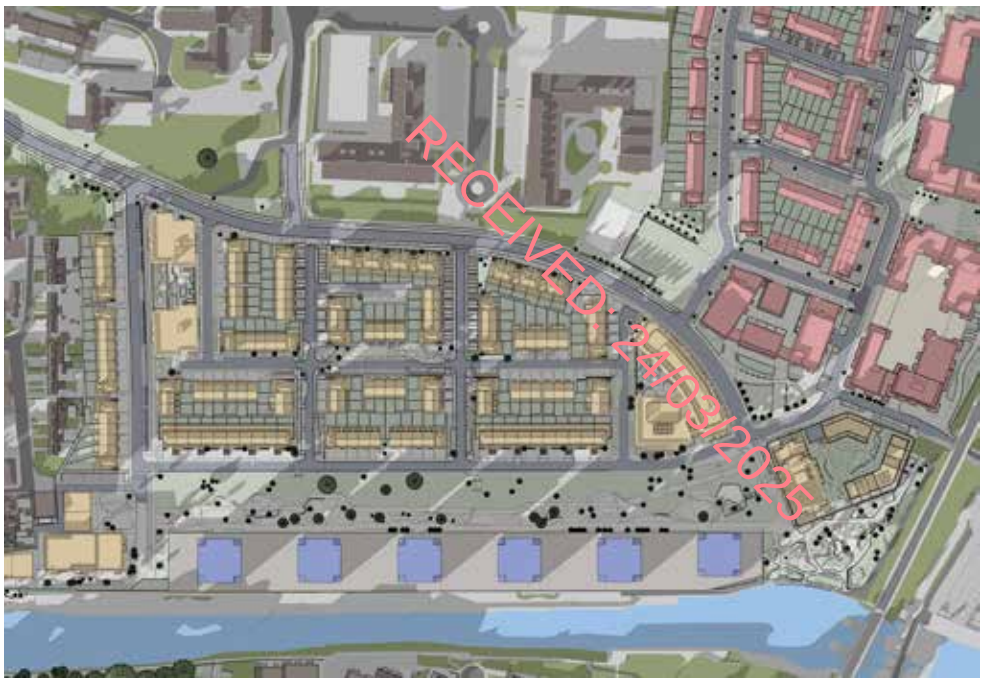
| | | | |
|---|---|---|---|
| **B.3** **Shadow Study 21 December** | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **December 21st**<br>**Sunrise 8:44 \| Sunset 16:00** | **Applicant:** Shankill Property Investments Limited | 3D DESIGN BUREAU | | |

| | Baseline | Proposed |
|---|---|---|
| December 21st 13:00 | |  |
| December 21st 14:00 | | |
| December 21st 15:00 | | |
| December 21st 16:00 | | |

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| | | | | |
|---|---|---|---|---|
| | **Project:** Sea Gardens, Phase 2, Mixed Use Development | **Granted Phase 1** | **Proposed Development** | **Future Masterplan** |
| **December 21st**<br>**Sunrise 8:44 \| Sunset 16:00** | **Applicant:** Shankill Property Investments Limited | | | 3D DESIGN BUREAU |

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# C.0 Scheme Performance

## C.1 Floor Plans of assessed units

### C.1.1 Proposed Duplex Floor Plans - Type RD1

Figure C.1: Duplex Type RD1 - Site Location

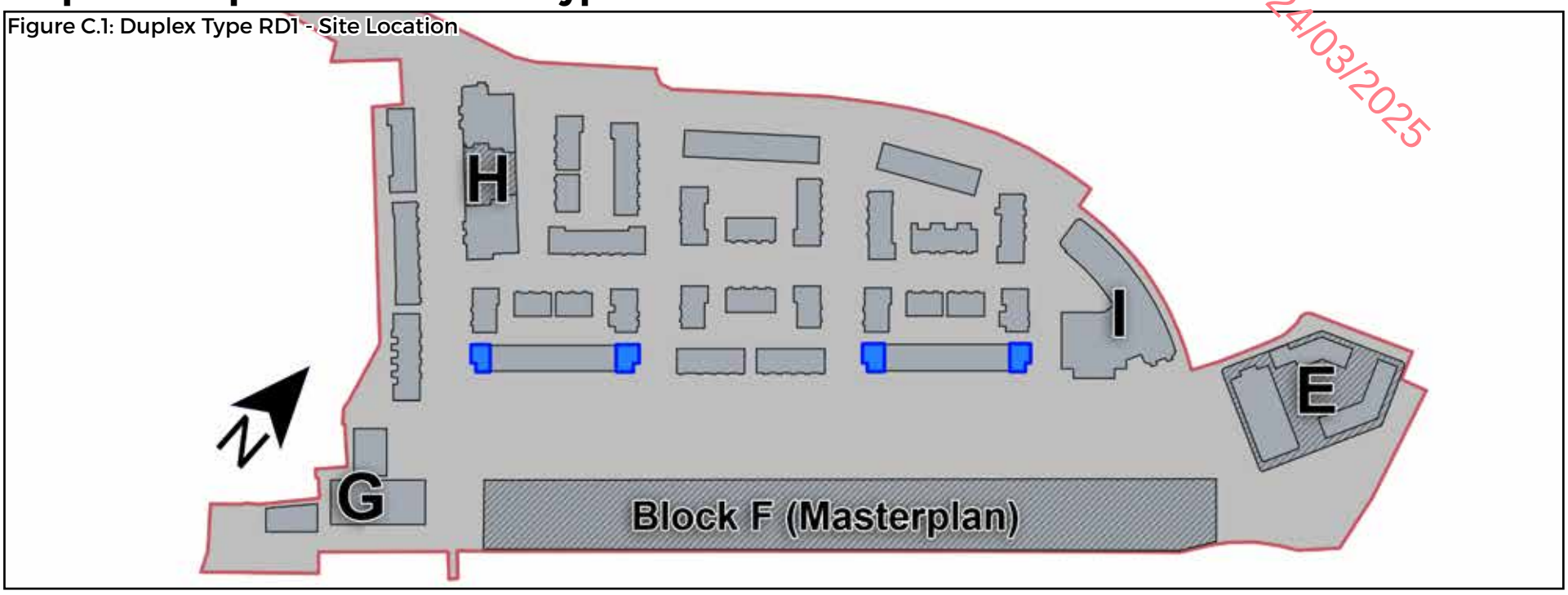


Figure C.2: Duplex Type RD1 - Level 00

Figure C.3: Duplex Type RD1 - Level 01

Figure C.4: Duplex Type RD1 - Level 02

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## C.1.2 Proposed Duplex Floor Plans - Type RD2

Figure C.5: Duplex Type RD2 - Site Location

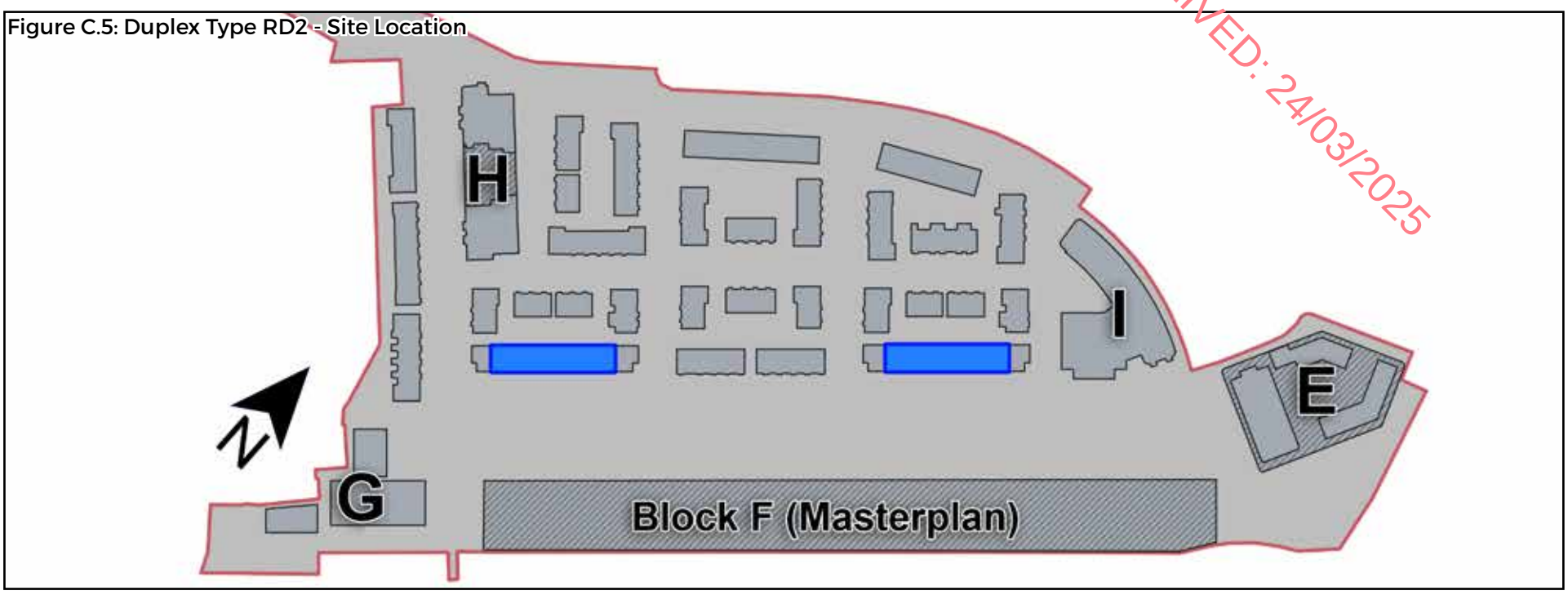



Figure C.6: Duplex Type RD2 - Level 00

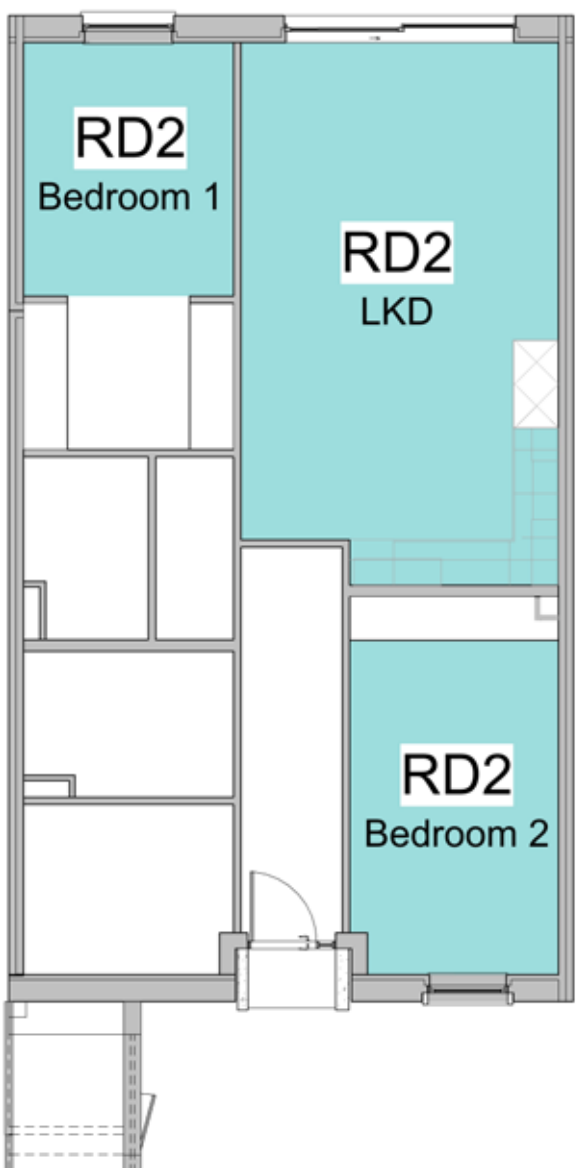



Figure C.7: Duplex Type RD2 - Level 01

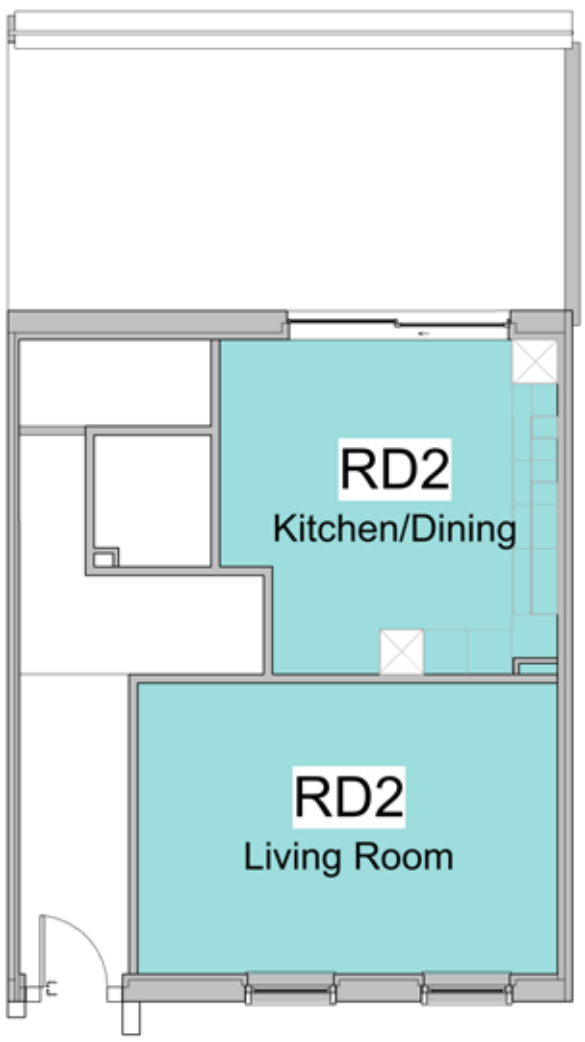
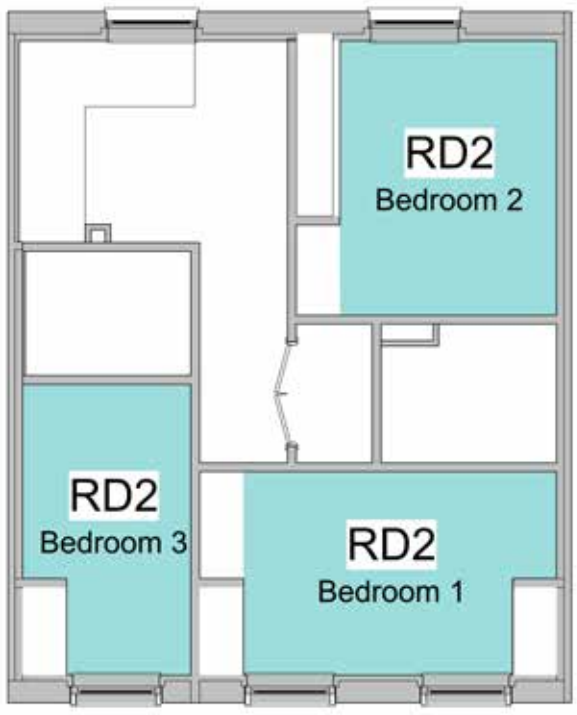



Figure C.8: Duplex Type RD2 - Level 02



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## C.1.3 Proposed Duplex Floor Plans - Type RD3

Figure C.9: Duplex Type RD3 - Site Location

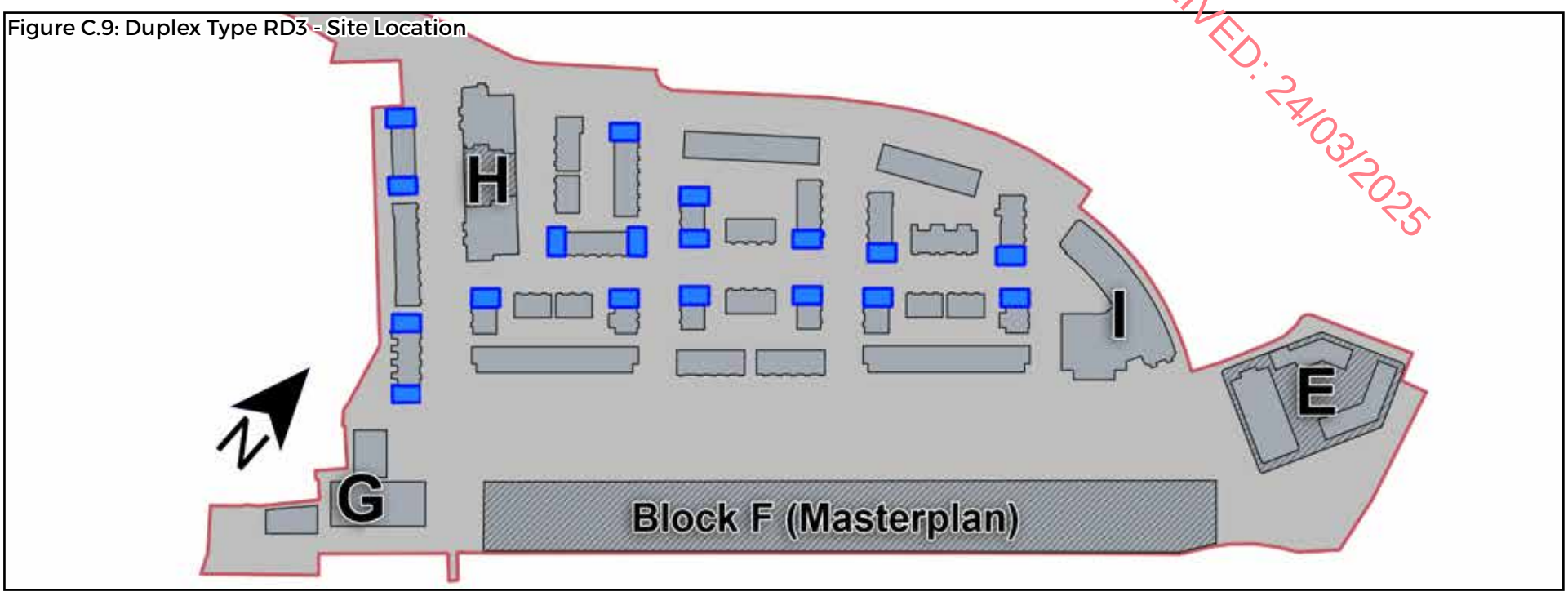


Figure C.10: Duplex Type RD3 - Level 00

Figure C.11: Duplex Type RD3 - Level 01

Figure C.12: Duplex Type RD3 - Level 02

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## C.1.4 Proposed Duplex Floor Plans - Type RD4

Figure C.13: Duplex Type RD4 - Site Location

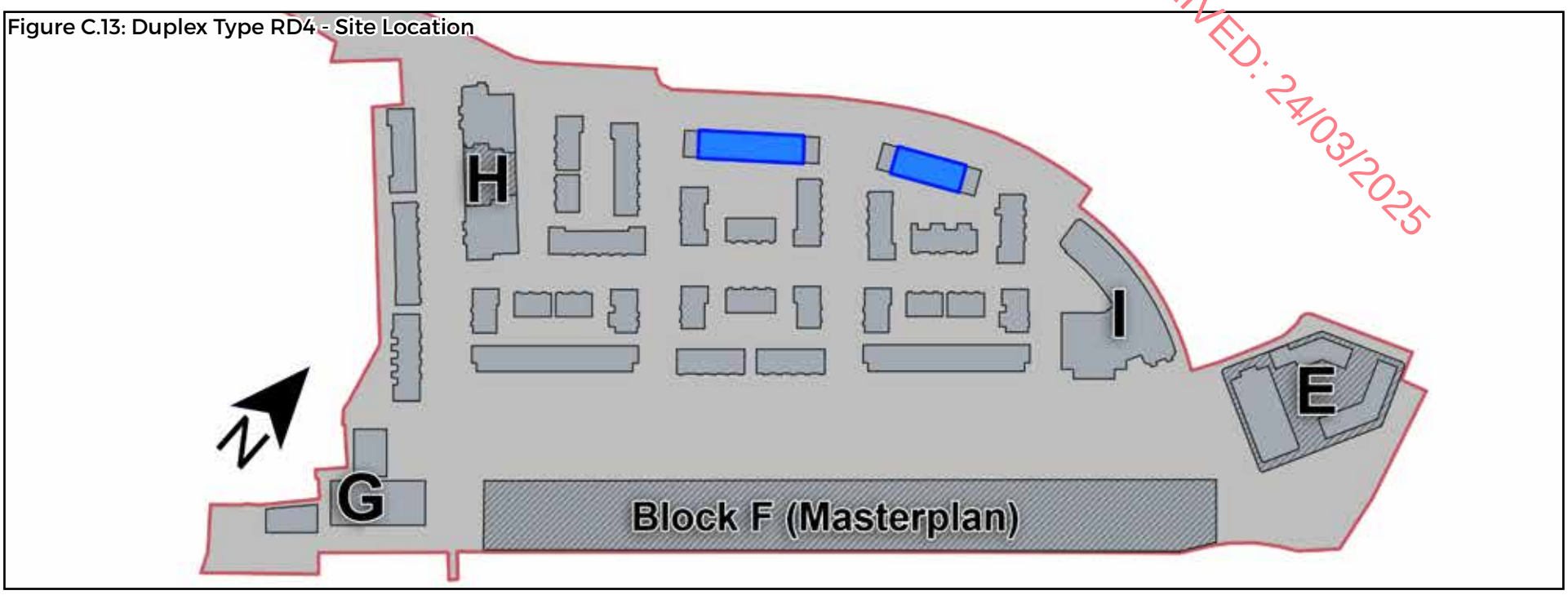



Figure C.14: Duplex Type RD4 - Level 00

Figure C.15: Duplex Type RD4 - Level 01

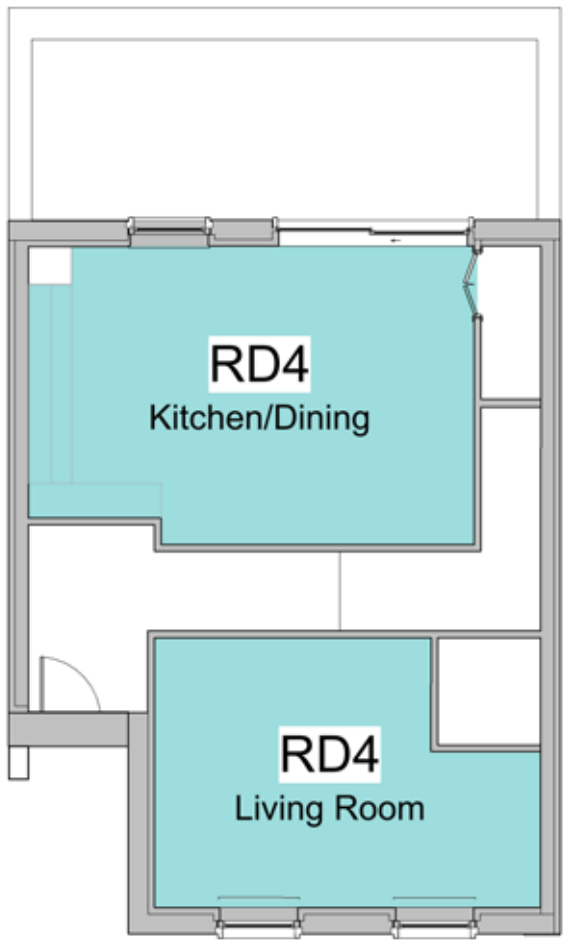
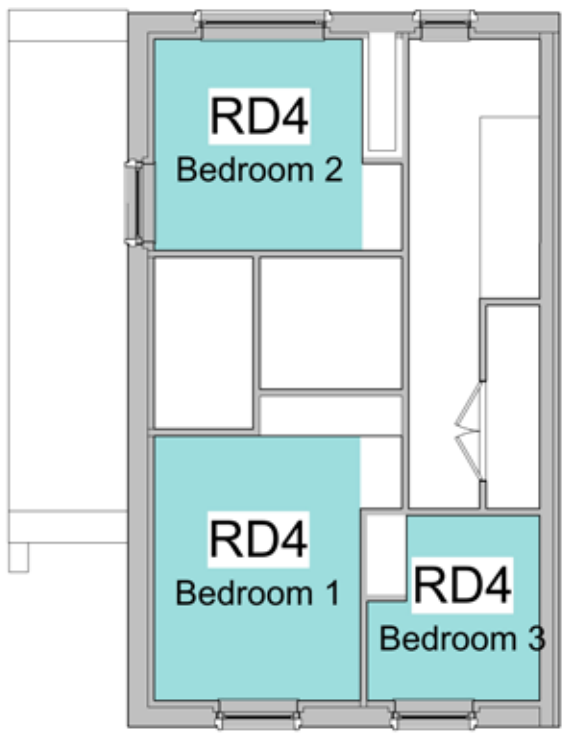



Figure C.16: Duplex Type RD4 - Level 02



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## C.1.5 Proposed Duplex Floor Plans - Type RD5

Figure C.17: Duplex Type RD5 - Site Location

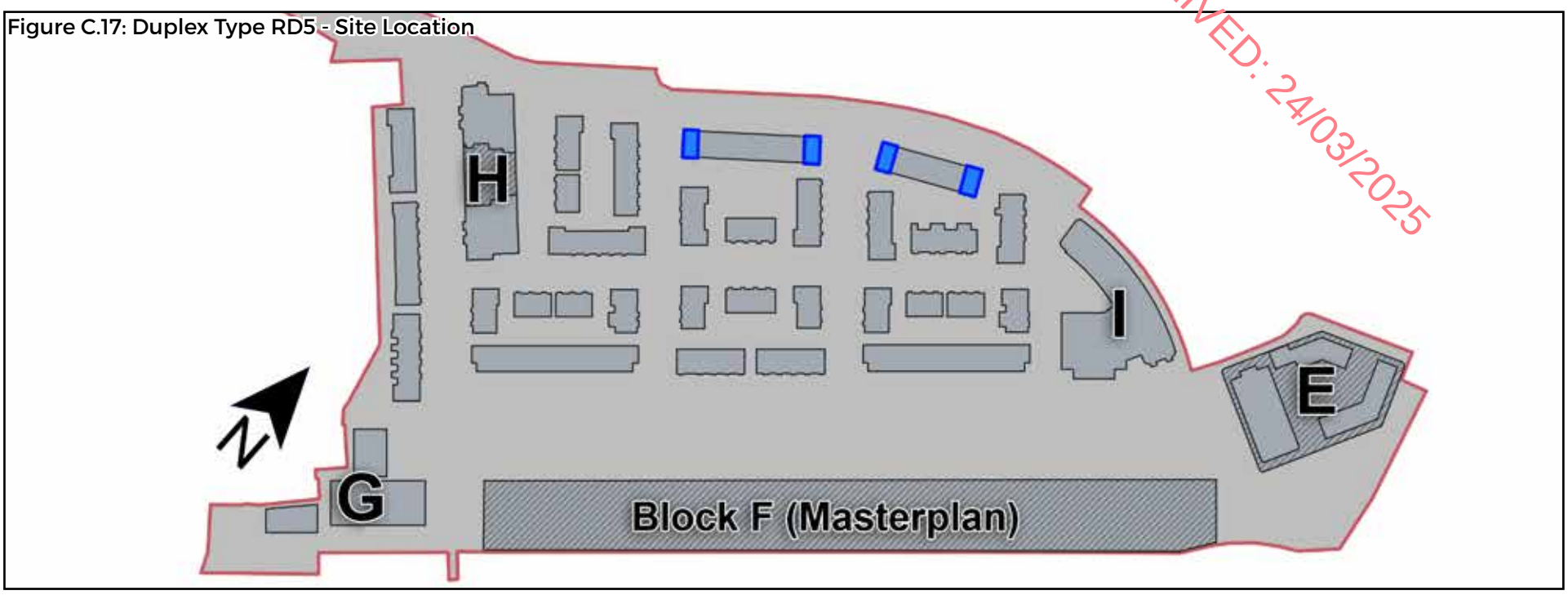
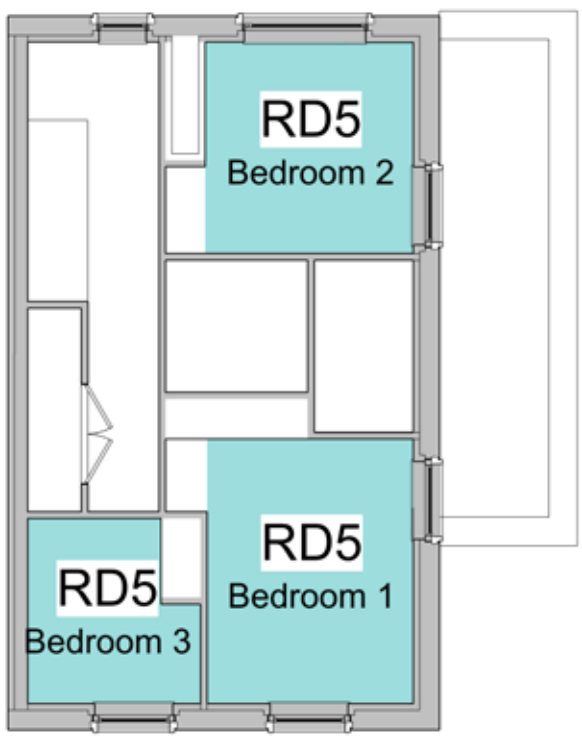



Figure C.18: Duplex Type RD5 - Level 00

Figure C.19: Duplex Type RD5 - Level 01

Figure C.20: Duplex Type RD5 - Level 02



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## C.1.6 Proposed Triplex Floor Plans - Block E

Figure C.21: Triplex Units - Block E - Site Location

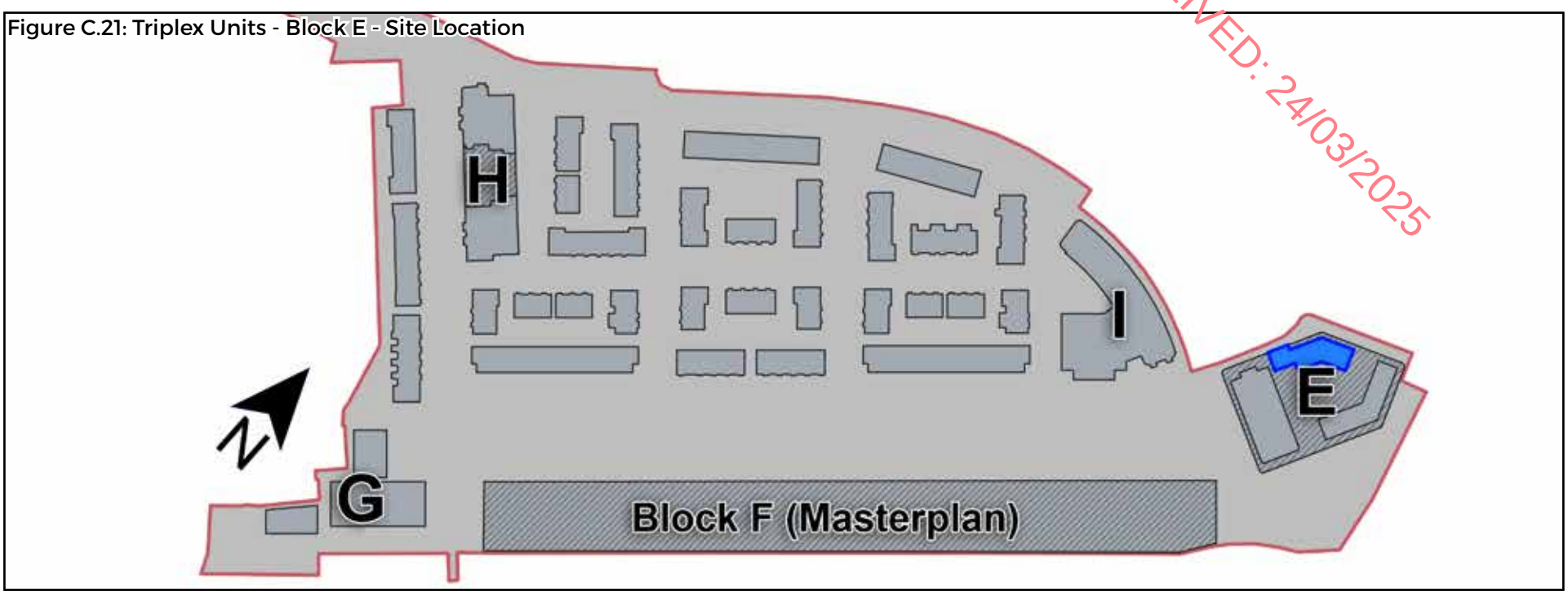


Figure C.22: Triplex Units - Block E - Level 01

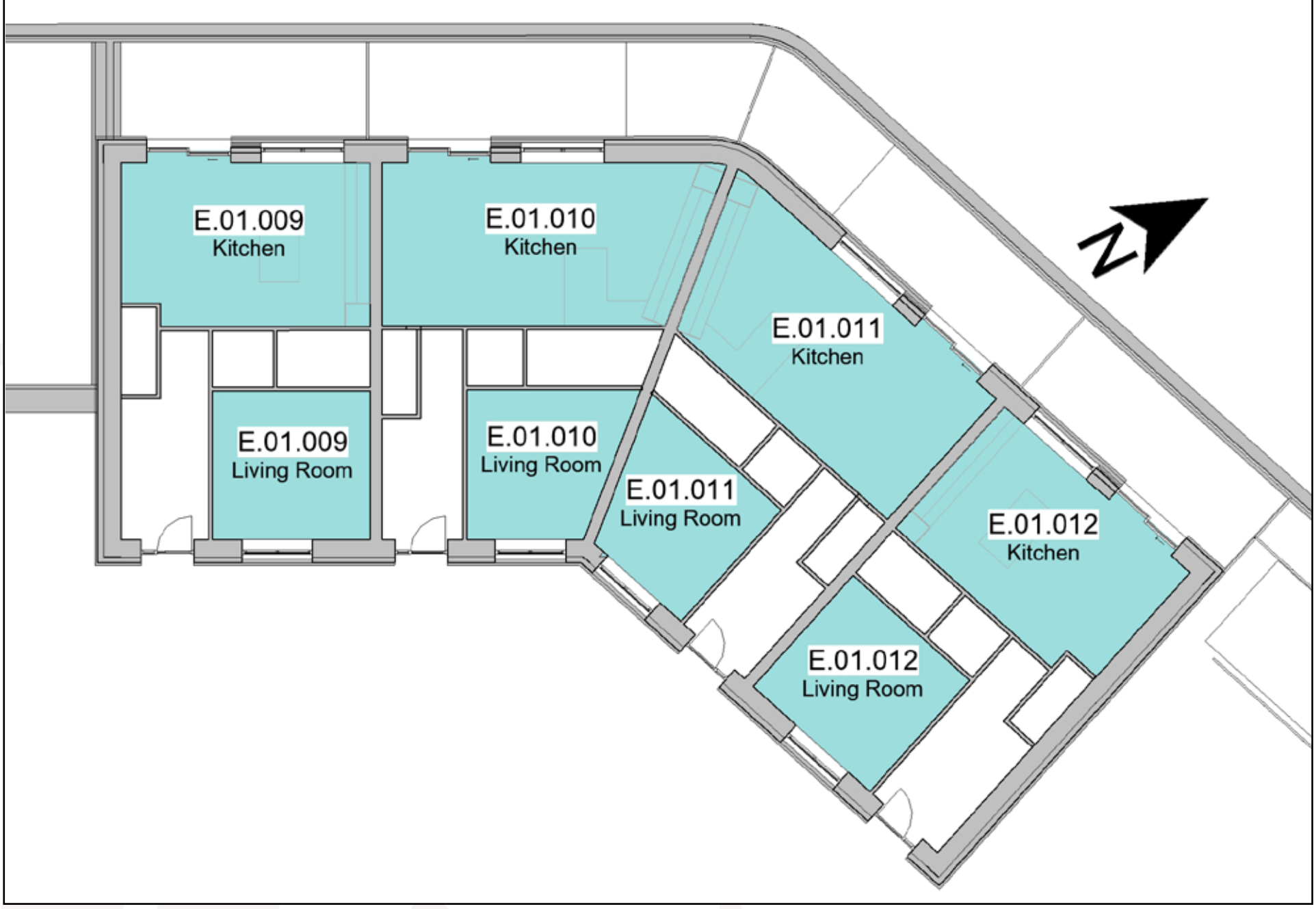

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Figure C.23: Triplex Units - Block E - Level 02

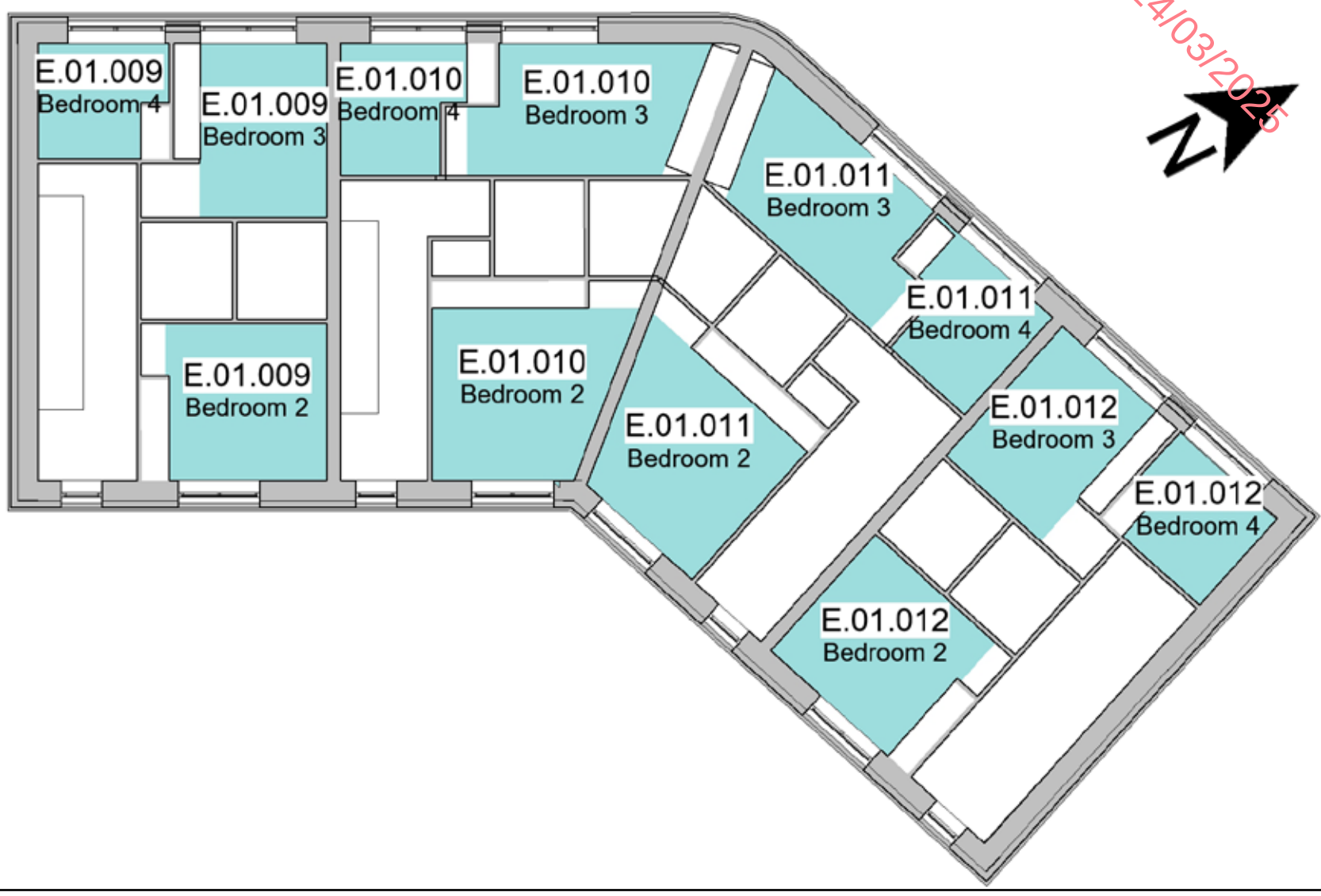
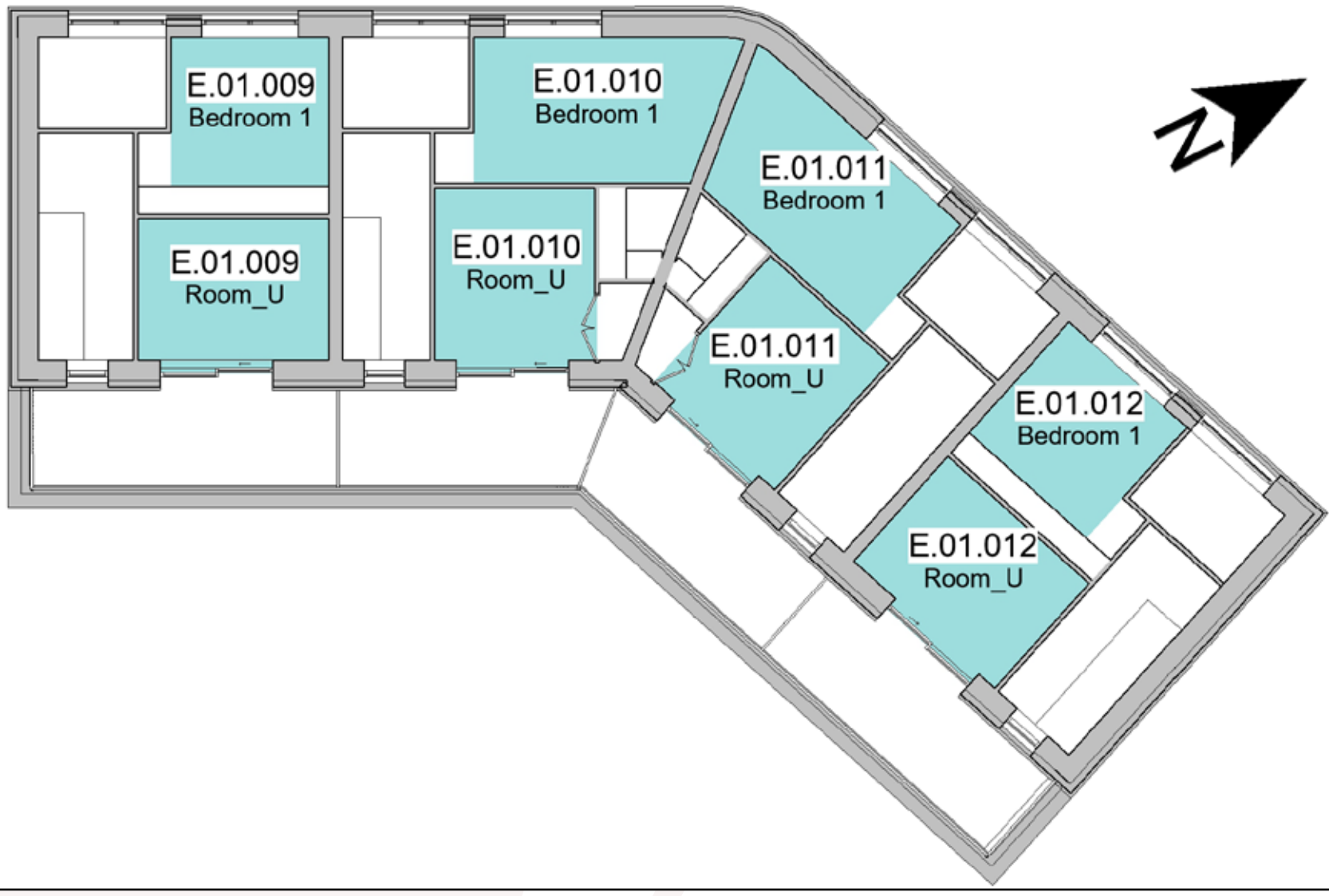



Figure C.24: Triplex Units - Block E - Level 03



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## C.1.7 Proposed Duplex and Triplex Floor Plans - Block E

Figure C.25: Duplex and Triplex Units - Block E - Site Location

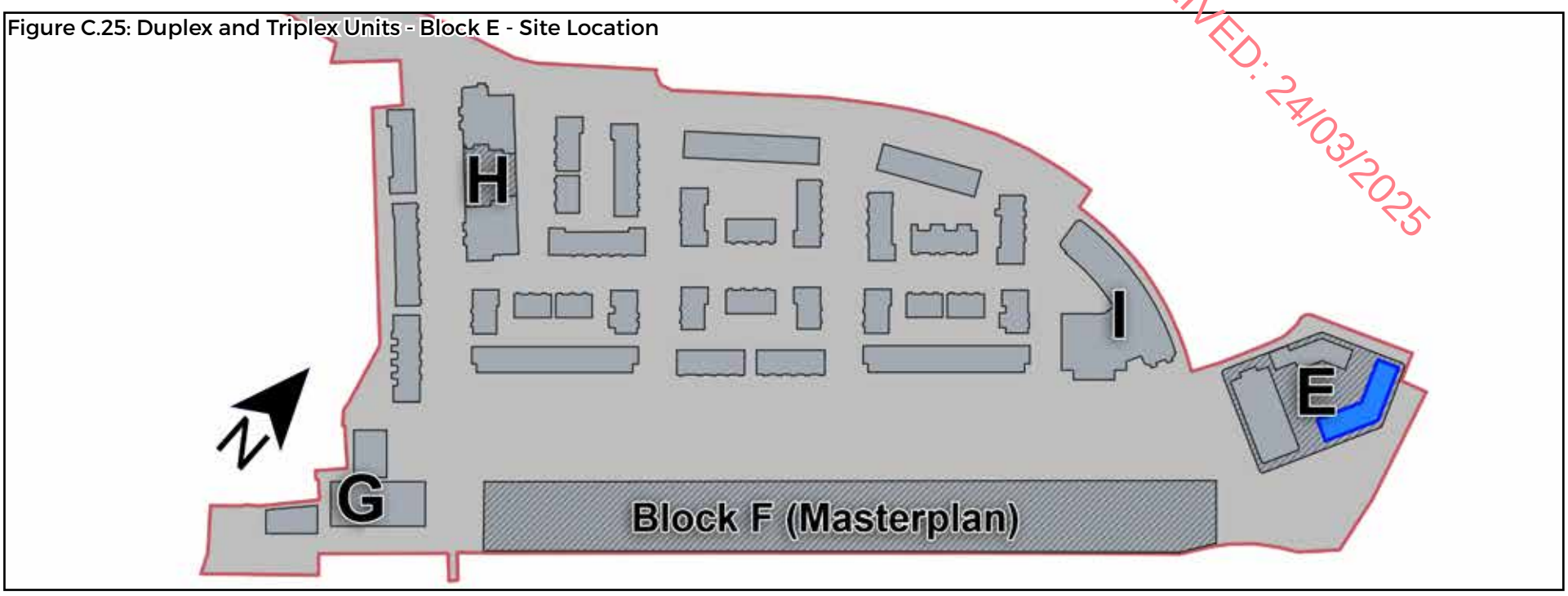


Figure C.26: Duplex and Triplex Units - Block E - Level 01

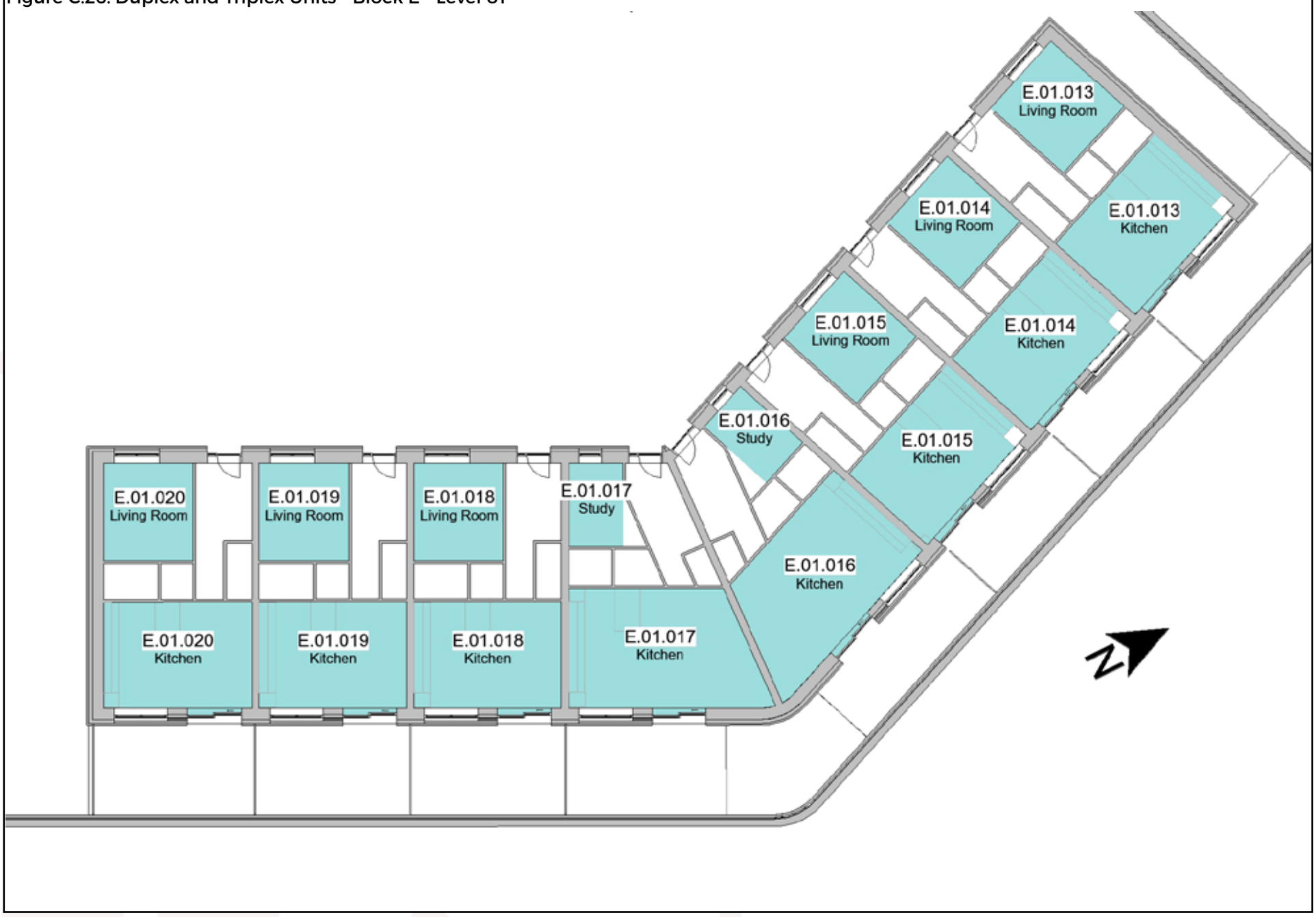

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Figure C.27: Duplex and Triplex Units - Block E - Level 02

Figure C.28: Duplex and Triplex Units - Block E - Level 03

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## C.1.8 Proposed Apartment Floor Plans - Block E

Figure C.29: Apartment Units - Block E - Site Location

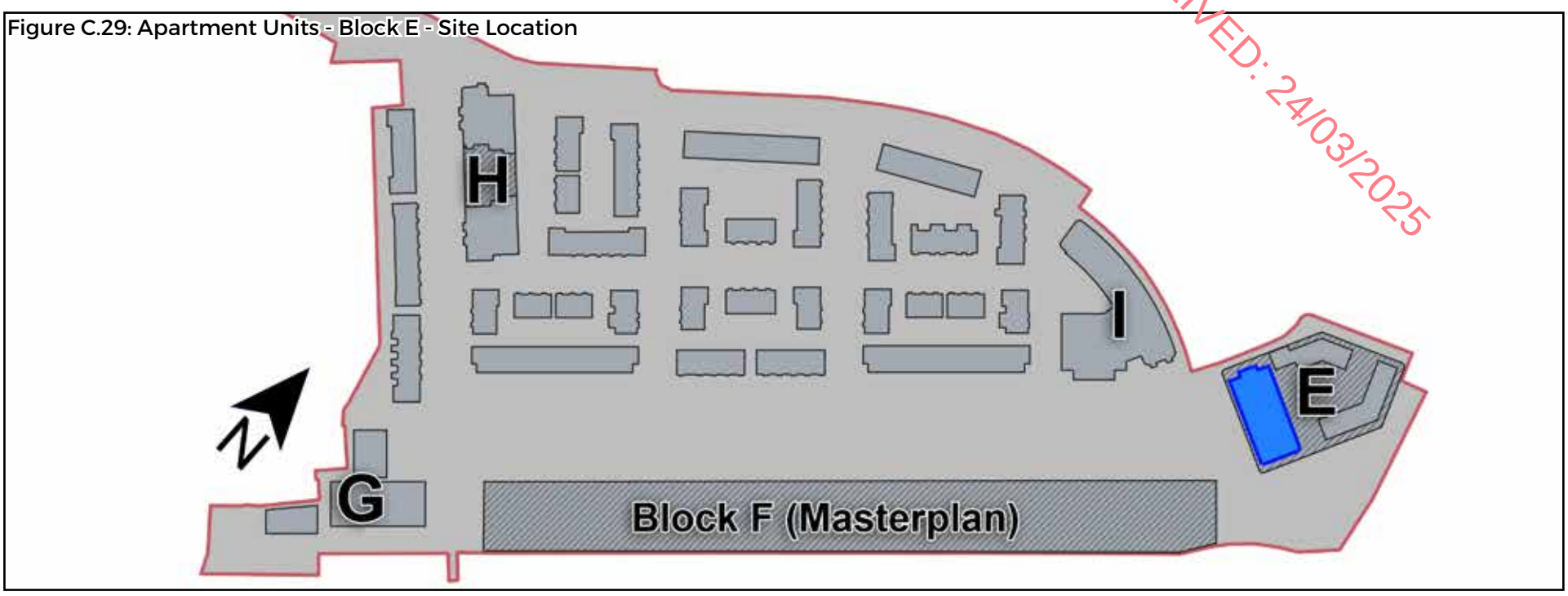


Figure C.31: Apartment Units - Block E - Level 01

Figure C.30: Apartment Units - Block E - Level 02

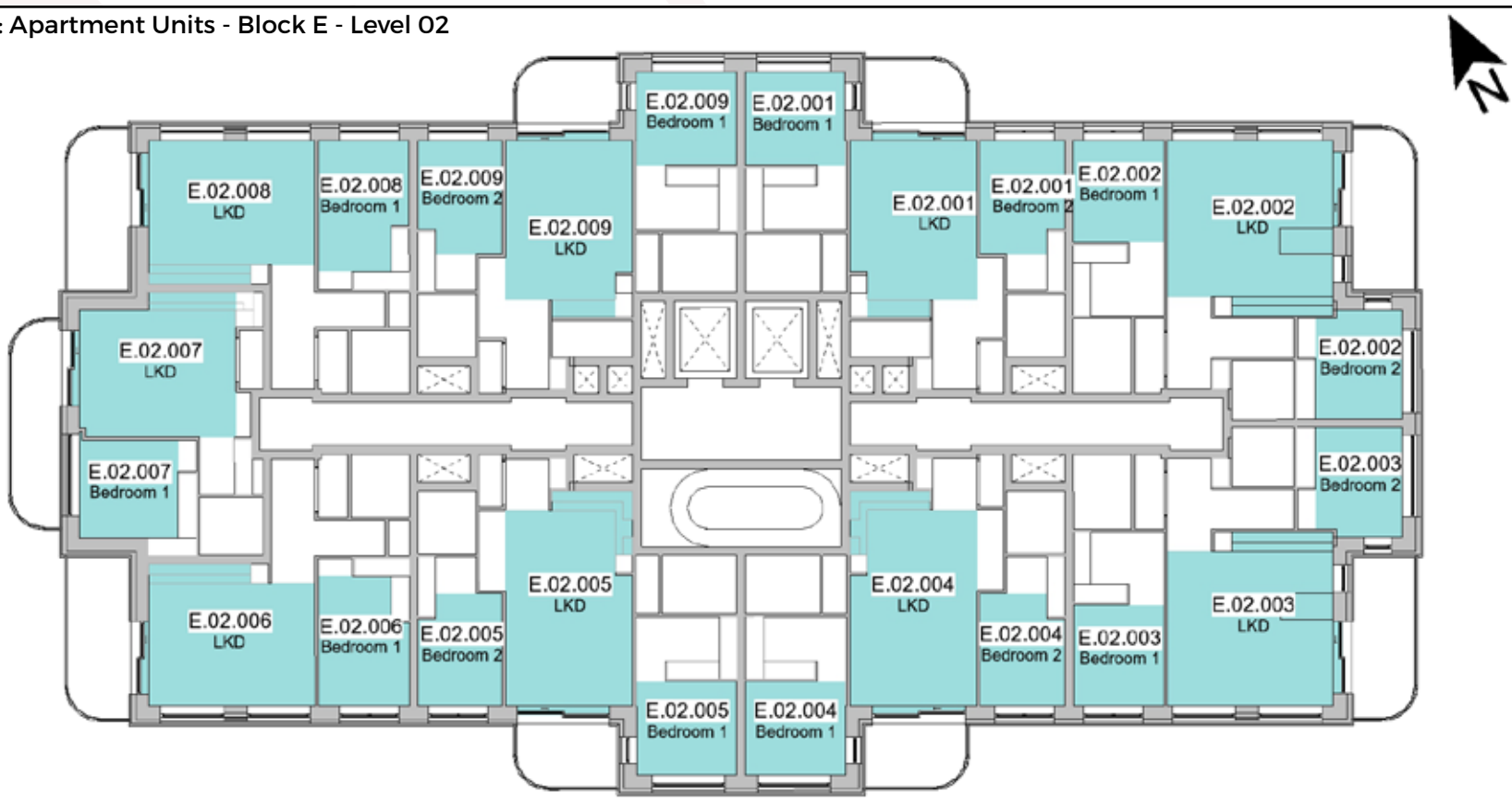

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Figure C.33: Apartment Units - Block E - Level 03

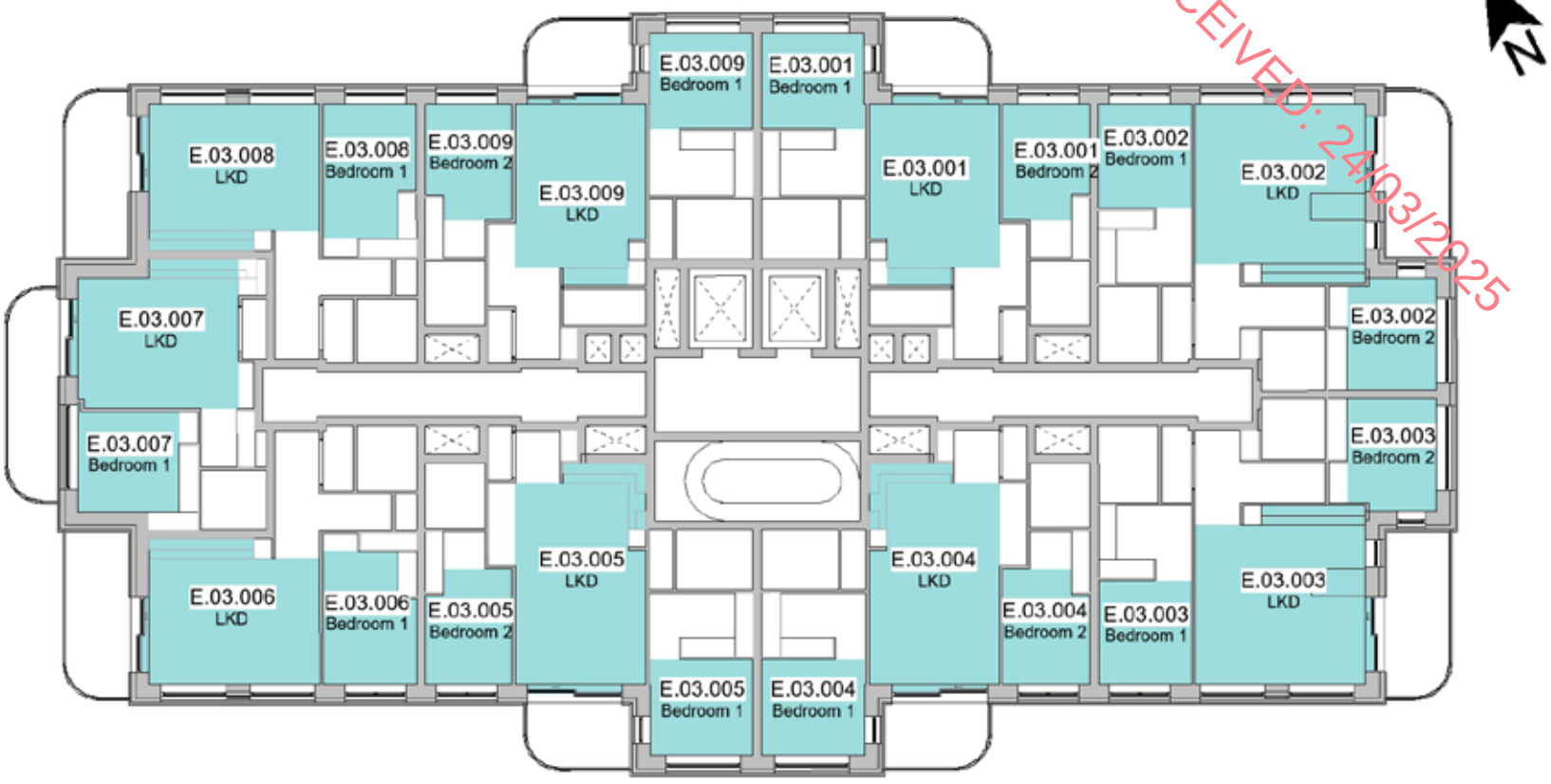


Figure C.32: Apartment Units - Block E - Level 04

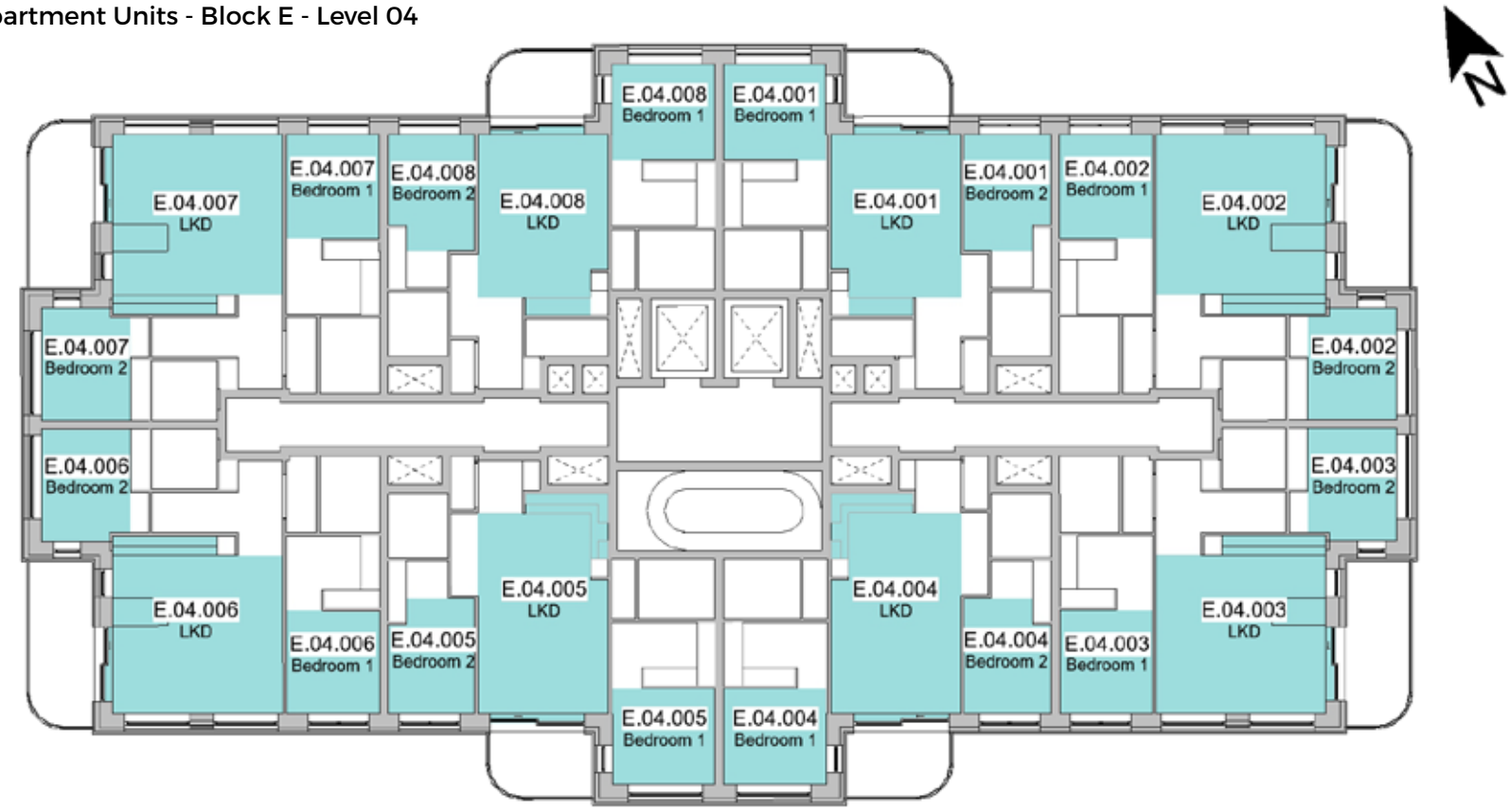


Figure C.34: Apartment Units - Block E - Level 05

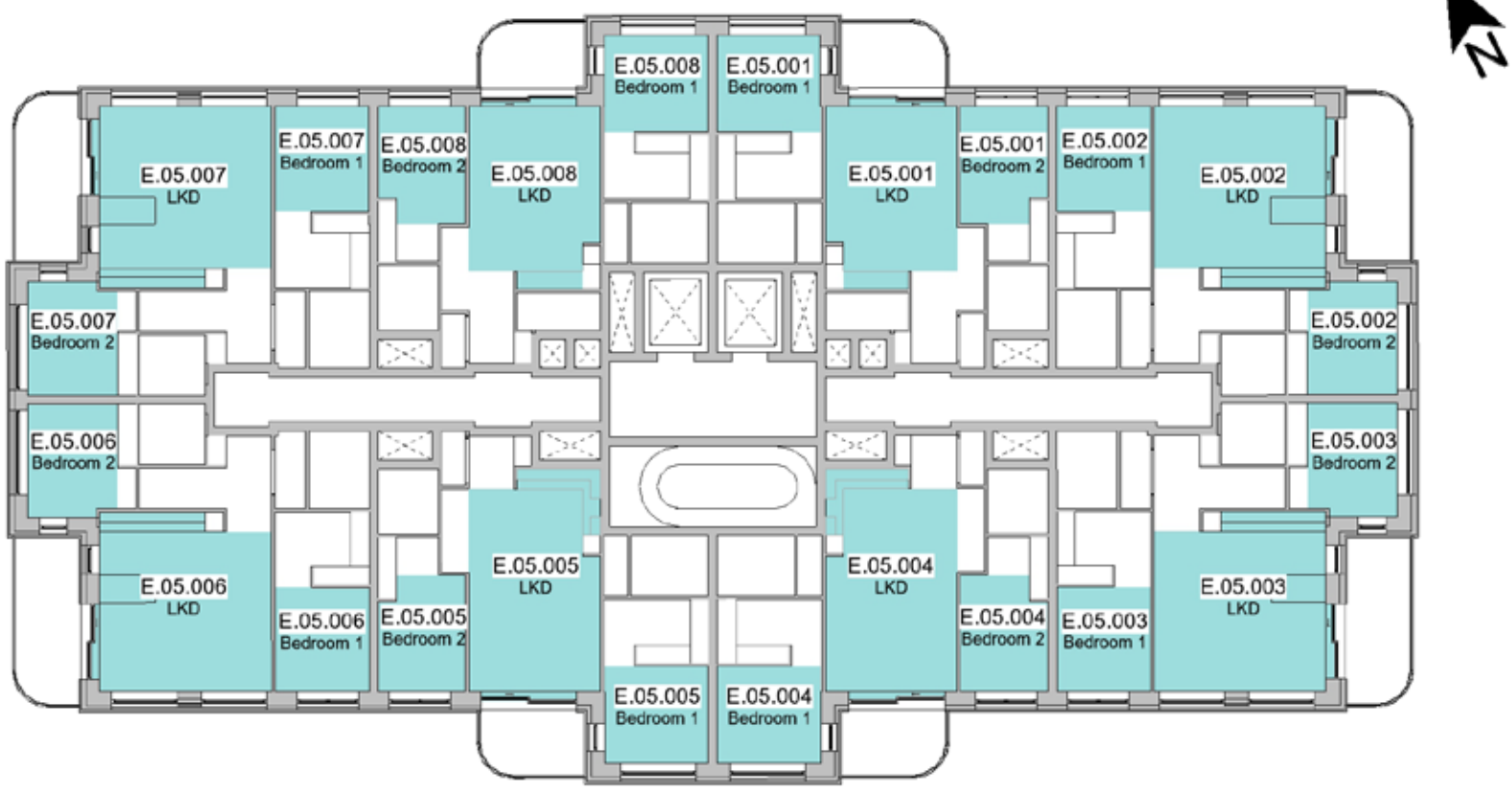

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Figure C.37: Apartment Units - Block E - Level 06

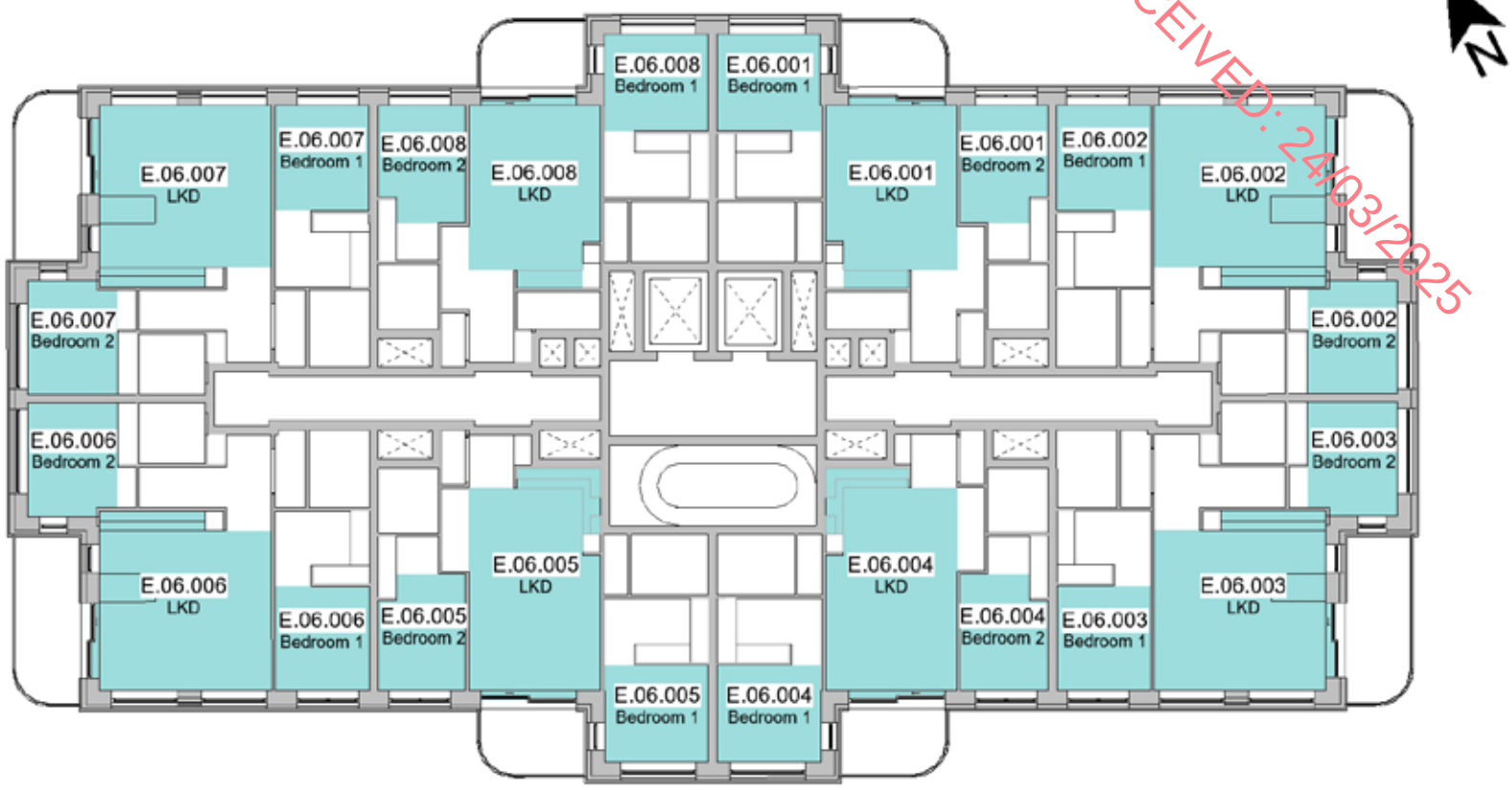


Figure C.35: Apartment Units - Block E - Level 07

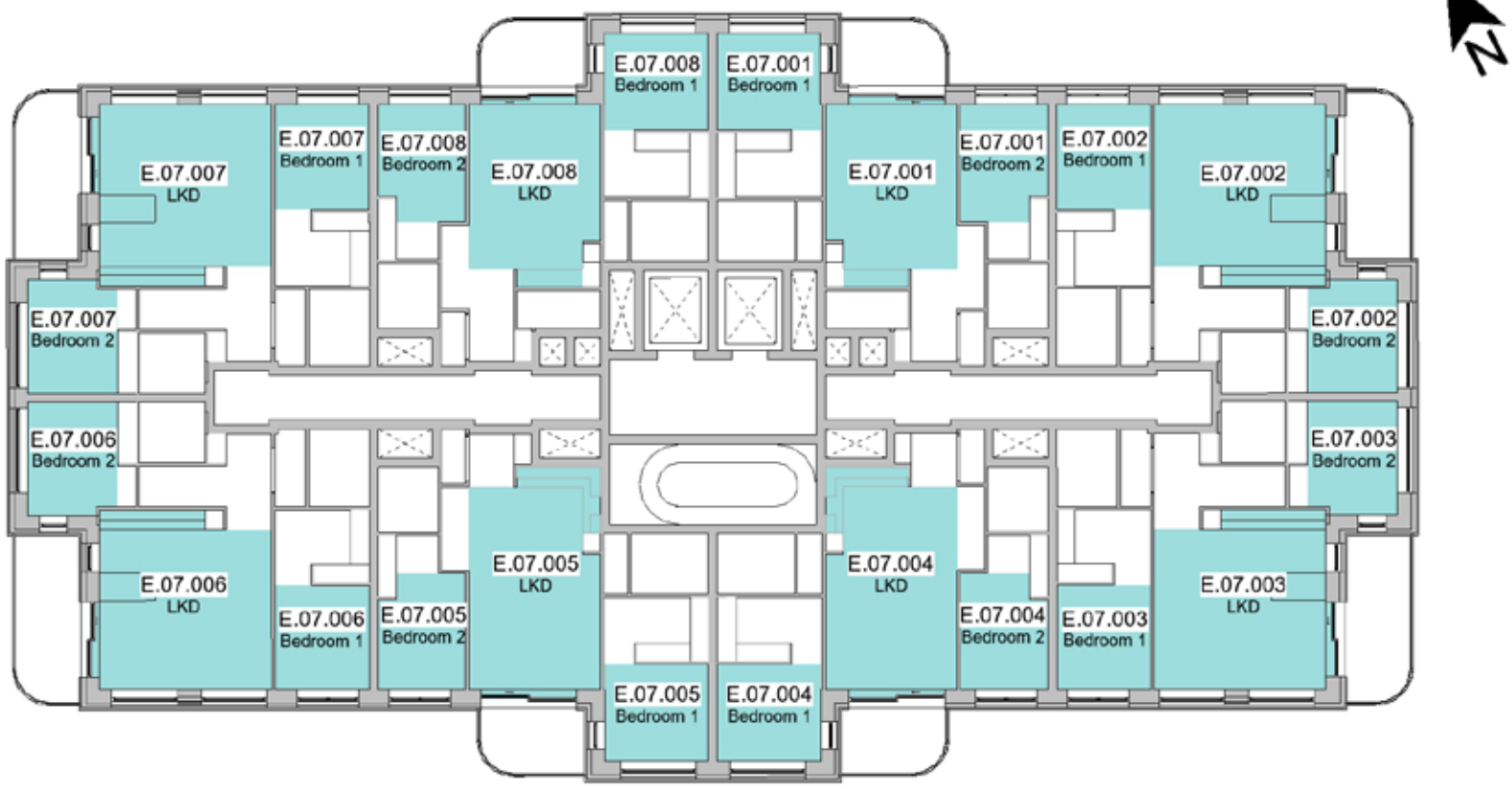


Figure C.36: Apartment Units - Block E - Level 08

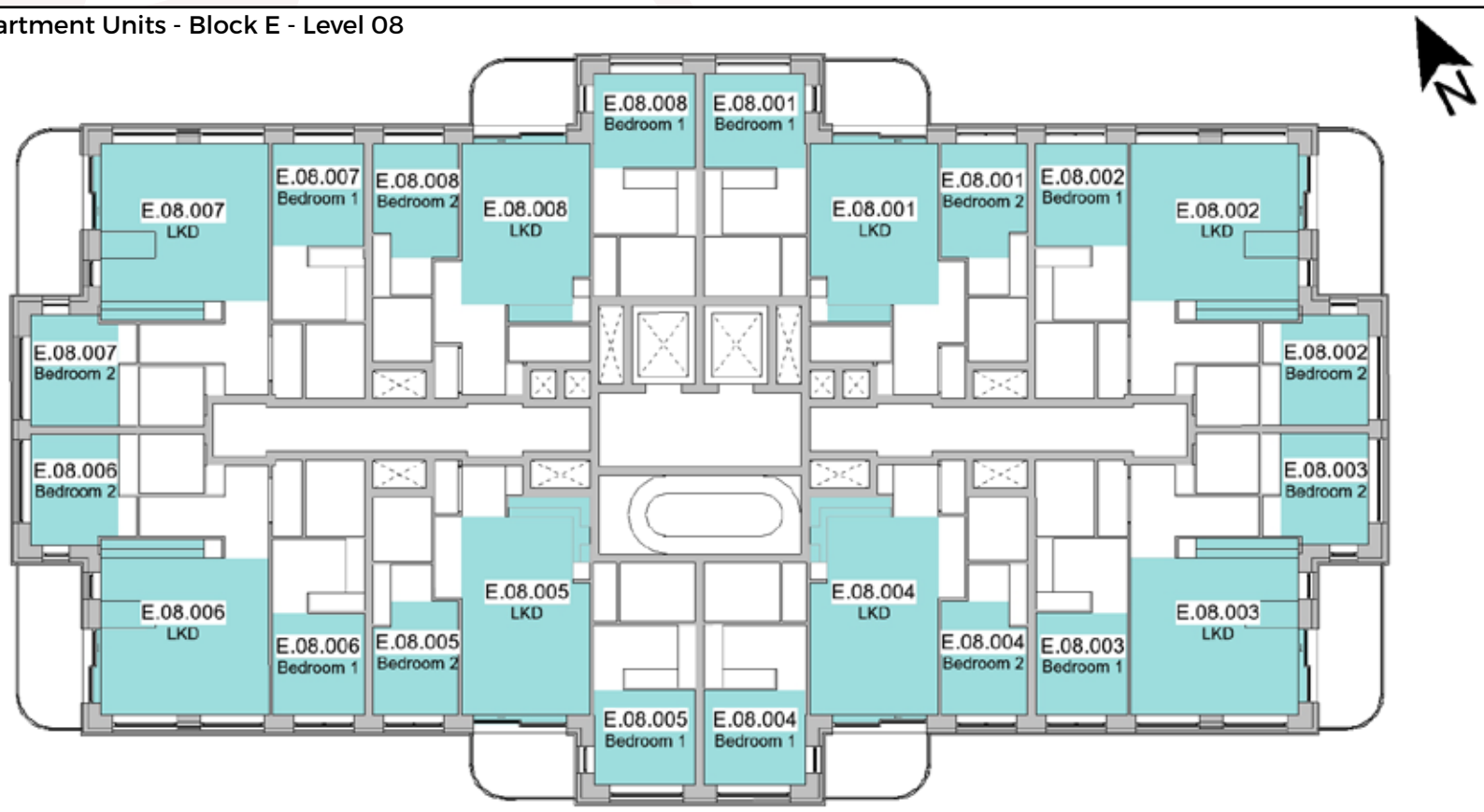

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Figure C.40: Apartment Units - Block E - Level 09

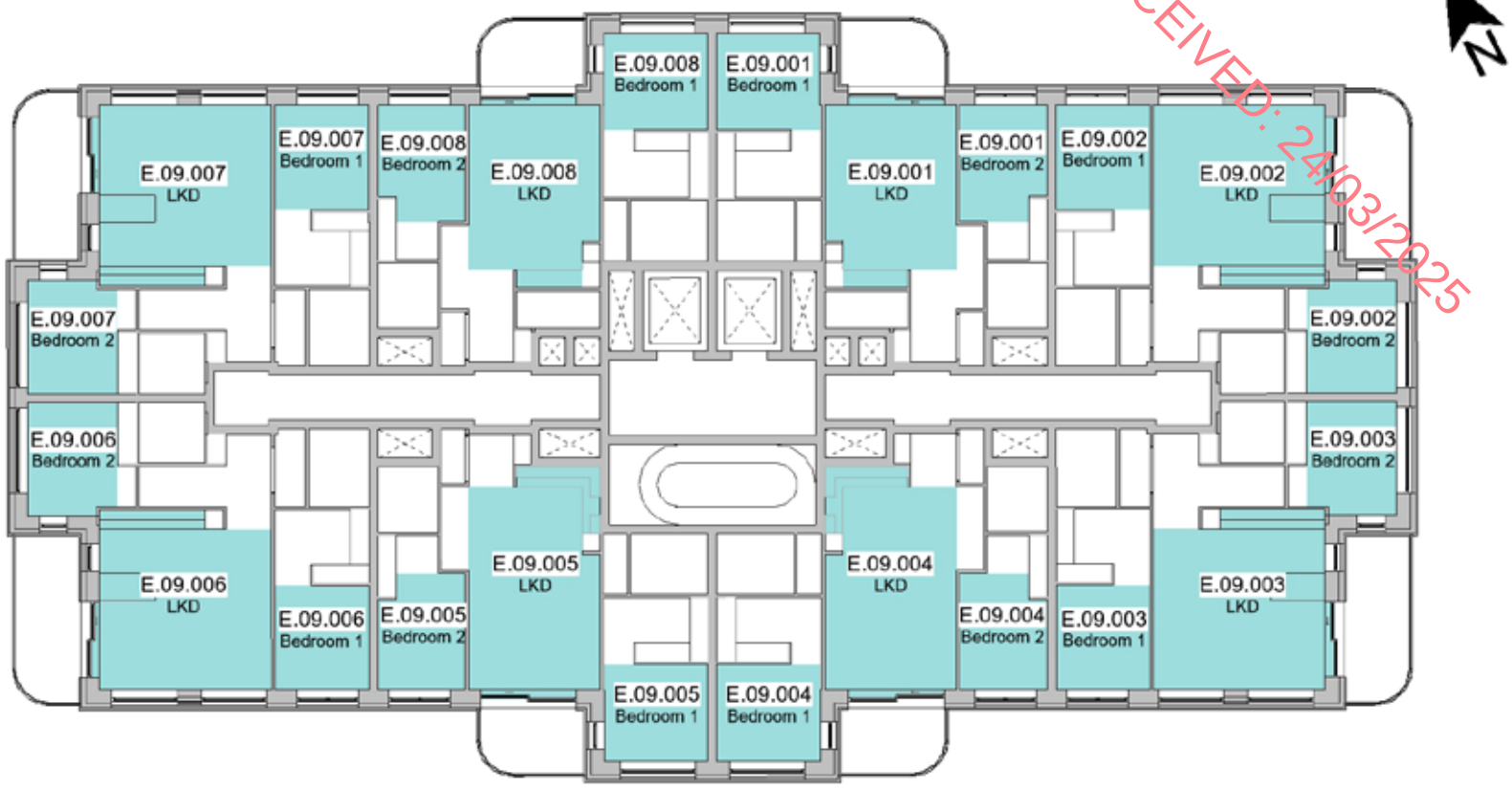


Figure C.38: Apartment Units - Block E - Level 10

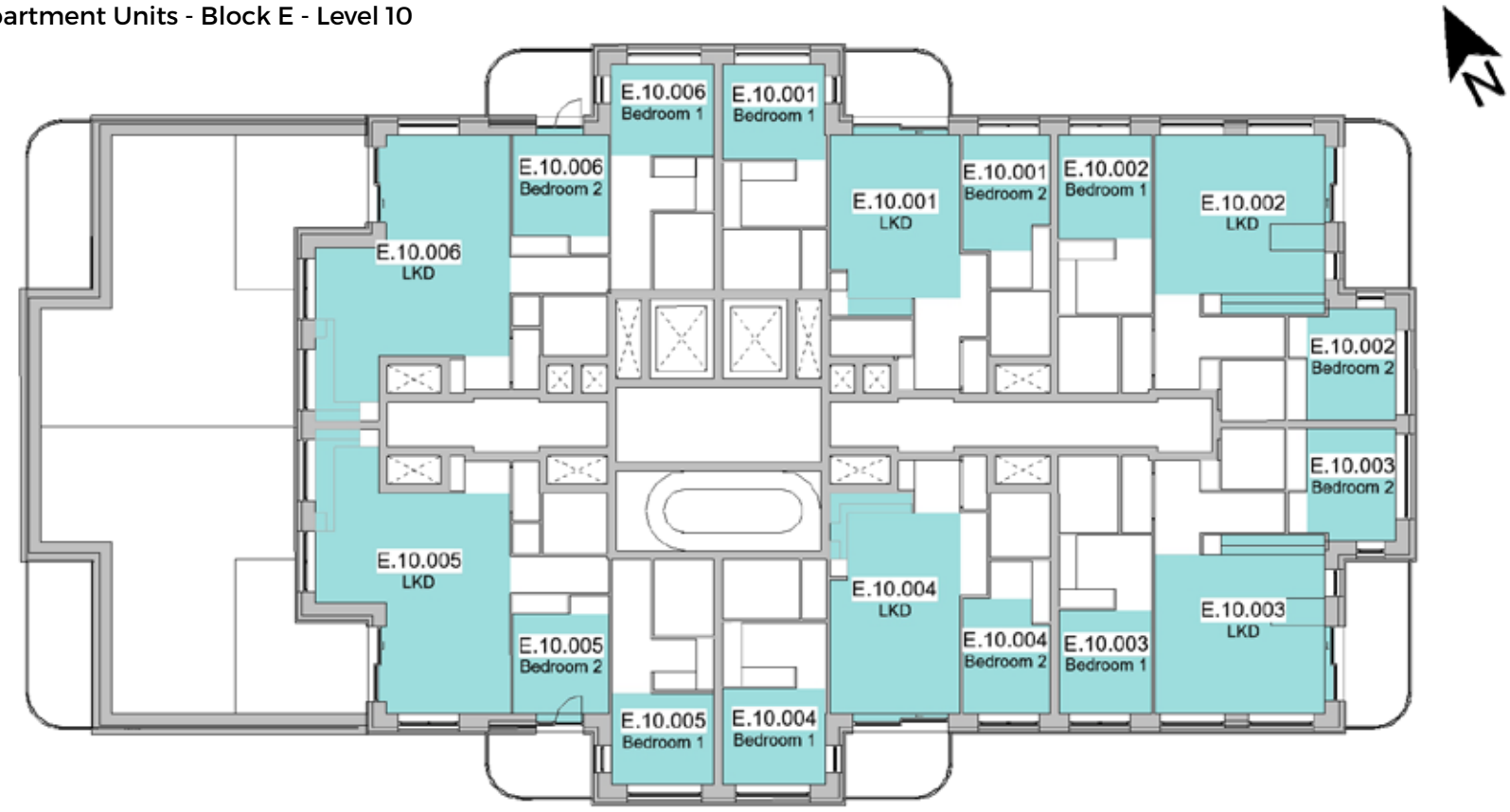


Figure C.39: Apartment Units - Block E - Level 11

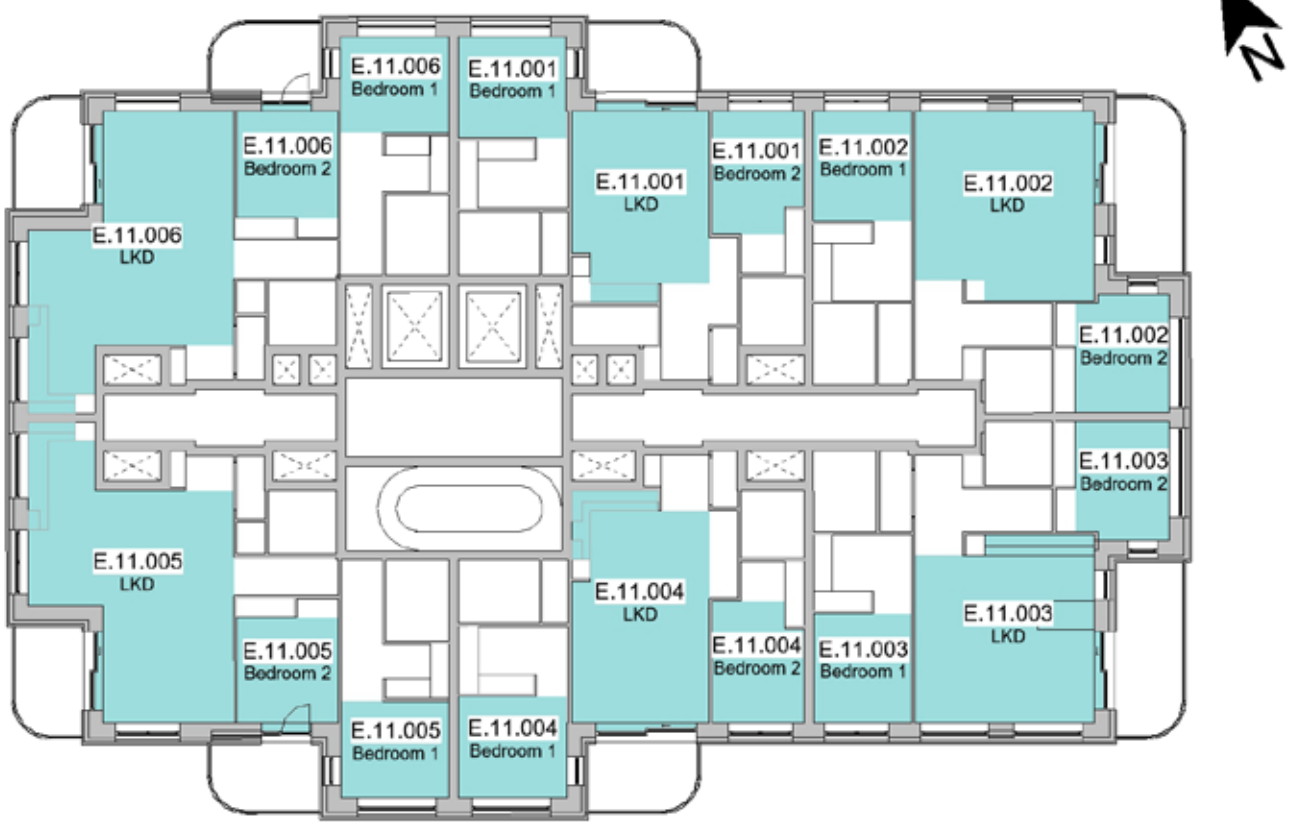

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Figure C.43: Apartment Units - Block E - Level 12

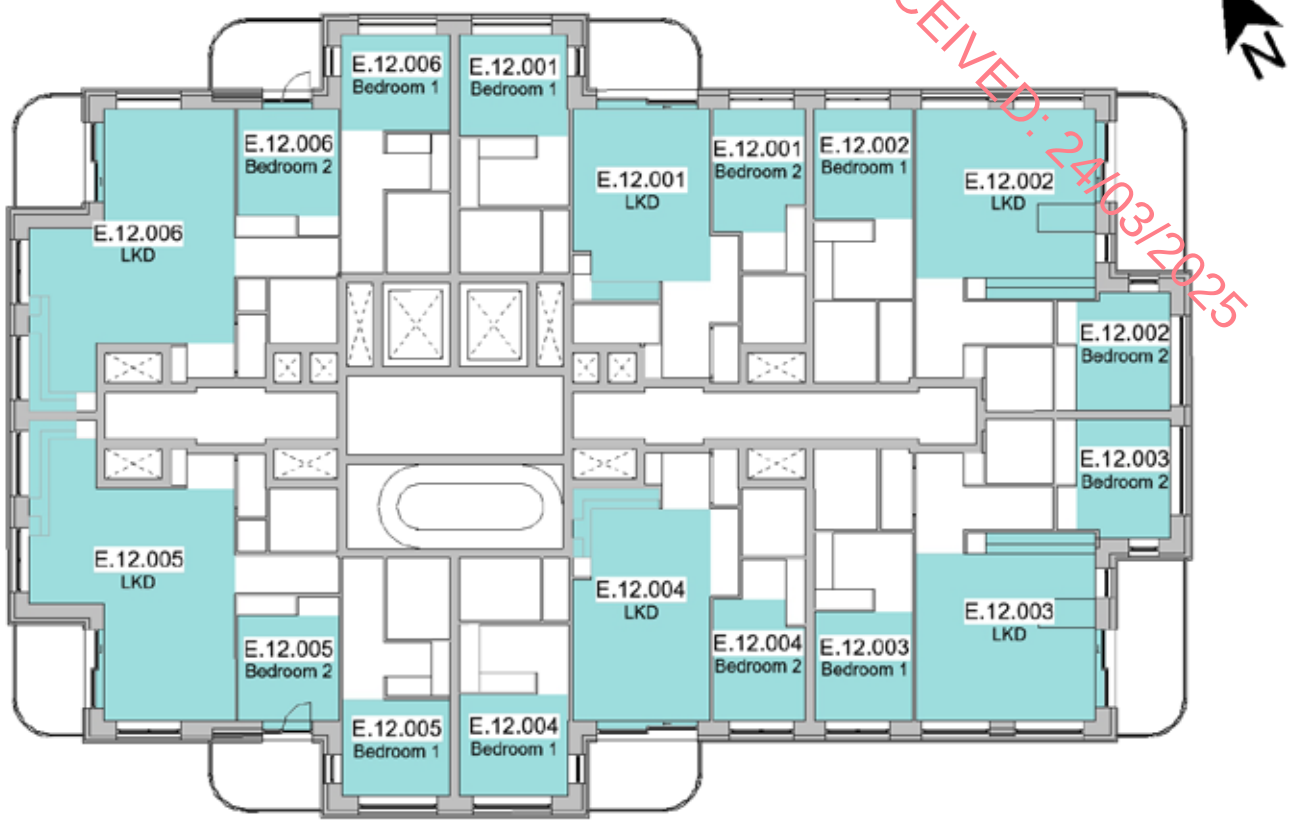
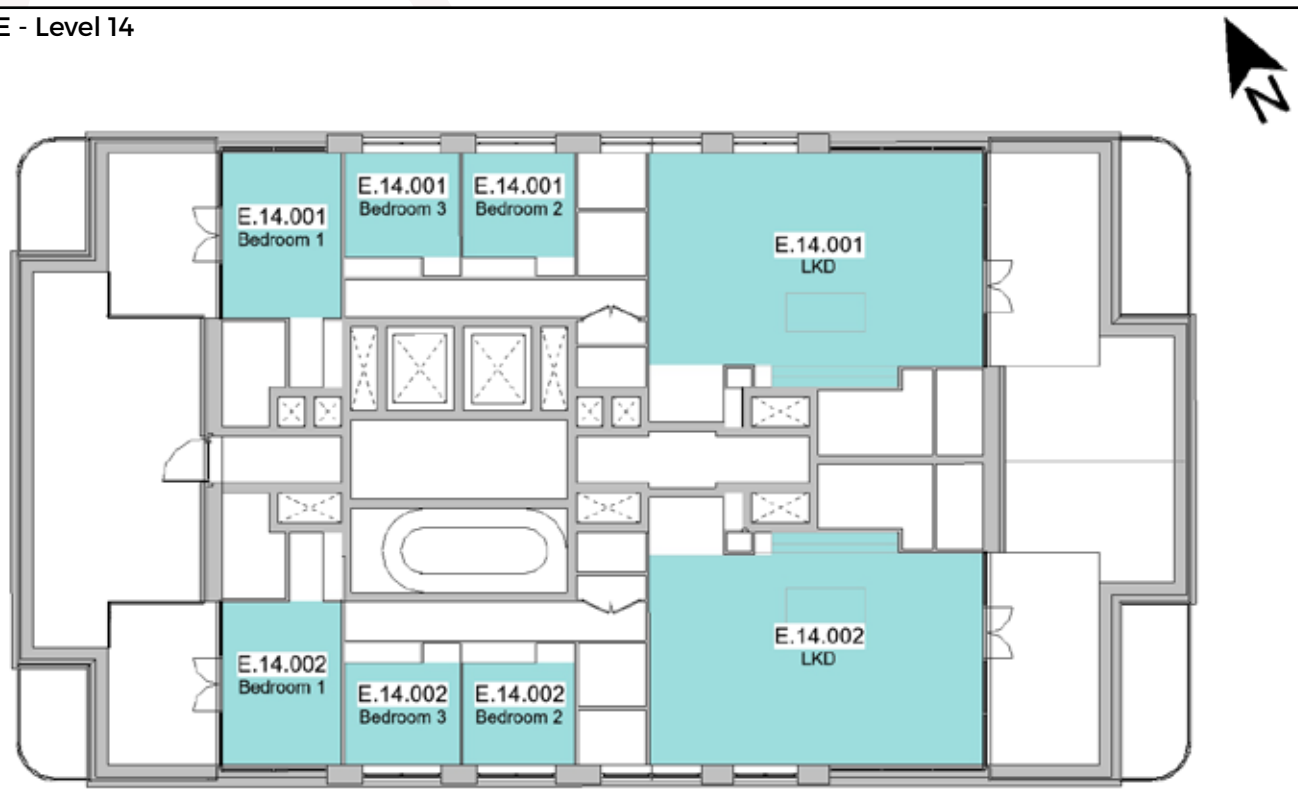



Figure C.41: Apartment Units - Block E - Level 13

Figure C.42: Apartment Units - Block E - Level 14



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## C.1.9 Proposed Apartment Floor Plans - Block H South

Figure C.44: Apartment Units - Block H South - Site Location

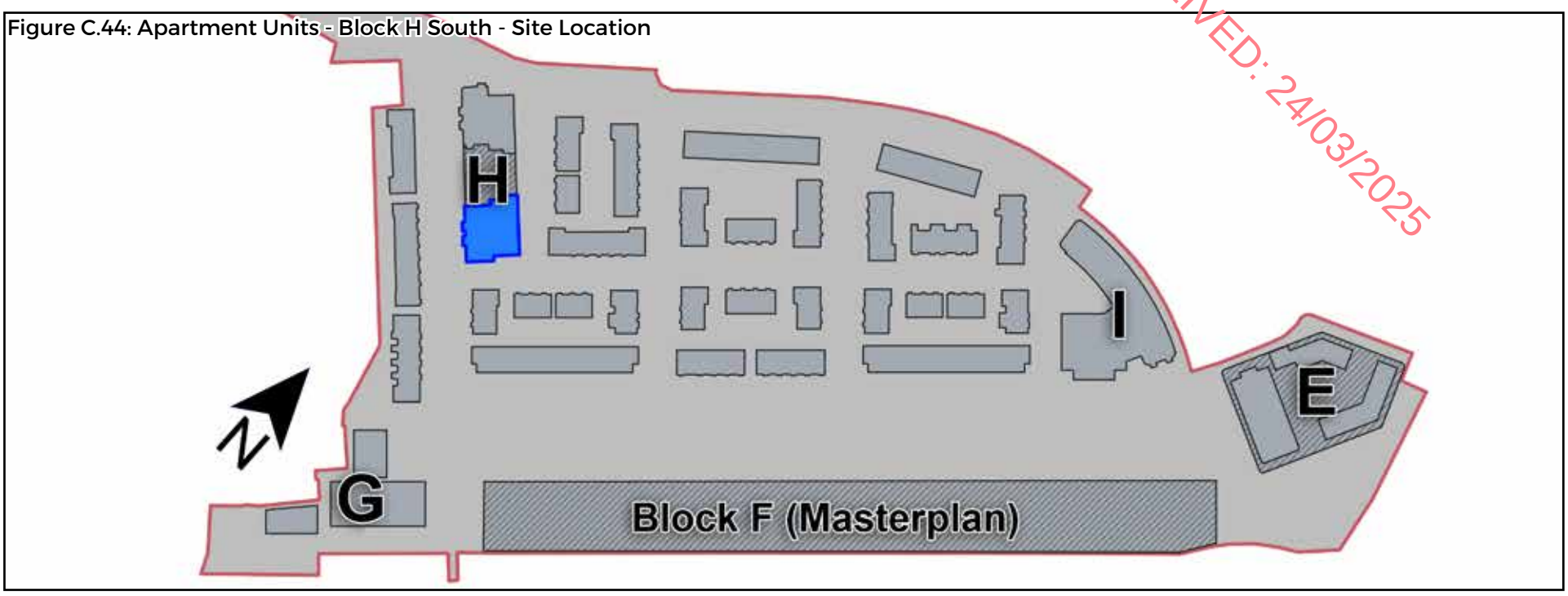


Figure C.45: Apartment Units - Block H South - Level 01

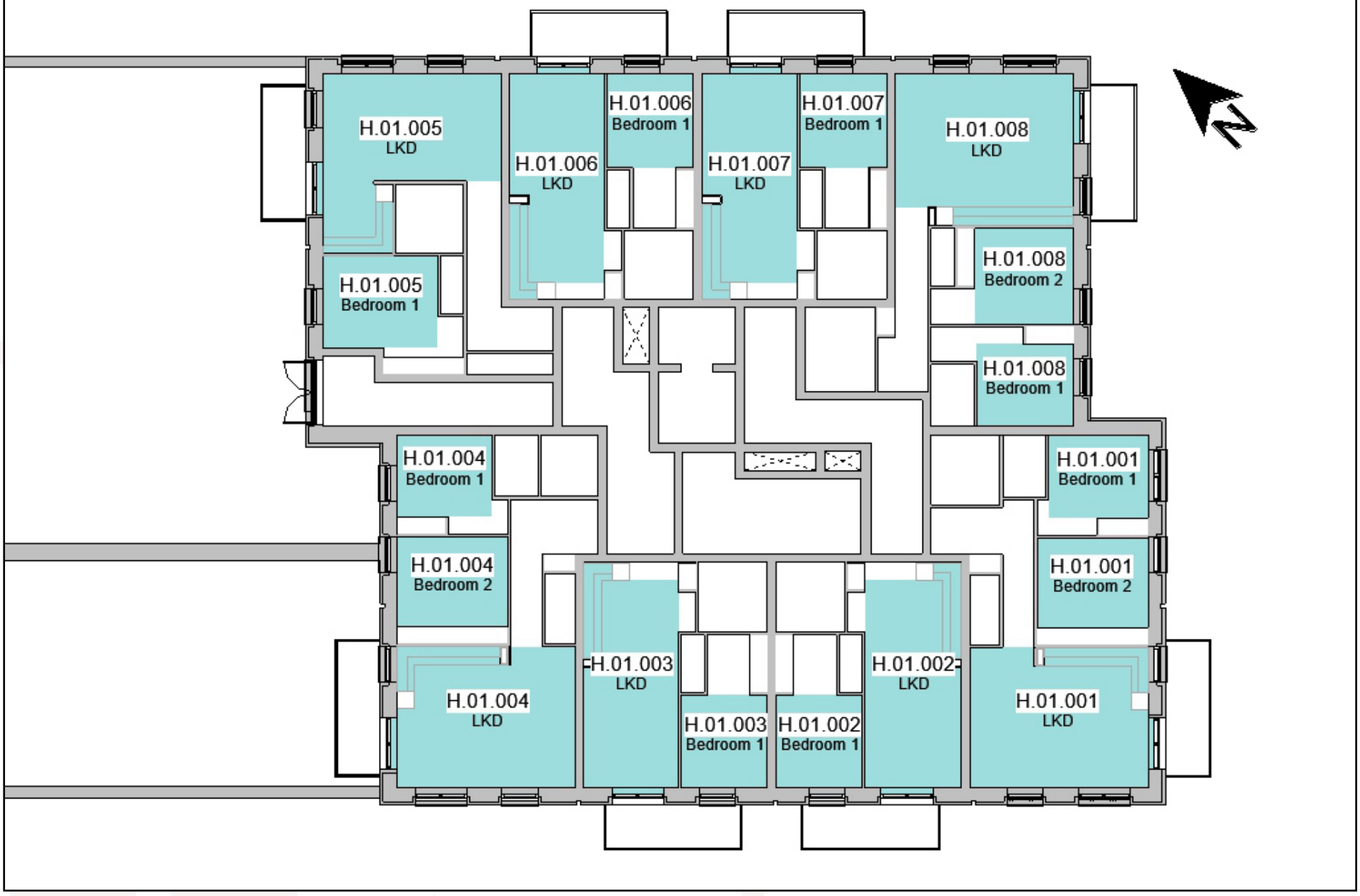

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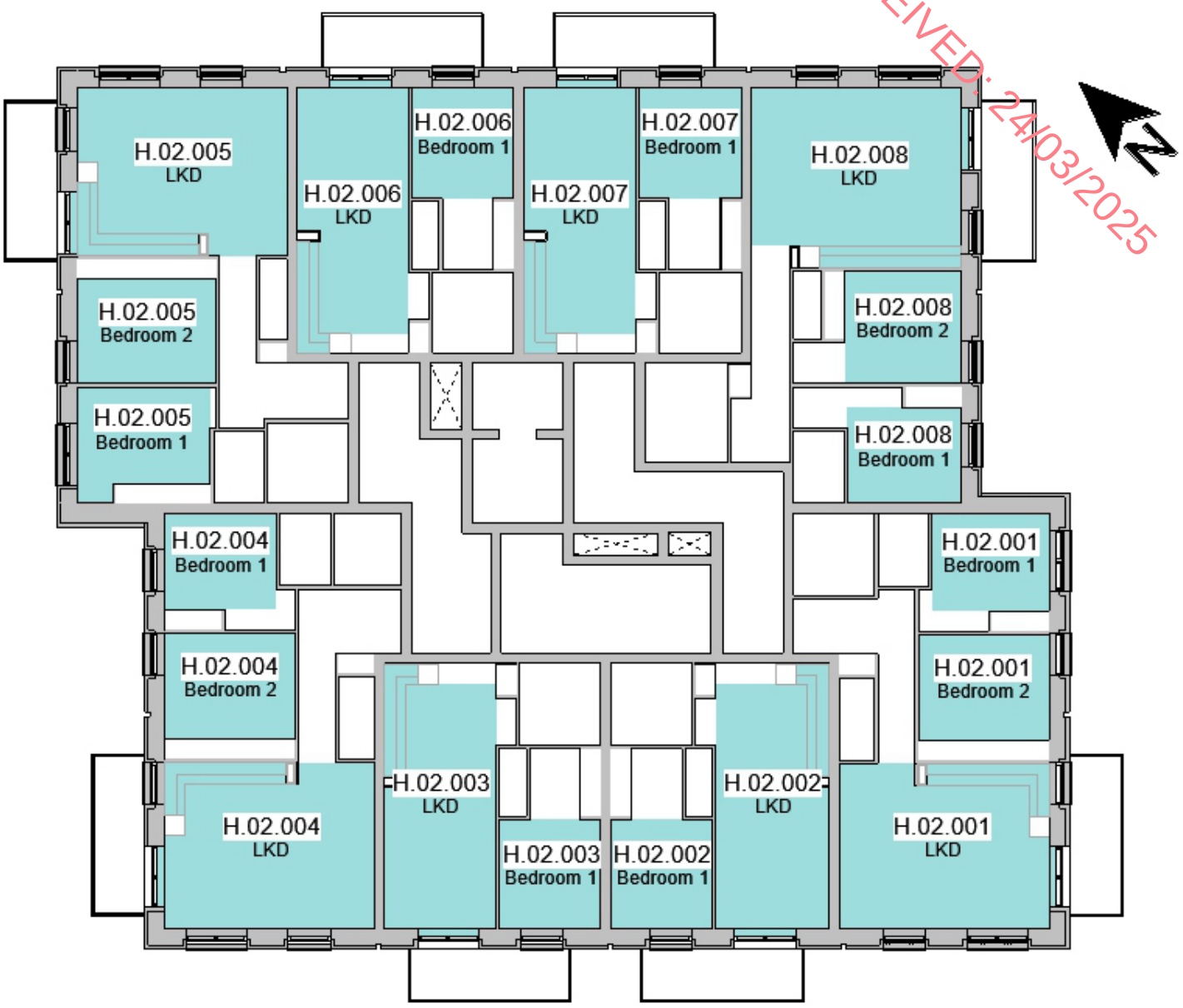
Figure C.46: Apartment Units - Block H South - Level 02



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## C.1.10 Proposed Apartment Floor Plans - Block H North

Figure C.47: Apartment Units - Block H North - Site Location

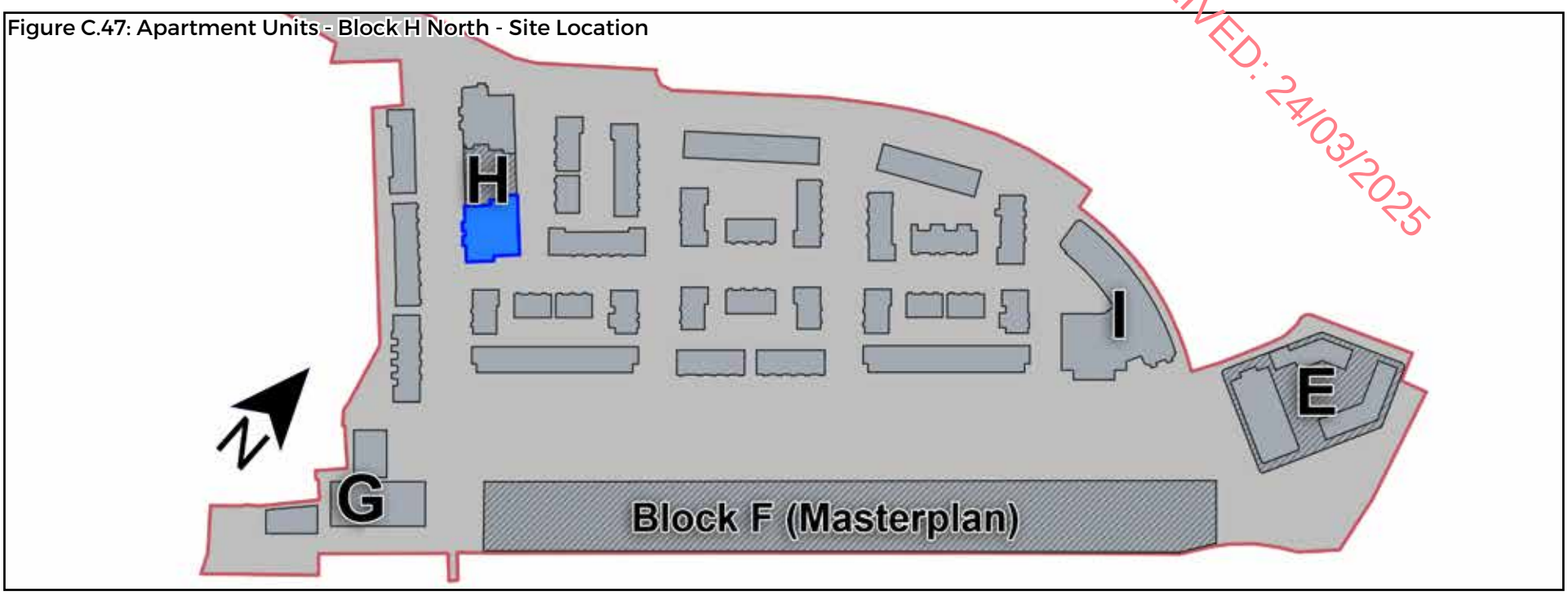


Figure C.48: Apartment Units - Block H North - Level 01

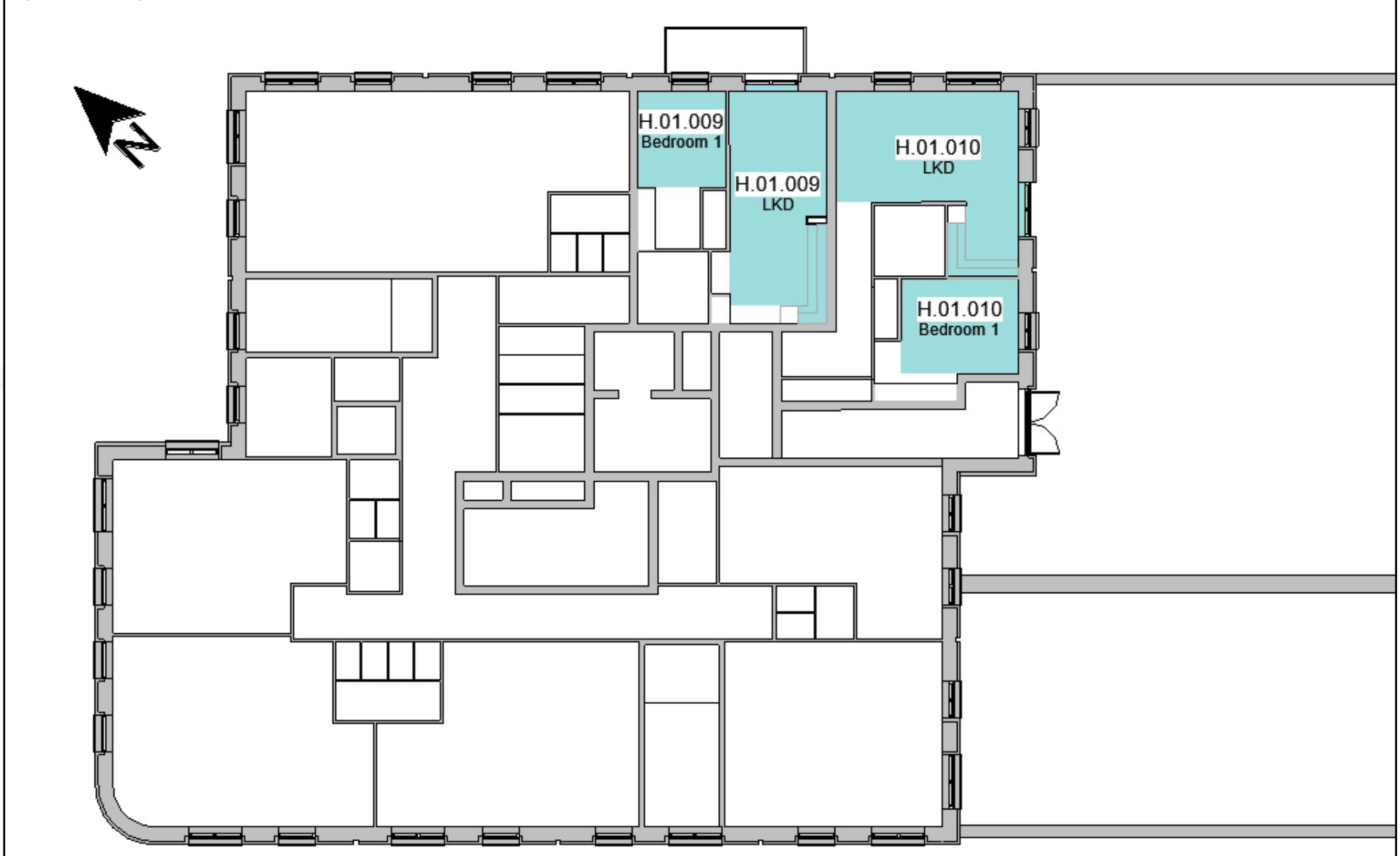

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Figure C.49: Apartment Units - Block H North - Level 02

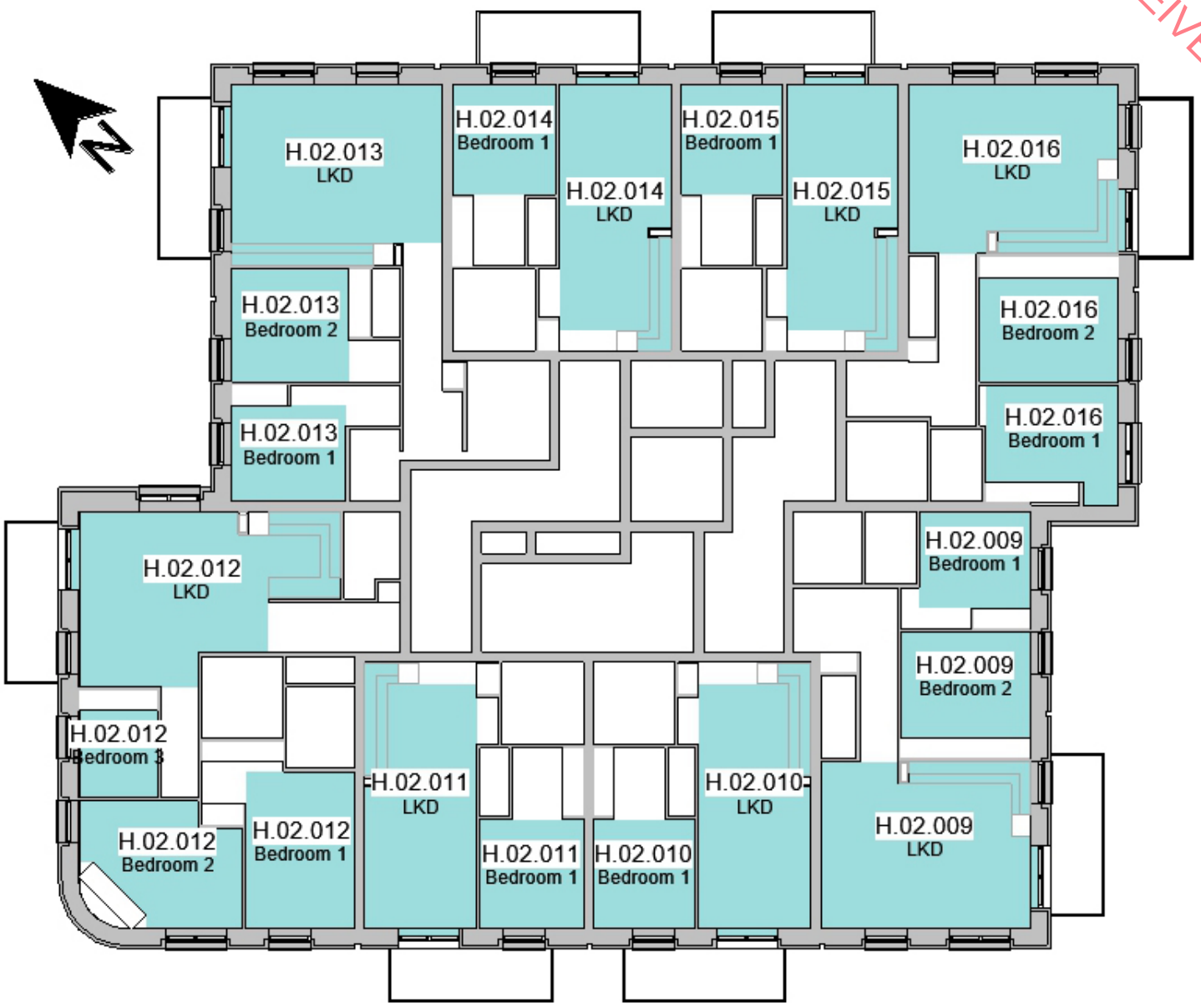
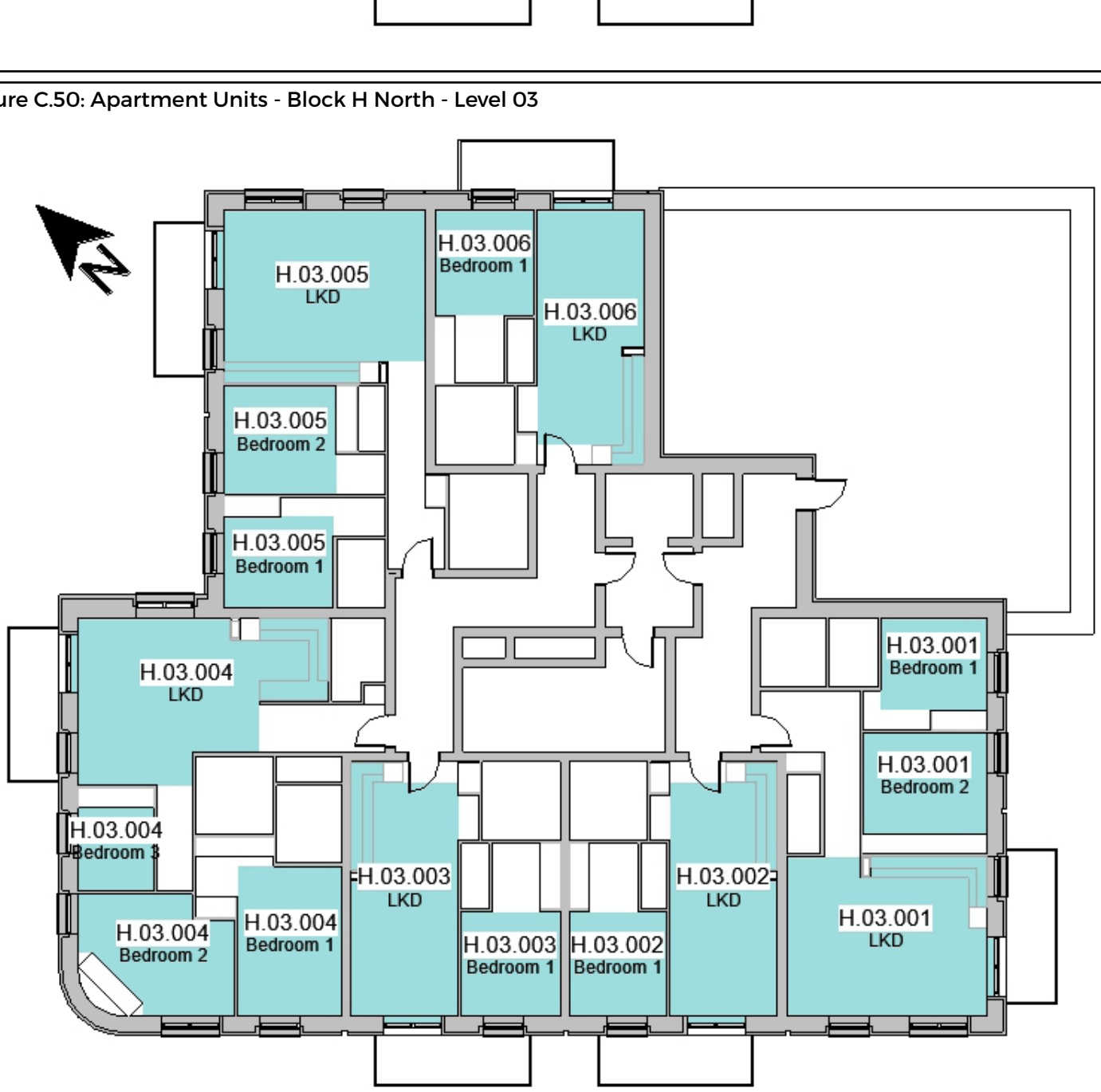



Figure C.50: Apartment Units - Block H North - Level 03



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## C.2 Spatial Daylight Autonomy (SDA) in Proposed Units

Below is an example of the table used to describe the spatial daylight autonomy results in proposed units.

| Table Example. C.2 - Scheme Performance SDA | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria |
| | | | Without Trees | With Trees | |
| **A** | **B** | **C** | **D** | **E** | **F** |

**A: Unit Number**

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

**B: Room Description**

*Room Description* details which room in the unit has been assessed, e.g. bedroom, LKD, etc.

**C: Target Lux**

Under BR 209 the appropriate target lux levels to be achieved across 50% of the working plane of a room differ depending on the room type. Kitchens have a target lux of 200, living rooms have a target lux of 150 and bedrooms have a target lux of 100. In a room providing more than one function, such as an LKD, the higher target value should be taken i.e. 200 Lux.

**D: % of area above target Lux (Without Trees)**

BR 209 recommends target lux levels to be achieved across at least 50% of the working plane for at least half the daylight hours. The target values differ depending on the room function, 200 lux for Kitchens, 150 lux for Living Rooms or 100 lux for Bedrooms.

This column states percentage of the working plane of the assessed room that is capable of receiving more than the appropriate target lux for at least half the daylight hours with trees excluded from the analytical model. The figures shown in this column should be considered part of a supplementary study that helps identify if trees are having an effect on daylight within the proposed units.

**E: % of area above target Lux (With Trees)**

BR 209 recommends target lux levels to be achieved across at least 50% of the working plane for at least half the daylight hours. The target values differ depending on the room function, 200 lux for Kitchens, 150 lux for Living Rooms or 100 lux for Bedrooms.

This column states percentage of the working plane of the assessed room that is capable of receiving more than the appropriate target lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions, i.e. full leaf and bare branch.

**F: Compliance with BR 209 Criteria**

This column states if the assessed room achieves the recommended level of daylight as per BR 209 with consideration to the various tree states.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, both with and without trees, this column will state: *'Compliant'*.

If the target lux level is not achieved across more than 50% of the working plane, for half the daylight hours, both with and without trees, this column will state: *'Non-compliant'*.

If the target lux level is achieved across more than 50% of the working plane, for half the daylight hours, without trees but is not achieved with trees, this column will state: *'Trees affecting compliance'*.

Compliance rates will be stated for SDA, both with and without trees.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## C.2.1 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

Table No. C.2.1 - SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 24A | LKD | 200 | 79% | 68% | Compliant |
| 24A | Bedroom 1 | 100 | 86% | 83% | Compliant |
| 24A | Bedroom 2 | 100 | 100% | 73% | Compliant |
| 24A | Study | 150 | 100% | 100% | Compliant |
| 25A | LKD | 200 | 51% | 51% | Compliant |
| 25A | Bedroom 1 | 100 | 95% | 95% | Compliant |
| 25A | Bedroom 2 | 100 | 100% | 91% | Compliant |
| 26A | LKD | 200 | 52% | 52% | Compliant |
| 26A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 26A | Bedroom 2 | 100 | 100% | 97% | Compliant |
| 27A | LKD | 200 | 52% | 52% | Compliant |
| 27A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 27A | Bedroom 2 | 100 | 99% | 82% | Compliant |
| 28A | LKD | 200 | 52% | 52% | Compliant |
| 28A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 28A | Bedroom 2 | 100 | 99% | 80% | Compliant |
| 29A | LKD | 200 | 53% | 53% | Compliant |
| 29A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 29A | Bedroom 2 | 100 | 98% | 91% | Compliant |
| 30A | LKD | 200 | 52% | 52% | Compliant |
| 30A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 30A | Bedroom 2 | 100 | 98% | 84% | Compliant |
| 31A | LKD | 200 | 58% | 57% | Compliant |
| 31A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 31A | Bedroom 2 | 100 | 100% | 98% | Compliant |
| 32A | LKD | 200 | 56% | 56% | Compliant |
| 32A | Bedroom 1 | 100 | 99% | 99% | Compliant |
| 32A | Bedroom 2 | 100 | 100% | 92% | Compliant |
| 33A | LKD | 200 | 64% | 61% | Compliant |
| 33A | Bedroom 1 | 100 | 77% | 75% | Compliant |
| 33A | Bedroom 2 | 100 | 100% | 93% | Compliant |
| 33A | Study | 150 | 100% | 74% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.2 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

Table No. C.2.2 - SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 24B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 24B | Living Room | 150 | 100% | 100% | Compliant |
| 25B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 25B | Living Room | 150 | 100% | 100% | Compliant |
| 26B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 26B | Living Room | 150 | 100% | 100% | Compliant |
| 27B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 27B | Living Room | 150 | 100% | 100% | Compliant |
| 28B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 28B | Living Room | 150 | 100% | 100% | Compliant |
| 29B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 29B | Living Room | 150 | 100% | 100% | Compliant |
| 30B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 30B | Living Room | 150 | 100% | 100% | Compliant |
| 31B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 31B | Living Room | 150 | 100% | 100% | Compliant |
| 32B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 32B | Living Room | 150 | 100% | 100% | Compliant |
| 33B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 33B | Living Room | 150 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.3 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

| Table No. C.2.3 - SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 24B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 24B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 24B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 25B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 25B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 25B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 26B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 26B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 26B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 27B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 27B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 27B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 28B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 28B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 28B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 29B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 29B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 29B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 30B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 30B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 30B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 31B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 31B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 31B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 32B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 32B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 32B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 33B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 33B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 33B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.4 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

| Table No. C.2.4 - SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 66A | LKD | 200 | 77% | 62% | Compliant |
| 66A | Bedroom 1 | 100 | 81% | 77% | Compliant |
| 66A | Bedroom 2 | 100 | 100% | 99% | Compliant |
| 66A | Study | 150 | 100% | 100% | Compliant |
| 67A | LKD | 200 | 52% | 52% | Compliant |
| 67A | Bedroom 1 | 100 | 93% | 91% | Compliant |
| 67A | Bedroom 2 | 100 | 94% | 75% | Compliant |
| 68A | LKD | 200 | 53% | 53% | Compliant |
| 68A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 68A | Bedroom 2 | 100 | 97% | 85% | Compliant |
| 69A | LKD | 200 | 50% | 50% | Compliant |
| 69A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 69A | Bedroom 2 | 100 | 94% | 78% | Compliant |
| 70A | LKD | 200 | 52% | 52% | Compliant |
| 70A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 70A | Bedroom 2 | 100 | 99% | 88% | Compliant |
| 71A | LKD | 200 | 52% | 52% | Compliant |
| 71A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 71A | Bedroom 2 | 100 | 100% | 98% | Compliant |
| 72A | LKD | 200 | 52% | 52% | Compliant |
| 72A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 72A | Bedroom 2 | 100 | 100% | 97% | Compliant |
| 73A | LKD | 200 | 58% | 58% | Compliant |
| 73A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 73A | Bedroom 2 | 100 | 100% | 90% | Compliant |
| 74A | LKD | 200 | 55% | 55% | Compliant |
| 74A | Bedroom 1 | 100 | 99% | 99% | Compliant |
| 74A | Bedroom 2 | 100 | 100% | 84% | Compliant |
| 75A | LKD | 200 | 60% | 58% | Compliant |
| 75A | Bedroom 1 | 100 | 74% | 74% | Compliant |
| 75A | Bedroom 2 | 100 | 100% | 82% | Compliant |
| 75A | Study | 150 | 100% | 88% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.5 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

Table No. C.2.5 - SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 66B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 66B | Living Room | 150 | 100% | 100% | Compliant |
| 67B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 67B | Living Room | 150 | 100% | 100% | Compliant |
| 68B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 68B | Living Room | 150 | 100% | 100% | Compliant |
| 69B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 69B | Living Room | 150 | 100% | 100% | Compliant |
| 70B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 70B | Living Room | 150 | 100% | 100% | Compliant |
| 71B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 71B | Living Room | 150 | 100% | 100% | Compliant |
| 72B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 72B | Living Room | 150 | 100% | 100% | Compliant |
| 73B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 73B | Living Room | 150 | 100% | 100% | Compliant |
| 74B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 74B | Living Room | 150 | 100% | 100% | Compliant |
| 75B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 75B | Living Room | 150 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.6 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

Table No. C.2.6 - SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 66B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 66B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 66B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 67B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 67B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 67B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 68B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 68B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 68B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 69B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 69B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 69B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 70B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 70B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 70B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 71B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 71B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 71B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 72B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 72B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 72B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 73B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 73B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 73B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 74B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 74B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 74B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 75B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 75B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 75B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.7 SDA Results: Duplex Type RD3 - Various Units

Table No. C.2.7 - SDA Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 1A | LKD | 200 | 100% | 99% | Compliant |
| 1A | Bedroom 1 | 100 | 100% | 91% | Compliant |
| 1A | Bedroom 2 | 100 | 100% | 87% | Compliant |
| 1B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 1B | Living Room | 150 | 100% | 100% | Compliant |
| 1B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 1B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 1B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 6A | LKD | 200 | 100% | 100% | Compliant |
| 6A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 6A | Bedroom 2 | 100 | 96% | 76% | Compliant |
| 6B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 6B | Living Room | 150 | 100% | 100% | Compliant |
| 6B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 6B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 6B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 15A | LKD | 200 | 98% | 98% | Compliant |
| 15A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 15A | Bedroom 2 | 100 | 100% | 99% | Compliant |
| 15B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 15B | Living Room | 150 | 100% | 100% | Compliant |
| 15B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 15B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 15B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 20A | LKD | 200 | 100% | 100% | Compliant |
| 20A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 20A | Bedroom 2 | 100 | 100% | 99% | Compliant |
| 20B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 20B | Living Room | 150 | 100% | 100% | Compliant |
| 20B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 20B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 20B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 21A | LKD | 200 | 63% | 62% | Compliant |
| 21A | Bedroom 1 | 100 | 63% | 62% | Compliant |
| 21A | Bedroom 2 | 100 | 100% | 97% | Compliant |
| 21B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 21B | Living Room | 150 | 100% | 100% | Compliant |
| 21B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 21B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 21B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.8 SDA Results: Duplex Type RD3 - Various Units

Table No. C.2.8 - SDA Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 36A | LKD | 200 | 90% | 90% | Compliant |
| 36A | Bedroom 1 | 100 | 90% | 90% | Compliant |
| 36A | Bedroom 2 | 100 | 100% | 86% | Compliant |
| 36B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 36B | Living Room | 150 | 100% | 100% | Compliant |
| 36B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 36B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 36B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 43A | LKD | 200 | 87% | 87% | Compliant |
| 43A | Bedroom 1 | 100 | 72% | 67% | Compliant |
| 43A | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 43B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 43B | Living Room | 150 | 100% | 100% | Compliant |
| 43B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 43B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 43B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 58A | LKD | 200 | 92% | 91% | Compliant |
| 58A | Bedroom 1 | 100 | 91% | 87% | Compliant |
| 58A | Bedroom 2 | 100 | 100% | 96% | Compliant |
| 58B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 58B | Living Room | 150 | 100% | 100% | Compliant |
| 58B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 58B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 58B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 63A | LKD | 200 | 66% | 65% | Compliant |
| 63A | Bedroom 1 | 100 | 61% | 61% | Compliant |
| 63A | Bedroom 2 | 100 | 100% | 98% | Compliant |
| 63B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 63B | Living Room | 150 | 100% | 100% | Compliant |
| 63B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 63B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 63B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 78A | LKD | 200 | 91% | 91% | Compliant |
| 78A | Bedroom 1 | 100 | 91% | 91% | Compliant |
| 78A | Bedroom 2 | 100 | 93% | 58% | Compliant |
| 78B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 78B | Living Room | 150 | 100% | 100% | Compliant |
| 78B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 78B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 78B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.9 SDA Results: Duplex Type RD3 - Various Units

Table No. C.2.9 - SDA Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
|---|---|---|---|---|---|
| | | | Without Trees*** | With Trees** | |
| 89A | LKD | 200 | 83% | 74% | Compliant |
| 89A | Bedroom 1 | 100 | 73% | 62% | Compliant |
| 89A | Bedroom 2 | 100 | 100% | 99% | Compliant |
| 89B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 89B | Living Room | 150 | 100% | 100% | Compliant |
| 89B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 89B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 89B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 95A | LKD | 200 | 100% | 100% | Compliant |
| 95A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 95A | Bedroom 2 | 100 | 99% | 86% | Compliant |
| 95B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 95B | Living Room | 150 | 100% | 100% | Compliant |
| 95B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 95B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 95B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 106A | LKD | 200 | 94% | 93% | Compliant |
| 106A | Bedroom 1 | 100 | 97% | 76% | Compliant |
| 106A | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 106B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 106B | Living Room | 150 | 100% | 100% | Compliant |
| 106B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 106B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 106B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 109A | LKD | 200 | 85% | 78% | Compliant |
| 109A | Bedroom 1 | 100 | 69% | 62% | Compliant |
| 109A | Bedroom 2 | 100 | 100% | 98% | Compliant |
| 109B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 109B | Living Room | 150 | 100% | 100% | Compliant |
| 109B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 109B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 109B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 114A | LKD | 200 | 98% | 96% | Compliant |
| 114A | Bedroom 1 | 100 | 91% | 89% | Compliant |
| 114A | Bedroom 2 | 100 | 100% | 94% | Compliant |
| 114B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 114B | Living Room | 150 | 100% | 100% | Compliant |
| 114B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 114B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 114B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.10 SDA Results: Duplex Type RD3 - Various Units

| Table No. C.2.10 - SDA Results: Duplex Type RD3 - Various Units | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 127A | LKD | 200 | 93% | 91% | Compliant |
| 127A | Bedroom 1 | 100 | 91% | 82% | Compliant |
| 127A | Bedroom 2 | 100 | 100% | 96% | Compliant |
| 127B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 127B | Living Room | 150 | 100% | 100% | Compliant |
| 127B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 127B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 127B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 134A | LKD | 200 | 71% | 70% | Compliant |
| 134A | Bedroom 1 | 100 | 72% | 68% | Compliant |
| 134A | Bedroom 2 | 100 | 100% | 79% | Compliant |
| 134B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 134B | Living Room | 150 | 100% | 100% | Compliant |
| 134B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 134B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 134B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 140A | LKD | 200 | 59% | 59% | Compliant |
| 140A | Bedroom 1 | 100 | 69% | 66% | Compliant |
| 140A | Bedroom 2 | 100 | 100% | 91% | Compliant |
| 140B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 140B | Living Room | 150 | 100% | 100% | Compliant |
| 140B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 140B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 140B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 147A | LKD | 200 | 98% | 98% | Compliant |
| 147A | Bedroom 1 | 100 | 98% | 94% | Compliant |
| 147A | Bedroom 2 | 100 | 99% | 99% | Compliant |
| 147B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 147B | Living Room | 150 | 100% | 100% | Compliant |
| 147B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 147B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 147B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.11 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

| Table No. C.2.11 - SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 100A | LKD | 200 | 100% | 99% | Compliant |
| 100A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 100A | Bedroom 2 | 100 | 99% | 74% | Compliant |
| 101A | LKD | 200 | 100% | 100% | Compliant |
| 101A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 101A | Bedroom 2 | 100 | 99% | 61% | Compliant |
| 102A | LKD | 200 | 100% | 100% | Compliant |
| 102A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 102A | Bedroom 2 | 100 | 99% | 99% | Compliant |
| 103A | LKD | 200 | 100% | 100% | Compliant |
| 103A | Bedroom 1 | 100 | 99% | 99% | Compliant |
| 103A | Bedroom 2 | 100 | 99% | 86% | Compliant |
| 104A | LKD | 200 | 97% | 97% | Compliant |
| 104A | Bedroom 1 | 100 | 99% | 99% | Compliant |
| 104A | Bedroom 2 | 100 | 99% | 99% | Compliant |
| 105A | LKD | 200 | 96% | 95% | Compliant |
| 105A | Bedroom 1 | 100 | 87% | 79% | Compliant |
| 105A | Bedroom 2 | 100 | 99% | 86% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.12 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

| Table No. C.2.12 - SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 100B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 100B | Living Room | 150 | 100% | 100% | Compliant |
| 101B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 101B | Living Room | 150 | 100% | 100% | Compliant |
| 102B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 102B | Living Room | 150 | 100% | 100% | Compliant |
| 103B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 103B | Living Room | 150 | 100% | 100% | Compliant |
| 104B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 104B | Living Room | 150 | 100% | 100% | Compliant |
| 105B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 105B | Living Room | 150 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.13 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02

| Table No. C.2.13 - SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 100B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 100B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 100B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 101B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 101B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 101B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 102B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 102B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 102B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 103B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 103B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 103B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 104B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 104B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 104B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 105B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 105B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 105B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.14 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00

| Table No. C.2.14 - SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 119A | LKD | 200 | 87% | 87% | Compliant |
| 119A | Bedroom 1 | 100 | 60% | 59% | Compliant |
| 119A | Bedroom 2 | 100 | 99% | 90% | Compliant |
| 120A | LKD | 200 | 100% | 100% | Compliant |
| 120A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 120A | Bedroom 2 | 100 | 99% | 66% | Compliant |
| 121A | LKD | 200 | 100% | 100% | Compliant |
| 121A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 121A | Bedroom 2 | 100 | 99% | 61% | Compliant |
| 122A | LKD | 200 | 100% | 100% | Compliant |
| 122A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 122A | Bedroom 2 | 100 | 99% | 98% | Compliant |
| 123A | LKD | 200 | 100% | 100% | Compliant |
| 123A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 123A | Bedroom 2 | 100 | 99% | 60% | Compliant |
| 124A | LKD | 200 | 100% | 100% | Compliant |
| 124A | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 124A | Bedroom 2 | 100 | 99% | 70% | Compliant |
| 125A | LKD | 200 | 100% | 98% | Compliant |
| 125A | Bedroom 1 | 100 | 100% | 95% | Compliant |
| 125A | Bedroom 2 | 100 | 99% | 58% | Compliant |
| 126A | LKD | 200 | 100% | 99% | Compliant |
| 126A | Bedroom 1 | 100 | 97% | 91% | Compliant |
| 126A | Bedroom 2 | 100 | 99% | 98% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.15 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

| Table No. C.2.15 - SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 119B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 119B | Living Room | 150 | 100% | 100% | Compliant |
| 120B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 120B | Living Room | 150 | 100% | 100% | Compliant |
| 121B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 121B | Living Room | 150 | 100% | 100% | Compliant |
| 122B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 122B | Living Room | 150 | 100% | 100% | Compliant |
| 123B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 123B | Living Room | 150 | 100% | 100% | Compliant |
| 124B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 124B | Living Room | 150 | 100% | 100% | Compliant |
| 125B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 125B | Living Room | 150 | 100% | 100% | Compliant |
| 126B | Kitchen/Dining | 200 | 100% | 100% | Compliant |
| 126B | Living Room | 150 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.16 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

| Table No. C.2.16 - SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| 119B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 119B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 119B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 120B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 120B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 120B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 121B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 121B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 121B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 122B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 122B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 122B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 123B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 123B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 123B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 124B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 124B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 124B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 125B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 125B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 125B | Bedroom 3 | 100 | 100% | 100% | Compliant |
| 126B | Bedroom 1 | 100 | 100% | 100% | Compliant |
| 126B | Bedroom 2 | 100 | 100% | 100% | Compliant |
| 126B | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.17 SDA Results: Block E - Duplex and Triplex Units - Level 01

| Table No. C.2.17 - SDA Results: Block E - Duplex and Triplex Units - Level 01 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.01.009 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.009 | Living Room | 150 | 93% | 86% | Compliant |
| E.01.010 | Kitchen | 200 | 88% | 86% | Compliant |
| E.01.010 | Living Room | 150 | 100% | 100% | Compliant |
| E.01.011 | Kitchen | 200 | 74% | 73% | Compliant |
| E.01.011 | Living Room | 150 | 76% | 59% | Compliant |
| E.01.012 | Kitchen | 200 | 95% | 95% | Compliant |
| E.01.012 | Living Room | 150 | 83% | 80% | Compliant |
| E.01.013 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.013 | Living Room | 150 | 92% | 89% | Compliant |
| E.01.014 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.014 | Living Room | 150 | 75% | 65% | Compliant |
| E.01.015 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.015 | Living Room | 150 | 83% | 80% | Compliant |
| E.01.016 | Kitchen | 200 | 100% | 99% | Compliant |
| E.01.016 | Study | 150 | 64% | 64% | Compliant |
| E.01.017 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.017 | Study | 150 | 64% | 64% | Compliant |
| E.01.018 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.018 | Living Room | 150 | 92% | 88% | Compliant |
| E.01.019 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.019 | Living Room | 150 | 95% | 71% | Compliant |
| E.01.020 | Kitchen | 200 | 100% | 100% | Compliant |
| E.01.020 | Living Room | 150 | 90% | 61% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.18 SDA Results: Block E - Duplex and Triplex Units - Level 02

| Table No. C.2.18 - SDA Results: Block E - Duplex and Triplex Units - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.01.009 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.009 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.009 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.010 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.010 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.010 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.011 | Bedroom 2 | 100 | 93% | 89% | Compliant |
| E.01.011 | Bedroom 3 | 100 | 99% | 99% | Compliant |
| E.01.011 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.012 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.012 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.012 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.013 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.013 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.013 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.014 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.014 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.014 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.015 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.015 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.015 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.016 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.016 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.016 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.017 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.017 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.017 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.018 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.018 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.018 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.019 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.019 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.01.019 | Bedroom 4 | 100 | 100% | 100% | Compliant |
| E.01.020 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.020 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.020 | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.19 SDA Results: Block E - Duplex and Triplex Units - Level 03

| Table No. C.2.19 - SDA Results: Block E - Duplex and Triplex Units - Level 03 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.01.009 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.009 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.010 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.010 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.011 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.011 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.012 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.012 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.014 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.014 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.016 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.016 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.017 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.017 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.019 | Living Room_U | 150 | 100% | 100% | Compliant |
| E.01.019 | Bedroom 1 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.20 SDA Results: Block E - Apartment Units - Level 01

| Table No. C.2.20 - SDA Results: Block E - Apartment Units - Level 01 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.01.001 | LKD | 200 | 99% | 99% | Compliant |
| E.01.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.002 | LKD | 200 | 100% | 100% | Compliant |
| E.01.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.003 | LKD | 200 | 71% | 69% | Compliant |
| E.01.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.004 | LKD | 200 | 67% | 66% | Compliant |
| E.01.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.01.005 | LKD | 200 | 100% | 100% | Compliant |
| E.01.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.006 | LKD | 200 | 60% | 60% | Compliant |
| E.01.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.007 | LKD | 200 | 99% | 99% | Compliant |
| E.01.007 | Bedroom 1 | 100 | 97% | 95% | Compliant |
| E.01.008 | LKD | 200 | 41% | 41% | Non-compliant |
| E.01.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.01.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.21 SDA Results: Block E - Apartment Units - Level 02

| Table No. C.2.21 - SDA Results: Block E - Apartment Units - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.02.001 | LKD | 200 | 56% | 55% | Compliant |
| E.02.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.02.002 | LKD | 200 | 100% | 100% | Compliant |
| E.02.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.02.003 | LKD | 200 | 100% | 100% | Compliant |
| E.02.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.02.004 | LKD | 200 | 74% | 73% | Compliant |
| E.02.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.02.005 | LKD | 200 | 70% | 69% | Compliant |
| E.02.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.02.006 | LKD | 200 | 100% | 100% | Compliant |
| E.02.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.007 | LKD | 200 | 68% | 67% | Compliant |
| E.02.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.008 | LKD | 200 | 100% | 100% | Compliant |
| E.02.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.009 | LKD | 200 | 50% | 50% | Compliant |
| E.02.009 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.02.009 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.22 SDA Results: Block E - Apartment Units - Level 03

| Table No. C.2.22 - SDA Results: Block E - Apartment Units - Level 03 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.03.001 | LKD | 200 | 73% | 73% | Compliant |
| E.03.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.03.002 | LKD | 200 | 100% | 100% | Compliant |
| E.03.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.03.003 | LKD | 200 | 100% | 100% | Compliant |
| E.03.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.03.004 | LKD | 200 | 77% | 75% | Compliant |
| E.03.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.03.005 | LKD | 200 | 74% | 73% | Compliant |
| E.03.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.03.006 | LKD | 200 | 100% | 100% | Compliant |
| E.03.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.007 | LKD | 200 | 95% | 95% | Compliant |
| E.03.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.008 | LKD | 200 | 100% | 100% | Compliant |
| E.03.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.009 | LKD | 200 | 64% | 63% | Compliant |
| E.03.009 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.03.009 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.23 SDA Results: Block E - Apartment Units - Level 04

| Table No. C.2.23 - SDA Results: Block E - Apartment Units - Level 04 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.04.001 | LKD | 200 | 81% | 81% | Compliant |
| E.04.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.002 | LKD | 200 | 100% | 100% | Compliant |
| E.04.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.003 | LKD | 200 | 100% | 100% | Compliant |
| E.04.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.004 | LKD | 200 | 80% | 79% | Compliant |
| E.04.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.005 | LKD | 200 | 76% | 75% | Compliant |
| E.04.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.006 | LKD | 200 | 100% | 100% | Compliant |
| E.04.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.007 | LKD | 200 | 100% | 100% | Compliant |
| E.04.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.04.008 | LKD | 200 | 74% | 74% | Compliant |
| E.04.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.04.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.24 SDA Results: Block E - Apartment Units - Level 05

| Table No. C.2.24 - SDA Results: Block E - Apartment Units - Level 05 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.05.001 | LKD | 200 | 91% | 90% | Compliant |
| E.05.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.002 | LKD | 200 | 100% | 100% | Compliant |
| E.05.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.003 | LKD | 200 | 100% | 100% | Compliant |
| E.05.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.004 | LKD | 200 | 82% | 81% | Compliant |
| E.05.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.005 | LKD | 200 | 78% | 78% | Compliant |
| E.05.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.006 | LKD | 200 | 100% | 100% | Compliant |
| E.05.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.007 | LKD | 200 | 100% | 100% | Compliant |
| E.05.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.05.008 | LKD | 200 | 79% | 78% | Compliant |
| E.05.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.05.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.25 SDA Results: Block E - Apartment Units - Level 06

| Table No. C.2.25 - SDA Results: Block E - Apartment Units - Level 06 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.06.001 | LKD | 200 | 94% | 94% | Compliant |
| E.06.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.002 | LKD | 200 | 100% | 100% | Compliant |
| E.06.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.003 | LKD | 200 | 100% | 100% | Compliant |
| E.06.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.004 | LKD | 200 | 86% | 85% | Compliant |
| E.06.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.005 | LKD | 200 | 81% | 81% | Compliant |
| E.06.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.006 | LKD | 200 | 100% | 100% | Compliant |
| E.06.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.007 | LKD | 200 | 100% | 100% | Compliant |
| E.06.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.06.008 | LKD | 200 | 85% | 85% | Compliant |
| E.06.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.06.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.26 SDA Results: Block E - Apartment Units - Level 07

| Table No. C.2.26 - SDA Results: Block E - Apartment Units - Level 07 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.07.001 | LKD | 200 | 95% | 95% | Compliant |
| E.07.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.002 | LKD | 200 | 100% | 100% | Compliant |
| E.07.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.003 | LKD | 200 | 100% | 100% | Compliant |
| E.07.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.004 | LKD | 200 | 89% | 87% | Compliant |
| E.07.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.005 | LKD | 200 | 83% | 83% | Compliant |
| E.07.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.006 | LKD | 200 | 100% | 100% | Compliant |
| E.07.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.007 | LKD | 200 | 100% | 100% | Compliant |
| E.07.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.07.008 | LKD | 200 | 91% | 91% | Compliant |
| E.07.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.07.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.27 SDA Results: Block E - Apartment Units - Level 08

| Table No. C.2.27 - SDA Results: Block E - Apartment Units - Level 08 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.08.001 | LKD | 200 | 95% | 95% | Compliant |
| E.08.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.002 | LKD | 200 | 100% | 100% | Compliant |
| E.08.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.003 | LKD | 200 | 100% | 100% | Compliant |
| E.08.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.004 | LKD | 200 | 92% | 90% | Compliant |
| E.08.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.005 | LKD | 200 | 86% | 85% | Compliant |
| E.08.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.006 | LKD | 200 | 100% | 100% | Compliant |
| E.08.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.007 | LKD | 200 | 100% | 100% | Compliant |
| E.08.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.08.008 | LKD | 200 | 92% | 92% | Compliant |
| E.08.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.08.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.28 SDA Results: Block E - Apartment Units - Level 09

| Table No. C.2.28 - SDA Results: Block E - Apartment Units - Level 09 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.09.001 | LKD | 200 | 96% | 96% | Compliant |
| E.09.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.002 | LKD | 200 | 100% | 100% | Compliant |
| E.09.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.003 | LKD | 200 | 100% | 100% | Compliant |
| E.09.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.004 | LKD | 200 | 95% | 93% | Compliant |
| E.09.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.005 | LKD | 200 | 87% | 86% | Compliant |
| E.09.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.006 | LKD | 200 | 100% | 100% | Compliant |
| E.09.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.007 | LKD | 200 | 100% | 100% | Compliant |
| E.09.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.007 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.09.008 | LKD | 200 | 93% | 92% | Compliant |
| E.09.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.09.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.29 SDA Results: Block E - Apartment Units - Level 10 & 11

| Table No. C.2.29 - SDA Results: Block E - Apartment Units - Level 10 & 11 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.10.001 | LKD | 200 | 96% | 96% | Compliant |
| E.10.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.10.002 | LKD | 200 | 100% | 100% | Compliant |
| E.10.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.10.003 | LKD | 200 | 100% | 100% | Compliant |
| E.10.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.10.004 | LKD | 200 | 94% | 94% | Compliant |
| E.10.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.10.005 | LKD | 200 | 100% | 100% | Compliant |
| E.10.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.10.006 | LKD | 200 | 100% | 100% | Compliant |
| E.10.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.10.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.001 | LKD | 200 | 96% | 96% | Compliant |
| E.11.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.002 | LKD | 200 | 100% | 100% | Compliant |
| E.11.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.003 | LKD | 200 | 100% | 100% | Compliant |
| E.11.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.004 | LKD | 200 | 95% | 94% | Compliant |
| E.11.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.005 | LKD | 200 | 100% | 100% | Compliant |
| E.11.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.11.006 | LKD | 200 | 100% | 100% | Compliant |
| E.11.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.11.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.30 SDA Results: Block E - Apartment Units - Level 12 & 13

| Table No. C.2.30 - SDA Results: Block E - Apartment Units - Level 12 & 13 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| E.12.001 | LKD | 200 | 96% | 96% | Compliant |
| E.12.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.12.002 | LKD | 200 | 100% | 100% | Compliant |
| E.12.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.12.003 | LKD | 200 | 100% | 100% | Compliant |
| E.12.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.12.004 | LKD | 200 | 95% | 94% | Compliant |
| E.12.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.12.005 | LKD | 200 | 100% | 100% | Compliant |
| E.12.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.12.006 | LKD | 200 | 100% | 100% | Compliant |
| E.12.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.12.006 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.13.001 | LKD | 200 | 100% | 100% | Compliant |
| E.13.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.13.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.13.001 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.13.002 | LKD | 200 | 100% | 100% | Compliant |
| E.13.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.13.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.13.002 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.13.003 | LKD | 200 | 100% | 100% | Compliant |
| E.13.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.13.003 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.13.003 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.14.001 | LKD | 200 | 100% | 100% | Compliant |
| E.14.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.14.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.14.001 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| E.14.002 | LKD | 200 | 100% | 100% | Compliant |
| E.14.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| E.14.002 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| E.14.002 | Bedroom 3 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.31 SDA Results: Block H - Apartment Units - Level 01

| Table No. C.2.31 - SDA Results: Block H - Apartment Units - Level 01 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| H.01.001 | LKD | 200 | 100% | 100% | Compliant |
| H.01.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.01.002 | LKD | 200 | 68% | 68% | Compliant |
| H.01.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.003 | LKD | 200 | 66% | 66% | Compliant |
| H.01.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.004 | LKD | 200 | 100% | 100% | Compliant |
| H.01.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.004 | Bedroom 2 | 100 | 100% | 98% | Compliant |
| H.01.005 | LKD | 200 | 100% | 100% | Compliant |
| H.01.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.006 | LKD | 200 | 55% | 54% | Compliant |
| H.01.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.007 | LKD | 200 | 55% | 55% | Compliant |
| H.01.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.008 | LKD | 200 | 100% | 100% | Compliant |
| H.01.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.01.009 | LKD | 200 | 57% | 56% | Compliant |
| H.01.009 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.01.010 | LKD | 200 | 100% | 100% | Compliant |
| H.01.010 | Bedroom 1 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.
*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.
The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.32 SDA Results: Block H - Apartment Units - Level 02

| Table No. C.2.32 - SDA Results: Block H - Apartment Units - Level 02 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| H.02.001 | LKD | 200 | 100% | 100% | Compliant |
| H.02.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.002 | LKD | 200 | 73% | 73% | Compliant |
| H.02.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.003 | LKD | 200 | 73% | 73% | Compliant |
| H.02.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.004 | LKD | 200 | 100% | 100% | Compliant |
| H.02.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.005 | LKD | 200 | 100% | 100% | Compliant |
| H.02.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.006 | LKD | 200 | 60% | 60% | Compliant |
| H.02.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.007 | LKD | 200 | 59% | 59% | Compliant |
| H.02.007 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.008 | LKD | 200 | 100% | 100% | Compliant |
| H.02.008 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.008 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.009 | LKD | 200 | 100% | 100% | Compliant |
| H.02.009 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.009 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.010 | LKD | 200 | 70% | 70% | Compliant |
| H.02.010 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.011 | LKD | 200 | 68% | 68% | Compliant |
| H.02.011 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.012 | LKD | 200 | 87% | 84% | Compliant |
| H.02.012 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.012 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.012 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| H.02.013 | LKD | 200 | 100% | 100% | Compliant |
| H.02.013 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.013 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.02.014 | LKD | 200 | 59% | 58% | Compliant |
| H.02.014 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.015 | LKD | 200 | 61% | 61% | Compliant |
| H.02.015 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.016 | LKD | 200 | 100% | 100% | Compliant |
| H.02.016 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.02.016 | Bedroom 2 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.2.33 SDA Results: Block H - Apartment Units - Level 03

| Table No. C.2.33 - SDA Results: Block H - Apartment Units - Level 03 | | | | | |
|---|---|---|---|---|---|
| Unit Number | Room Description | Target Lux* | % of area above target Lux* (recommendation >50%) | | Compliance with BR 209 Criteria* |
| | | | Without Trees*** | With Trees** | |
| H.03.001 | LKD | 200 | 100% | 100% | Compliant |
| H.03.001 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.03.001 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.03.002 | LKD | 200 | 72% | 72% | Compliant |
| H.03.002 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.03.003 | LKD | 200 | 73% | 72% | Compliant |
| H.03.003 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.03.004 | LKD | 200 | 88% | 86% | Compliant |
| H.03.004 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.03.004 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.03.004 | Bedroom 3 | 100 | 100% | 100% | Compliant |
| H.03.005 | LKD | 200 | 100% | 100% | Compliant |
| H.03.005 | Bedroom 1 | 100 | 100% | 100% | Compliant |
| H.03.005 | Bedroom 2 | 100 | 100% | 100% | Compliant |
| H.03.006 | LKD | 200 | 60% | 60% | Compliant |
| H.03.006 | Bedroom 1 | 100 | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.

** Under the BR 209 study the SDA has been calculated with indicative trees represented accounting for annual foliage.

*** The SDA assessment without trees indicates the level of daylight within the proposed development when trees are not included in the analytical model. This study provides an understanding of how trees affect daylight within the proposed development.

The SDA circa compliance rates across the entire scheme can be found in section 5.2.1 on page 28.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3 Sunlight Exposure (SE) in Proposed Units

Below is an example of the table used to describe the SE performance of proposed habitable rooms.

| Table Example. C.3 - Scheme Performance Sunlight Exposure | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects | | | Without Deciduous Trees | | |
| | | SE Hours on March 21st | Level of SE on March 21st | Unit compliance based on highest performing room | SE Hours on March 21st | Level of SE on March 21st | Unit compliance based on highest performing room |
| A | B | C | D | E | F | G | H |

**A: Unit Number**

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

**B: Room Description**

*Room Description* details which room of the unit has been assessed, e.g. bedroom, living room, etc.

**C: SE Hours on March 21st (Deciduous Trees as Opaque Objects)**

This column will state the number of hours the assessed room can expect to receive on March 21st with the assessment carried out with deciduous trees as opaque objects.

**D: Level of SE on March 21st (Deciduous Trees as Opaque Objects)**

BR 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BR 209 categorise sunlight exposure as minimum, medium and high, this column will categorise the level of sunlight exposure with deciduous trees as opaque objects based on the following:

- Less than 1.5 hours: *Below minimum*,
- Between 1.5 hours and 3 hours: *Minimum*
- Between 3 hours and 4 hours: *Medium*
- More than 4 hours: *High*

**E: Unit compliance based on highest performing room (Deciduous Trees as Opaque Objects)**

A proposed unit is considered to be compliant provided any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on the assessment date. This column will identify the highest performing room within a unit and state compliance for the associated unit based on that room with the assessment carried out with deciduous trees as opaque objects.

Typically unit compliance will be stated for the best performing room per unit only, with lesser performing rooms indicated with a dash (-).

**F: SE Hours on March 21st (Without Deciduous Trees)**

This column will state the number of hours the assessed room can expect to receive on March 21st with the assessment carried out without deciduous trees.

**G: Level of SE on March 21st (Without Deciduous Trees)**

BR 209 recommends a minimum sunlight exposure of 1.5 hours for a proposed unit with preference given to main living rooms. BR 209 categorise sunlight exposure as minimum, medium and high, this column will categorise the level of sunlight exposure without deciduous trees using the same criteria as the study with deciduous trees as opaque objects.

**H: Unit compliance based on highest performing room (Without Deciduous Trees)**

A proposed unit is considered to be compliant provided any habitable room within the unit is capable of receiving at least 1.5 hours of sunlight on March 21st. This column will identify the highest performing room within a unit and state compliance for the associated unit based on that room with the assessment carried out without deciduous trees. Typically only one room per unit will be populated in this column, with lesser performing rooms indicated with a dash (-).

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## C.3.1 SE Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

Table No. C.3.1 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 24A | LKD | 0.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 24A | Bedroom 1 | 0.10 | Below Minimum | - | 0.80 | Below Minimum | - |
| 24A | Bedroom 2 | 2.80 | Minimum | Compliant | 5.50 | High | - |
| 24A | Study | 2.10 | Minimum | - | 8.40 | High | Compliant |
| 25A | LKD | 1.00 | Below Minimum | - | 1.00 | Below Minimum | - |
| 25A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 25A | Bedroom 2 | 3.00 | Medium | Compliant | 5.50 | High | Compliant |
| 26A | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 26A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 26A | Bedroom 2 | 5.30 | High | Compliant | 5.70 | High | Compliant |
| 27A | LKD | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 27A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 27A | Bedroom 2 | 4.00 | High | Compliant | 4.50 | High | Compliant |
| 28A | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 28A | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 28A | Bedroom 2 | 5.50 | High | Compliant | 6.30 | High | Compliant |
| 29A | LKD | 1.40 | Below Minimum | - | 1.40 | Below Minimum | - |
| 29A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 29A | Bedroom 2 | 5.90 | High | Compliant | 5.90 | High | Compliant |
| 30A | LKD | 1.30 | Below Minimum | - | 1.30 | Below Minimum | - |
| 30A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 30A | Bedroom 2 | 4.90 | High | Compliant | 5.00 | High | Compliant |
| 31A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 31A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 31A | Bedroom 2 | 5.40 | High | Compliant | 5.40 | High | Compliant |
| 32A | LKD | 1.30 | Below Minimum | - | 1.30 | Below Minimum | - |
| 32A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 32A | Bedroom 2 | 5.20 | High | Compliant | 5.20 | High | Compliant |
| 33A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 33A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 33A | Bedroom 2 | 4.70 | High | Compliant | 4.80 | High | Compliant |
| 33A | Study | 1.20 | Below Minimum | - | 1.90 | Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.2 SE Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

Table No. C.3.2 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 24B | Kitchen/Dining | 6.10 | High | - | 6.10 | High | - |
| 24B | Living Room | 6.10 | High | - | 8.70 | High | - |
| 25B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 25B | Living Room | 6.00 | High | - | 6.00 | High | - |
| 26B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 26B | Living Room | 6.50 | High | - | 6.50 | High | - |
| 27B | Kitchen/Dining | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 27B | Living Room | 6.50 | High | - | 6.50 | High | - |
| 28B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 28B | Living Room | 6.40 | High | - | 6.40 | High | - |
| 29B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 29B | Living Room | 6.10 | High | - | 6.10 | High | - |
| 30B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 30B | Living Room | 5.90 | High | - | 5.90 | High | - |
| 31B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 31B | Living Room | 5.60 | High | - | 5.60 | High | - |
| 32B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 32B | Living Room | 5.50 | High | - | 5.50 | High | - |
| 33B | Kitchen/Dining | 2.00 | Minimum | - | 2.40 | Minimum | - |
| 33B | Living Room | 5.70 | High | - | 5.70 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.3 SE Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

Table No. C.3.3 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 24B | Bedroom 1 | 9.10 | High | Compliant | 9.10 | High | Compliant |
| 24B | Bedroom 2 | 6.10 | High | - | 6.10 | High | - |
| 24B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 25B | Bedroom 1 | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 25B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 25B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 26B | Bedroom 1 | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 26B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 26B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |
| 27B | Bedroom 1 | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 27B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 27B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |
| 28B | Bedroom 1 | 6.40 | High | Compliant | 6.40 | High | Compliant |
| 28B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 28B | Bedroom 3 | 6.30 | High | - | 6.30 | High | - |
| 29B | Bedroom 1 | 6.20 | High | - | 6.20 | High | - |
| 29B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 29B | Bedroom 3 | 6.30 | High | Compliant | 6.30 | High | Compliant |
| 30B | Bedroom 1 | 6.10 | High | Compliant | 6.10 | High | Compliant |
| 30B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 30B | Bedroom 3 | 5.90 | High | - | 5.90 | High | - |
| 31B | Bedroom 1 | 5.90 | High | Compliant | 5.90 | High | Compliant |
| 31B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 31B | Bedroom 3 | 5.90 | High | - | 5.90 | High | - |
| 32B | Bedroom 1 | 5.70 | High | Compliant | 5.70 | High | Compliant |
| 32B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 32B | Bedroom 3 | 5.70 | High | - | 5.70 | High | - |
| 33B | Bedroom 1 | 6.40 | High | Compliant | 6.40 | High | Compliant |
| 33B | Bedroom 2 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 33B | Bedroom 3 | 5.70 | High | - | 5.70 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.4 SE Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

Table No. C.3.4 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 66A | LKD | 0.00 | Below Minimum | - | 1.20 | Below Minimum | - |
| 66A | Bedroom 1 | 0.30 | Below Minimum | - | 0.80 | Below Minimum | - |
| 66A | Bedroom 2 | 4.40 | High | Compliant | 4.90 | High | - |
| 66A | Study | 3.80 | Medium | - | 7.50 | High | Compliant |
| 67A | LKD | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 67A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 67A | Bedroom 2 | 2.70 | Minimum | Compliant | 5.30 | High | Compliant |
| 68A | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 68A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 68A | Bedroom 2 | 4.60 | High | Compliant | 5.50 | High | Compliant |
| 69A | LKD | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 69A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 69A | Bedroom 2 | 3.30 | Medium | Compliant | 3.90 | Medium | Compliant |
| 70A | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 70A | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 70A | Bedroom 2 | 6.00 | High | Compliant | 6.00 | High | Compliant |
| 71A | LKD | 1.40 | Below Minimum | - | 1.40 | Below Minimum | - |
| 71A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 71A | Bedroom 2 | 5.60 | High | Compliant | 5.60 | High | Compliant |
| 72A | LKD | 1.30 | Below Minimum | - | 1.30 | Below Minimum | - |
| 72A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 72A | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| 73A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 73A | Bedroom 1 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| 73A | Bedroom 2 | 5.10 | High | Compliant | 5.10 | High | Compliant |
| 74A | LKD | 1.30 | Below Minimum | - | 1.30 | Below Minimum | - |
| 74A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 74A | Bedroom 2 | 5.00 | High | Compliant | 5.10 | High | Compliant |
| 75A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 75A | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 75A | Bedroom 2 | 5.10 | High | Compliant | 5.20 | High | Compliant |
| 75A | Study | 1.30 | Below Minimum | - | 3.20 | Medium | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.5 SE Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

Table No. C.3.5 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 66B | Kitchen/Dining | 6.10 | High | - | 6.10 | High | - |
| 66B | Living Room | 5.20 | High | - | 8.20 | High | - |
| 67B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 67B | Living Room | 5.80 | High | - | 5.80 | High | - |
| 68B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 68B | Living Room | 6.30 | High | - | 6.30 | High | - |
| 69B | Kitchen/Dining | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 69B | Living Room | 6.20 | High | - | 6.20 | High | - |
| 70B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 70B | Living Room | 6.10 | High | - | 6.10 | High | - |
| 71B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 71B | Living Room | 5.80 | High | - | 5.80 | High | - |
| 72B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 72B | Living Room | 5.60 | High | - | 5.60 | High | - |
| 73B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 73B | Living Room | 5.40 | High | - | 5.40 | High | - |
| 74B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 74B | Living Room | 5.70 | High | - | 5.70 | High | - |
| 75B | Kitchen/Dining | 1.50 | Minimum | - | 2.70 | Minimum | - |
| 75B | Living Room | 6.50 | High | - | 6.50 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.6 SE Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

Table No. C.3.6 - Sunlight Exposure Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 66B | Bedroom 1 | 8.50 | High | Compliant | 8.50 | High | Compliant |
| 66B | Bedroom 2 | 6.10 | High | - | 6.10 | High | - |
| 66B | Bedroom 3 | 5.70 | High | - | 5.70 | High | - |
| 67B | Bedroom 1 | 6.40 | High | Compliant | 6.40 | High | Compliant |
| 67B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 67B | Bedroom 3 | 5.90 | High | - | 5.90 | High | - |
| 68B | Bedroom 1 | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 68B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 68B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |
| 69B | Bedroom 1 | 6.30 | High | - | 6.30 | High | - |
| 69B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 69B | Bedroom 3 | 6.40 | High | Compliant | 6.40 | High | Compliant |
| 70B | Bedroom 1 | 6.20 | High | Compliant | 6.20 | High | Compliant |
| 70B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 70B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 71B | Bedroom 1 | 6.00 | High | Compliant | 6.00 | High | Compliant |
| 71B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 71B | Bedroom 3 | 6.00 | High | - | 6.00 | High | - |
| 72B | Bedroom 1 | 5.90 | High | Compliant | 5.90 | High | Compliant |
| 72B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 72B | Bedroom 3 | 5.80 | High | - | 5.80 | High | - |
| 73B | Bedroom 1 | 5.80 | High | Compliant | 5.80 | High | Compliant |
| 73B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 73B | Bedroom 3 | 5.80 | High | - | 5.80 | High | - |
| 74B | Bedroom 1 | 6.20 | High | - | 6.20 | High | - |
| 74B | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 74B | Bedroom 3 | 6.40 | High | Compliant | 6.40 | High | Compliant |
| 75B | Bedroom 1 | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 75B | Bedroom 2 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 75B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.7 SE Results: Duplex Type RD3 - Various Units

Table No. C.3.7 - Sunlight Exposure Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 1A | LKD | 5.40 | High | Compliant | 6.80 | High | Compliant |
| 1A | Bedroom 1 | 1.70 | Minimum | - | 6.10 | High | - |
| 1A | Bedroom 2 | 1.00 | Below Minimum | - | 1.00 | Below Minimum | - |
| 1B | Kitchen/Dining | 6.80 | High | Compliant | 6.80 | High | Compliant |
| 1B | Living Room | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 1B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 1B | Bedroom 2 | 6.50 | High | - | 6.50 | High | - |
| 1B | Bedroom 3 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 6A | LKD | 6.80 | High | Compliant | 6.80 | High | Compliant |
| 6A | Bedroom 1 | 4.40 | High | - | 4.40 | High | - |
| 6A | Bedroom 2 | 0.00 | Below Minimum | - | 1.10 | Below Minimum | - |
| 6B | Kitchen/Dining | 6.70 | High | - | 6.70 | High | - |
| 6B | Living Room | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 6B | Bedroom 1 | 6.40 | High | - | 6.40 | High | - |
| 6B | Bedroom 2 | 9.30 | High | Compliant | 9.30 | High | Compliant |
| 6B | Bedroom 3 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 15A | LKD | 5.20 | High | - | 5.20 | High | - |
| 15A | Bedroom 1 | 5.90 | High | Compliant | 5.90 | High | Compliant |
| 15A | Bedroom 2 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 15B | Kitchen/Dining | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 15B | Living Room | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 15B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 15B | Bedroom 2 | 6.40 | High | - | 6.40 | High | - |
| 15B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 20A | LKD | 6.70 | High | Compliant | 6.70 | High | Compliant |
| 20A | Bedroom 1 | 6.00 | High | - | 6.00 | High | - |
| 20A | Bedroom 2 | 0.70 | Below Minimum | - | 1.20 | Below Minimum | - |
| 20B | Kitchen/Dining | 6.60 | High | - | 6.60 | High | - |
| 20B | Living Room | 4.00 | High | - | 4.00 | High | - |
| 20B | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 20B | Bedroom 2 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 20B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 21A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 21A | Bedroom 1 | 0.90 | Below Minimum | - | 0.90 | Below Minimum | - |
| 21A | Bedroom 2 | 4.20 | High | Compliant | 6.00 | High | Compliant |
| 21B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 21B | Living Room | 6.10 | High | Compliant | 6.10 | High | Compliant |
| 21B | Bedroom 1 | 6.10 | High | - | 6.10 | High | - |
| 21B | Bedroom 2 | 2.40 | Minimum | - | 2.40 | Minimum | - |
| 21B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.8 SE Results: Duplex Type RD3 - Various Units

| Table No. C.3.8 - Sunlight Exposure Results: Duplex Type RD3 - Various Units | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 36A | LKD | 3.30 | Medium | - | 3.30 | Medium | - |
| 36A | Bedroom 1 | 3.70 | Medium | Compliant | 3.70 | Medium | Compliant |
| 36A | Bedroom 2 | 0.60 | Below Minimum | - | 1.20 | Below Minimum | - |
| 36B | Kitchen/Dining | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 36B | Living Room | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 36B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 36B | Bedroom 2 | 6.40 | High | - | 6.40 | High | - |
| 36B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 43A | LKD | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 43A | Bedroom 1 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 43A | Bedroom 2 | 5.40 | High | Compliant | 6.10 | High | Compliant |
| 43B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 43B | Living Room | 6.10 | High | Compliant | 6.10 | High | Compliant |
| 43B | Bedroom 1 | 6.10 | High | - | 6.10 | High | - |
| 43B | Bedroom 2 | 2.40 | Minimum | - | 2.40 | Minimum | - |
| 43B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 58A | LKD | 3.50 | Medium | - | 3.50 | Medium | - |
| 58A | Bedroom 1 | 3.80 | Medium | Compliant | 3.80 | Medium | Compliant |
| 58A | Bedroom 2 | 1.00 | Below Minimum | - | 1.00 | Below Minimum | - |
| 58B | Kitchen/Dining | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 58B | Living Room | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 58B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 58B | Bedroom 2 | 6.40 | High | - | 6.40 | High | - |
| 58B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 63A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 63A | Bedroom 1 | 0.90 | Below Minimum | - | 0.90 | Below Minimum | - |
| 63A | Bedroom 2 | 3.70 | Medium | Compliant | 6.10 | High | Compliant |
| 63B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 63B | Living Room | 6.10 | High | Compliant | 6.10 | High | Compliant |
| 63B | Bedroom 1 | 6.10 | High | - | 6.10 | High | - |
| 63B | Bedroom 2 | 2.40 | Minimum | - | 2.40 | Minimum | - |
| 63B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 78A | LKD | 3.20 | Medium | - | 3.20 | Medium | - |
| 78A | Bedroom 1 | 3.60 | Medium | Compliant | 3.60 | Medium | Compliant |
| 78A | Bedroom 2 | 0.10 | Below Minimum | - | 0.60 | Below Minimum | - |
| 78B | Kitchen/Dining | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 78B | Living Room | 0.90 | Below Minimum | - | 0.90 | Below Minimum | - |
| 78B | Bedroom 1 | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 78B | Bedroom 2 | 6.40 | High | - | 6.40 | High | - |
| 78B | Bedroom 3 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.9 SE Results: Duplex Type RD3 - Various Units

Table No. C.3.9 - Sunlight Exposure Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 89A | LKD | 0.20 | Below Minimum | - | 0.50 | Below Minimum | - |
| 89A | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 89A | Bedroom 2 | 2.40 | Minimum | Compliant | 3.70 | Medium | Compliant |
| 89B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 89B | Living Room | 7.70 | High | - | 9.00 | High | - |
| 89B | Bedroom 1 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 89B | Bedroom 2 | 6.50 | High | - | 6.50 | High | - |
| 89B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 95A | LKD | 5.10 | High | Compliant | 5.10 | High | Compliant |
| 95A | Bedroom 1 | 5.00 | High | - | 5.00 | High | - |
| 95A | Bedroom 2 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| 95B | Kitchen/Dining | 6.60 | High | - | 6.60 | High | - |
| 95B | Living Room | 3.90 | Medium | - | 3.90 | Medium | - |
| 95B | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 95B | Bedroom 2 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 95B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 106A | LKD | 1.40 | Below Minimum | - | 1.40 | Below Minimum | - |
| 106A | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 106A | Bedroom 2 | 5.30 | High | Compliant | 5.80 | High | Compliant |
| 106B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 106B | Living Room | 6.10 | High | Compliant | 6.10 | High | Compliant |
| 106B | Bedroom 1 | 6.10 | High | - | 6.10 | High | - |
| 106B | Bedroom 2 | 2.40 | Minimum | - | 2.40 | Minimum | - |
| 106B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 109A | LKD | 1.50 | Minimum | - | 2.00 | Minimum | - |
| 109A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 109A | Bedroom 2 | 4.40 | High | Compliant | 5.70 | High | Compliant |
| 109B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 109B | Living Room | 9.00 | High | - | 9.00 | High | - |
| 109B | Bedroom 1 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 109B | Bedroom 2 | 6.50 | High | - | 6.50 | High | - |
| 109B | Bedroom 3 | 6.10 | High | - | 6.10 | High | - |
| 114A | LKD | 4.00 | High | Compliant | 4.00 | High | Compliant |
| 114A | Bedroom 1 | 4.00 | High | - | 4.00 | High | - |
| 114A | Bedroom 2 | 0.00 | Below Minimum | - | 0.60 | Below Minimum | - |
| 114B | Kitchen/Dining | 6.60 | High | - | 6.60 | High | - |
| 114B | Living Room | 4.00 | High | - | 4.00 | High | - |
| 114B | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 114B | Bedroom 2 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 114B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.10 SE Results: Duplex Type RD3 - Various Units

Table No. C.3.10 - Sunlight Exposure Results: Duplex Type RD3 - Various Units

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 127A | LKD | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 127A | Bedroom 1 | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| 127A | Bedroom 2 | 4.10 | High | Compliant | 4.10 | High | Compliant |
| 127B | Kitchen/Dining | 1.90 | Minimum | - | 1.90 | Minimum | - |
| 127B | Living Room | 4.70 | High | - | 4.70 | High | - |
| 127B | Bedroom 1 | 5.10 | High | Compliant | 5.10 | High | Compliant |
| 127B | Bedroom 2 | 2.20 | Minimum | - | 2.20 | Minimum | - |
| 127B | Bedroom 3 | 5.00 | High | - | 5.00 | High | - |
| 134A | LKD | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 134A | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 134A | Bedroom 2 | 1.40 | Below Minimum | Non-Compliant | 6.10 | High | Compliant |
| 134B | Kitchen/Dining | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 134B | Living Room | 7.30 | High | - | 7.30 | High | - |
| 134B | Bedroom 1 | 8.60 | High | Compliant | 8.60 | High | Compliant |
| 134B | Bedroom 2 | 5.60 | High | - | 5.60 | High | - |
| 134B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |
| 140A | LKD | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 140A | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| 140A | Bedroom 2 | 4.30 | High | Compliant | 6.50 | High | Compliant |
| 140B | Kitchen/Dining | 1.50 | Minimum | - | 1.50 | Minimum | - |
| 140B | Living Room | 6.50 | High | Compliant | 6.50 | High | Compliant |
| 140B | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 140B | Bedroom 2 | 2.40 | Minimum | - | 2.40 | Minimum | - |
| 140B | Bedroom 3 | 6.50 | High | - | 6.50 | High | - |
| 147A | LKD | 5.00 | High | Compliant | 5.00 | High | Compliant |
| 147A | Bedroom 1 | 5.00 | High | - | 5.00 | High | - |
| 147A | Bedroom 2 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 147B | Kitchen/Dining | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 147B | Living Room | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |
| 147B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 147B | Bedroom 2 | 6.40 | High | - | 6.40 | High | - |
| 147B | Bedroom 3 | 1.20 | Below Minimum | - | 1.20 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.
** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.
*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.11 SE Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

Table No. C.3.11 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 100A | LKD | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 100A | Bedroom 1 | 5.10 | High | - | 7.00 | High | - |
| 100A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 101A | LKD | 8.10 | High | Compliant | 8.10 | High | Compliant |
| 101A | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| 101A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 102A | LKD | 8.10 | High | Compliant | 8.10 | High | Compliant |
| 102A | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| 102A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 103A | LKD | 8.10 | High | Compliant | 8.10 | High | Compliant |
| 103A | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| 103A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 104A | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| 104A | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| 104A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 105A | LKD | 6.60 | High | Compliant | 6.60 | High | Compliant |
| 105A | Bedroom 1 | 5.00 | High | - | 5.00 | High | - |
| 105A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.12 SE Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

Table No. C.3.12 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 100B | Kitchen/Dining | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 100B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 101B | Kitchen/Dining | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 101B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 102B | Kitchen/Dining | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 102B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 103B | Kitchen/Dining | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 103B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 104B | Kitchen/Dining | 8.00 | High | Compliant | 8.00 | High | Compliant |
| 104B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 105B | Kitchen/Dining | 8.00 | High | - | 8.00 | High | - |
| 105B | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.13 SE Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02

| Table No. C.3.13 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 100B | Bedroom 1 | 2.30 | Minimum | - | 2.30 | Minimum | - |
| 100B | Bedroom 2 | 7.80 | High | - | 7.80 | High | - |
| 100B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 101B | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 101B | Bedroom 2 | 7.80 | High | - | 7.80 | High | - |
| 101B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 102B | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 102B | Bedroom 2 | 7.80 | High | - | 7.80 | High | - |
| 102B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 103B | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 103B | Bedroom 2 | 7.80 | High | - | 7.80 | High | - |
| 103B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 104B | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 104B | Bedroom 2 | 7.80 | High | - | 7.80 | High | - |
| 104B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| 105B | Bedroom 1 | 5.30 | High | - | 5.30 | High | - |
| 105B | Bedroom 2 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 105B | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.14 SE Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00

| Table No. C.3.14 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 119A | LKD | 3.90 | Medium | Compliant | 3.90 | Medium | Compliant |
| 119A | Bedroom 1 | 3.20 | Medium | - | 3.30 | Medium | - |
| 119A | Bedroom 2 | 0.00 | Below Minimum | - | 0.10 | Below Minimum | - |
| 120A | LKD | 5.50 | High | - | 5.50 | High | - |
| 120A | Bedroom 1 | 5.80 | High | Compliant | 5.80 | High | Compliant |
| 120A | Bedroom 2 | 0.30 | Below Minimum | - | 0.60 | Below Minimum | - |
| 121A | LKD | 7.30 | High | Compliant | 7.30 | High | Compliant |
| 121A | Bedroom 1 | 6.30 | High | - | 6.30 | High | - |
| 121A | Bedroom 2 | 0.00 | Below Minimum | - | 0.60 | Below Minimum | - |
| 122A | LKD | 7.30 | High | Compliant | 7.30 | High | Compliant |
| 122A | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 122A | Bedroom 2 | 0.40 | Below Minimum | - | 0.60 | Below Minimum | - |
| 123A | LKD | 7.30 | High | Compliant | 7.30 | High | Compliant |
| 123A | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 123A | Bedroom 2 | 0.00 | Below Minimum | - | 0.10 | Below Minimum | - |
| 124A | LKD | 7.30 | High | Compliant | 7.30 | High | Compliant |
| 124A | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 124A | Bedroom 2 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 125A | LKD | 7.20 | High | Compliant | 7.30 | High | Compliant |
| 125A | Bedroom 1 | 6.50 | High | - | 6.50 | High | - |
| 125A | Bedroom 2 | 0.00 | Below Minimum | - | 0.60 | Below Minimum | - |
| 126A | LKD | 6.60 | High | Compliant | 7.00 | High | Compliant |
| 126A | Bedroom 1 | 5.10 | High | - | 5.50 | High | - |
| 126A | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.15 SE Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

Table No. C.3.15 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 119B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 119B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 120B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 120B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 121B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 121B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 122B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 122B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 123B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 123B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 124B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 124B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 125B | Kitchen/Dining | 7.20 | High | Compliant | 7.20 | High | Compliant |
| 125B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| 126B | Kitchen/Dining | 7.20 | High | - | 7.20 | High | - |
| 126B | Living Room | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to “3.3 Definition of Levels of Sunlight Exposure” on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.16 SE Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

Table No. C.3.16 - Sunlight Exposure Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| 119B | Bedroom 1 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| 119B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 119B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 120B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 120B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 120B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 121B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 121B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 121B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 122B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 122B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 122B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 123B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 123B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 123B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 124B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 124B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 124B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 125B | Bedroom 1 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 125B | Bedroom 2 | 7.00 | High | - | 7.00 | High | - |
| 125B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |
| 126B | Bedroom 1 | 5.90 | High | - | 5.90 | High | - |
| 126B | Bedroom 2 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| 126B | Bedroom 3 | 0.60 | Below Minimum | - | 0.60 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.17 SE Results: Block E - Duplex and Triplex Units - Level 01

Table No. C.3.17 - Sunlight Exposure Results: Block E - Duplex and Triplex Units - Level 01

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.01.009 | Kitchen | 2.80 | Minimum | Compliant | 2.80 | Minimum | Compliant |
| E.01.009 | Living Room | 1.30 | Below Minimum | - | 2.00 | Minimum | - |
| E.01.010 | Kitchen | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.01.010 | Living Room | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.011 | Kitchen | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.011 | Living Room | 3.00 | Medium | - | 3.00 | Medium | - |
| E.01.012 | Kitchen | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.012 | Living Room | 2.90 | Minimum | - | 2.90 | Minimum | - |
| E.01.013 | Kitchen | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.013 | Living Room | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| E.01.014 | Kitchen | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.014 | Living Room | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| E.01.015 | Kitchen | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.015 | Living Room | 1.10 | Below Minimum | - | 1.10 | Below Minimum | - |
| E.01.016 | Kitchen | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.016 | Study | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| E.01.017 | Kitchen | 5.70 | High | - | 5.70 | High | - |
| E.01.017 | Study | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.01.018 | Kitchen | 5.70 | High | Compliant | 5.70 | High | Compliant |
| E.01.018 | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.019 | Kitchen | 5.70 | High | - | 5.70 | High | - |
| E.01.019 | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.020 | Kitchen | 5.70 | High | Compliant | 5.70 | High | Compliant |
| E.01.020 | Living Room | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.18 SE Results: Block E - Duplex and Triplex Units - Level 02

Table No. C.3.18 - Sunlight Exposure Results: Block E - Duplex and Triplex Units - Level 02

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.01.009 | Bedroom 2 | 2.60 | Minimum | - | 2.60 | Minimum | - |
| E.01.009 | Bedroom 3 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.01.009 | Bedroom 4 | 2.30 | Minimum | - | 2.30 | Minimum | - |
| E.01.010 | Bedroom 2 | 3.10 | Medium | Compliant | 3.10 | Medium | Compliant |
| E.01.010 | Bedroom 3 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.01.010 | Bedroom 4 | 2.30 | Minimum | - | 2.30 | Minimum | - |
| E.01.011 | Bedroom 2 | 3.30 | Medium | - | 3.30 | Medium | - |
| E.01.011 | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.011 | Bedroom 4 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.012 | Bedroom 2 | 3.40 | Medium | - | 3.40 | Medium | - |
| E.01.012 | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.012 | Bedroom 4 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.013 | Bedroom 1 | 1.30 | Below Minimum | - | 1.30 | Below Minimum | - |
| E.01.013 | Bedroom 2 | 3.20 | Medium | - | 3.20 | Medium | - |
| E.01.013 | Bedroom 3 | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.014 | Bedroom 2 | 1.50 | Minimum | - | 1.50 | Minimum | - |
| E.01.014 | Bedroom 3 | 3.20 | Medium | - | 3.20 | Medium | - |
| E.01.014 | Bedroom 4 | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.015 | Bedroom 1 | 1.50 | Minimum | - | 1.50 | Minimum | - |
| E.01.015 | Bedroom 2 | 3.20 | Medium | - | 3.20 | Medium | - |
| E.01.015 | Bedroom 3 | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.016 | Bedroom 2 | 0.50 | Below Minimum | - | 0.50 | Below Minimum | - |
| E.01.016 | Bedroom 3 | 3.20 | Medium | - | 3.20 | Medium | - |
| E.01.016 | Bedroom 4 | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.017 | Bedroom 2 | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.01.017 | Bedroom 3 | 5.30 | High | - | 5.30 | High | - |
| E.01.017 | Bedroom 4 | 5.70 | High | - | 5.70 | High | - |
| E.01.018 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.018 | Bedroom 2 | 5.30 | High | - | 5.30 | High | - |
| E.01.018 | Bedroom 3 | 5.70 | High | - | 5.70 | High | - |
| E.01.019 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.019 | Bedroom 3 | 5.30 | High | - | 5.30 | High | - |
| E.01.019 | Bedroom 4 | 5.70 | High | - | 5.70 | High | - |
| E.01.020 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.020 | Bedroom 2 | 5.30 | High | - | 5.30 | High | - |
| E.01.020 | Bedroom 3 | 5.70 | High | - | 5.70 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.19 SE Results: Block E - Duplex and Triplex Units - Level 03

Table No. C.3.19 - Sunlight Exposure Results: Block E - Duplex and Triplex Units - Level 03

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.01.009 | Living Room_U | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.01.009 | Bedroom 1 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.01.010 | Living Room_U | 3.00 | Medium | - | 3.00 | Medium | - |
| E.01.010 | Bedroom 1 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.01.011 | Living Room_U | 3.40 | Medium | Compliant | 3.40 | Medium | Compliant |
| E.01.011 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.012 | Living Room_U | 4.30 | High | Compliant | 4.30 | High | Compliant |
| E.01.012 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.014 | Living Room_U | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.014 | Bedroom 1 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.01.016 | Living Room_U | 3.20 | Medium | Compliant | 3.20 | Medium | Compliant |
| E.01.016 | Bedroom 1 | 0.90 | Below Minimum | - | 0.90 | Below Minimum | - |
| E.01.017 | Living Room_U | 6.00 | High | Compliant | 6.00 | High | Compliant |
| E.01.017 | Bedroom 1 | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.01.019 | Living Room_U | 5.80 | High | Compliant | 5.80 | High | Compliant |
| E.01.019 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.20 SE Results: Block E - Apartment Units - Level 01

| Table No. C.3.20 - Sunlight Exposure Results: Block E - Apartment Units - Level 01 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.01.001 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.01.001 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.001 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.01.002 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.01.002 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.01.002 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.01.003 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.01.003 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.01.003 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.01.004 | LKD | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.01.004 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.01.004 | Bedroom 2 | 5.30 | High | - | 5.30 | High | - |
| E.01.005 | LKD | 6.90 | High | Compliant | 6.90 | High | Compliant |
| E.01.005 | Bedroom 1 | 6.70 | High | - | 6.70 | High | - |
| E.01.006 | LKD | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.006 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.01.007 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.01.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.01.008 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.01.008 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.01.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.21 SE Results: Block E - Apartment Units - Level 02

Table No. C.3.21 - Sunlight Exposure Results: Block E - Apartment Units - Level 02

| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
|---|---|---|---|---|---|---|---|
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.02.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.02.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.02.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.02.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.02.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.02.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.02.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.02.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.02.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.02.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.02.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.02.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.02.005 | LKD | 2.70 | Minimum | - | 2.70 | Minimum | - |
| E.02.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.02.005 | Bedroom 2 | 5.40 | High | - | 5.40 | High | - |
| E.02.006 | LKD | 7.00 | High | Compliant | 7.00 | High | Compliant |
| E.02.006 | Bedroom 1 | 6.70 | High | - | 6.70 | High | - |
| E.02.007 | LKD | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.02.007 | Bedroom 1 | 1.30 | Below Minimum | Non-Compliant | 1.30 | Below Minimum | Non-Compliant |
| E.02.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.02.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.02.009 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.02.009 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.02.009 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.22 SE Results: Block E - Apartment Units - Level 03

| Table No. C.3.22 - Sunlight Exposure Results: Block E - Apartment Units - Level 03 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.03.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.03.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.03.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.03.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.03.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.03.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.03.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.03.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.03.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.03.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.03.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.03.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.03.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.03.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.03.005 | Bedroom 2 | 5.60 | High | - | 5.60 | High | - |
| E.03.006 | LKD | 7.20 | High | Compliant | 7.20 | High | Compliant |
| E.03.006 | Bedroom 1 | 7.00 | High | - | 7.00 | High | - |
| E.03.007 | LKD | 1.60 | Minimum | Compliant | 1.60 | Minimum | Compliant |
| E.03.007 | Bedroom 1 | 1.60 | Minimum | - | 1.60 | Minimum | - |
| E.03.008 | LKD | 0.40 | Below Minimum | Non-Compliant | 0.40 | Below Minimum | Non-Compliant |
| E.03.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.03.009 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.03.009 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.03.009 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.23 SE Results: Block E - Apartment Units - Level 04

| Table No. C.3.23 - Sunlight Exposure Results: Block E - Apartment Units - Level 04 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.04.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.04.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.04.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.04.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.04.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.04.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.04.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.04.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.04.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.04.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.04.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.04.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.04.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.04.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.04.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.04.006 | LKD | 7.40 | High | Compliant | 7.40 | High | Compliant |
| E.04.006 | Bedroom 1 | 7.10 | High | - | 7.10 | High | - |
| E.04.006 | Bedroom 2 | 2.00 | Minimum | - | 2.00 | Minimum | - |
| E.04.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.04.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.04.007 | Bedroom 2 | 2.30 | Minimum | Compliant | 2.30 | Minimum | Compliant |
| E.04.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.04.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.04.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.24 SE Results: Block E - Apartment Units - Level 05

| Table No. C.3.24 - Sunlight Exposure Results: Block E - Apartment Units - Level 05 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.05.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.05.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.05.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.05.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.05.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.05.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.05.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.05.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.05.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.05.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.05.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.05.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.05.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.05.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.05.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.05.006 | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| E.05.006 | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| E.05.006 | Bedroom 2 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.05.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.05.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.05.007 | Bedroom 2 | 2.50 | Minimum | Compliant | 2.50 | Minimum | Compliant |
| E.05.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.05.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.05.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.25 SE Results: Block E - Apartment Units - Level 06

| Table No. C.3.25 - Sunlight Exposure Results: Block E - Apartment Units - Level 06 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.06.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.06.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.06.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.06.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.06.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.06.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.06.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.06.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.06.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.06.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.06.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.06.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.06.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.06.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.06.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.06.006 | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| E.06.006 | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| E.06.006 | Bedroom 2 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.06.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.06.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.06.007 | Bedroom 2 | 2.50 | Minimum | Compliant | 2.50 | Minimum | Compliant |
| E.06.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.06.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.06.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.26 SE Results: Block E - Apartment Units - Level 07

| Table No. C.3.26 - Sunlight Exposure Results: Block E - Apartment Units - Level 07 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.07.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.07.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.07.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.07.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.07.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.07.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.07.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.07.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.07.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.07.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.07.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.07.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.07.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.07.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.07.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.07.006 | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| E.07.006 | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| E.07.006 | Bedroom 2 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.07.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.07.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.07.007 | Bedroom 2 | 2.50 | Minimum | Compliant | 2.50 | Minimum | Compliant |
| E.07.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.07.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.07.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.27 SE Results: Block E - Apartment Units - Level 08

| Table No. C.3.27 - Sunlight Exposure Results: Block E - Apartment Units - Level 08 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.08.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.08.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.08.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.08.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.08.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.08.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.08.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.08.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.08.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.08.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.08.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.08.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.08.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.08.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.08.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.08.006 | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| E.08.006 | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| E.08.006 | Bedroom 2 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.08.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.08.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.08.007 | Bedroom 2 | 2.50 | Minimum | Compliant | 2.50 | Minimum | Compliant |
| E.08.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.08.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.08.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.28 SE Results: Block E - Apartment Units - Level 09

| Table No. C.3.28 - Sunlight Exposure Results: Block E - Apartment Units - Level 09 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.09.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.09.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.09.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.09.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.09.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.09.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.09.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.09.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.09.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.09.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.09.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.09.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.09.005 | LKD | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.09.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.09.005 | Bedroom 2 | 5.70 | High | - | 5.70 | High | - |
| E.09.006 | LKD | 7.70 | High | Compliant | 7.70 | High | Compliant |
| E.09.006 | Bedroom 1 | 7.30 | High | - | 7.30 | High | - |
| E.09.006 | Bedroom 2 | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.09.007 | LKD | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| E.09.007 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.09.007 | Bedroom 2 | 2.50 | Minimum | Compliant | 2.50 | Minimum | Compliant |
| E.09.008 | LKD | 0.00 | Below Minimum | Non-Compliant | 0.00 | Below Minimum | Non-Compliant |
| E.09.008 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.09.008 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.29 SE Results: Block E - Apartment Units - Level 10 & 11

| Table No. C.3.29 - Sunlight Exposure Results: Block E - Apartment Units - Level 10 & 11 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.10.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.10.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.10.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.10.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.10.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.10.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.10.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.10.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.10.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.10.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.10.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.10.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.10.005 | LKD | 5.70 | High | - | 5.70 | High | - |
| E.10.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.10.005 | Bedroom 2 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.10.006 | LKD | 2.30 | Minimum | Compliant | 2.30 | Minimum | Compliant |
| E.10.006 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.10.006 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.11.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.11.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.11.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.11.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.11.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.11.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.11.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.11.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.11.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.11.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.11.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.11.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.11.005 | LKD | 5.70 | High | - | 5.70 | High | - |
| E.11.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.11.005 | Bedroom 2 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.11.006 | LKD | 2.30 | Minimum | Compliant | 2.30 | Minimum | Compliant |
| E.11.006 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.11.006 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.30 SE Results: Block E - Apartment Units - Level 12 & 13

| Table No. C.3.30 - Sunlight Exposure Results: Block E - Apartment Units - Level 12 & 13 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| E.12.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.12.001 | Bedroom 1 | 1.10 | Below Minimum | Non-Compliant | 1.10 | Below Minimum | Non-Compliant |
| E.12.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.12.002 | LKD | 2.50 | Minimum | - | 2.50 | Minimum | - |
| E.12.002 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.12.002 | Bedroom 2 | 5.50 | High | Compliant | 5.50 | High | Compliant |
| E.12.003 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.12.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.12.003 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| E.12.004 | LKD | 3.90 | Medium | - | 3.90 | Medium | - |
| E.12.004 | Bedroom 1 | 8.20 | High | Compliant | 8.20 | High | Compliant |
| E.12.004 | Bedroom 2 | 7.40 | High | - | 7.40 | High | - |
| E.12.005 | LKD | 5.70 | High | - | 5.70 | High | - |
| E.12.005 | Bedroom 1 | 7.60 | High | Compliant | 7.60 | High | Compliant |
| E.12.005 | Bedroom 2 | 2.80 | Minimum | - | 2.80 | Minimum | - |
| E.12.006 | LKD | 2.30 | Minimum | Compliant | 2.30 | Minimum | Compliant |
| E.12.006 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.12.006 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.13.001 | LKD | 0.10 | Below Minimum | - | 0.10 | Below Minimum | - |
| E.13.001 | Bedroom 1 | 2.30 | Minimum | Compliant | 2.30 | Minimum | Compliant |
| E.13.001 | Bedroom 2 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| E.13.001 | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.13.002 | LKD | 5.50 | High | - | 5.50 | High | - |
| E.13.002 | Bedroom 1 | 9.40 | High | Compliant | 9.40 | High | Compliant |
| E.13.002 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.13.002 | Bedroom 3 | 7.40 | High | - | 7.40 | High | - |
| E.13.003 | LKD | 7.80 | High | - | 7.80 | High | - |
| E.13.003 | Bedroom 1 | 7.40 | High | - | 7.40 | High | - |
| E.13.003 | Bedroom 2 | 8.00 | High | Compliant | 8.00 | High | Compliant |
| E.13.003 | Bedroom 3 | 7.60 | High | - | 7.60 | High | - |
| E.14.001 | LKD | 4.10 | High | Compliant | 4.10 | High | Compliant |
| E.14.001 | Bedroom 1 | 2.10 | Minimum | - | 2.10 | Minimum | - |
| E.14.001 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.14.001 | Bedroom 3 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| E.14.002 | LKD | 8.30 | High | Compliant | 8.30 | High | Compliant |
| E.14.002 | Bedroom 1 | 7.80 | High | - | 7.80 | High | - |
| E.14.002 | Bedroom 2 | 7.60 | High | - | 7.60 | High | - |
| E.14.002 | Bedroom 3 | 7.60 | High | - | 7.60 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.31 SE Results: Block H - Apartment Units - Level 01

| Table No. C.3.31 - Sunlight Exposure Results: Block H - Apartment Units - Level 01 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| H.01.001 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| H.01.001 | Bedroom 1 | 6.20 | High | - | 6.20 | High | - |
| H.01.001 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| H.01.002 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.01.002 | Bedroom 1 | 4.10 | High | - | 4.10 | High | - |
| H.01.003 | LKD | 4.10 | High | - | 4.10 | High | - |
| H.01.003 | Bedroom 1 | 5.40 | High | Compliant | 5.40 | High | Compliant |
| H.01.004 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.01.004 | Bedroom 1 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.01.004 | Bedroom 2 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.01.005 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.70 | Minimum | Compliant |
| H.01.005 | Bedroom 1 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.01.006 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.01.006 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.01.007 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.01.007 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.01.008 | LKD | 5.80 | High | Compliant | 5.80 | High | Compliant |
| H.01.008 | Bedroom 1 | 3.80 | Medium | - | 3.80 | Medium | - |
| H.01.008 | Bedroom 2 | 5.20 | High | - | 5.20 | High | - |
| H.01.009 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.01.009 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.01.010 | LKD | 6.20 | High | Compliant | 6.20 | High | Compliant |
| H.01.010 | Bedroom 1 | 4.20 | High | - | 5.80 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.32 SE Results: Block H - Apartment Units - Level 02

| Table No. C.3.32 - Sunlight Exposure Results: Block H - Apartment Units - Level 02 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| H.02.001 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| H.02.001 | Bedroom 1 | 6.20 | High | - | 6.20 | High | - |
| H.02.001 | Bedroom 2 | 5.80 | High | - | 5.80 | High | - |
| H.02.002 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.02.002 | Bedroom 1 | 5.70 | High | - | 5.70 | High | - |
| H.02.003 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.02.003 | Bedroom 1 | 5.70 | High | - | 5.70 | High | - |
| H.02.004 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.02.004 | Bedroom 1 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.02.004 | Bedroom 2 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.02.005 | LKD | 1.70 | Minimum | Compliant | 1.70 | Minimum | Compliant |
| H.02.005 | Bedroom 1 | 0.80 | Below Minimum | - | 0.80 | Below Minimum | - |
| H.02.005 | Bedroom 2 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.02.006 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.02.006 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.02.007 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.02.007 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.02.008 | LKD | 6.20 | High | Compliant | 6.20 | High | Compliant |
| H.02.008 | Bedroom 1 | 3.70 | Medium | - | 3.70 | Medium | - |
| H.02.008 | Bedroom 2 | 5.40 | High | - | 5.40 | High | - |
| H.02.009 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| H.02.009 | Bedroom 1 | 5.30 | High | - | 5.30 | High | - |
| H.02.009 | Bedroom 2 | 5.50 | High | - | 5.50 | High | - |
| H.02.010 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.02.010 | Bedroom 1 | 4.10 | High | - | 4.10 | High | - |
| H.02.011 | LKD | 4.10 | High | - | 4.10 | High | - |
| H.02.011 | Bedroom 1 | 5.40 | High | Compliant | 5.40 | High | Compliant |
| H.02.012 | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| H.02.012 | Bedroom 1 | 5.40 | High | - | 5.40 | High | - |
| H.02.012 | Bedroom 2 | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.02.012 | Bedroom 3 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.02.013 | LKD | 1.20 | Below Minimum | Non-Compliant | 1.20 | Below Minimum | Non-Compliant |
| H.02.013 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| H.02.013 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| H.02.014 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.02.014 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.02.015 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.02.015 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |
| H.02.016 | LKD | 6.20 | High | Compliant | 6.20 | High | Compliant |
| H.02.016 | Bedroom 1 | 6.20 | High | - | 6.20 | High | - |
| H.02.016 | Bedroom 2 | 5.80 | High | - | 5.80 | High | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.3.33 SE Results: Block H - Apartment Units - Level 03

| Table No. C.3.33 - Sunlight Exposure Results: Block H - Apartment Units - Level 03 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Unit Number | Room Description | Deciduous Trees as Opaque Objects* | | | Without Deciduous Trees* | | |
| | | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** | SE Hours on March 21st | Level of SE on March 21st*** | Unit compliance based on highest performing room** |
| H.03.001 | LKD | 9.40 | High | Compliant | 9.40 | High | Compliant |
| H.03.001 | Bedroom 1 | 5.80 | High | - | 5.80 | High | - |
| H.03.001 | Bedroom 2 | 5.80 | High | - | 5.80 | High | - |
| H.03.002 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.03.002 | Bedroom 1 | 5.70 | High | - | 5.70 | High | - |
| H.03.003 | LKD | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.03.003 | Bedroom 1 | 5.70 | High | - | 5.70 | High | - |
| H.03.004 | LKD | 0.70 | Below Minimum | - | 0.70 | Below Minimum | - |
| H.03.004 | Bedroom 1 | 5.70 | High | - | 5.70 | High | - |
| H.03.004 | Bedroom 2 | 6.10 | High | Compliant | 6.10 | High | Compliant |
| H.03.004 | Bedroom 3 | 0.20 | Below Minimum | - | 0.20 | Below Minimum | - |
| H.03.005 | LKD | 1.40 | Below Minimum | Non-Compliant | 1.40 | Below Minimum | Non-Compliant |
| H.03.005 | Bedroom 1 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| H.03.005 | Bedroom 2 | 0.00 | Below Minimum | - | 0.00 | Below Minimum | - |
| H.03.006 | LKD | 1.00 | Below Minimum | Non-Compliant | 1.00 | Below Minimum | Non-Compliant |
| H.03.006 | Bedroom 1 | 0.40 | Below Minimum | - | 0.40 | Below Minimum | - |

* Rooms are tested with deciduous trees as opaque objects and without deciduous trees to account for the range of possible sunlight hours.

** The BRE Guidelines recommend that for a unit to be compliant any room within the unit should receive a minimum of 1.5 hours of direct sunlight on March 21st, preferably a main living room. The SE circa compliance rates can be found in section 5.2.2 on page 30.

*** For the interpretation of levels of Sunlight Exposure please refer to "3.3 Definition of Levels of Sunlight Exposure" on page 13.

For floor plans of the assessed units please refer to section C.1 on page 93.

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## C.4 Sun On Ground (SOG) in Proposed Outdoor Amenity Areas

Below is an example of the table used to describe SOG in proposed gardens and amenity spaces.

| | Table Example. C.4 - Scheme Performance SOG | | | | |
|---|---|---|---|---|---|
| Assigned Area Number | Assessed Area | Area Capable of Receiving 2 Hours of Sunlight on March 21st | Recommended Minimum | Level of Compliance with BRE Guidelines | Meets BR 209 Criteria |
| **A** | **B** | **C** | **D** | **E** | **F** |

**A: Assigned Area Number**

This column indicates the number that 3DDB have assigned to the assessed areas, which is included for the sole purpose of aiding in the identification of the corresponding space shown in the corresponding figure.

**B: Assessed Area**

This column identifies the assessed garden/amenity area.

**C: Area Capable of Receiving 2 Hours of Sunlight on March 21st**

The percentage of the proposed area that can receive more than 2 hours of sunlight on March 21st.

**D: Recommended Minimum**

The BRE Guidelines state that the percentage of a garden/amenity area that can receive more than 2 hours of sunlight on March 21st should be 50%. The target value for all spaces is set to 50%.

**E: Level of Compliance with BRE Guidelines**

This column states the compliance of the assessed space with the *BRE Target Value*. If the assessed garden or amenity area complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the garden or amenity area does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

**F: Meets BR 209 Criteria**

This column states if the assessed area achieves the recommended level of sunlight on March 21st as per BR 209.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## C.4.1 Sun On Ground in Proposed Public Open Space

| Table No. C.4.1 - SOG in Proposed Outdoor Amenity Areas Results: Public Open Space | | | | | |
|---|---|---|---|---|---|
| Assigned Area Number | Assessed Area | Area Capable of Receiving 2 Hours of Sunlight on March 21st | Recommended minimum | Level of Compliance with BRE Guidelines* | Meets BR 209 Criteria* |
| 1 | Western Entrance | 92.55% | 50.00% | BRE Compliant | Yes |
| 2 | Central Park | 95.99% | 50.00% | BRE Compliant | Yes |
| 3 | Coastal Gardens | 99.08% | 50.00% | BRE Compliant | Yes |
| * The BRE Guidelines recommend that for a garden or amenity to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on March 21st. | | | | | |

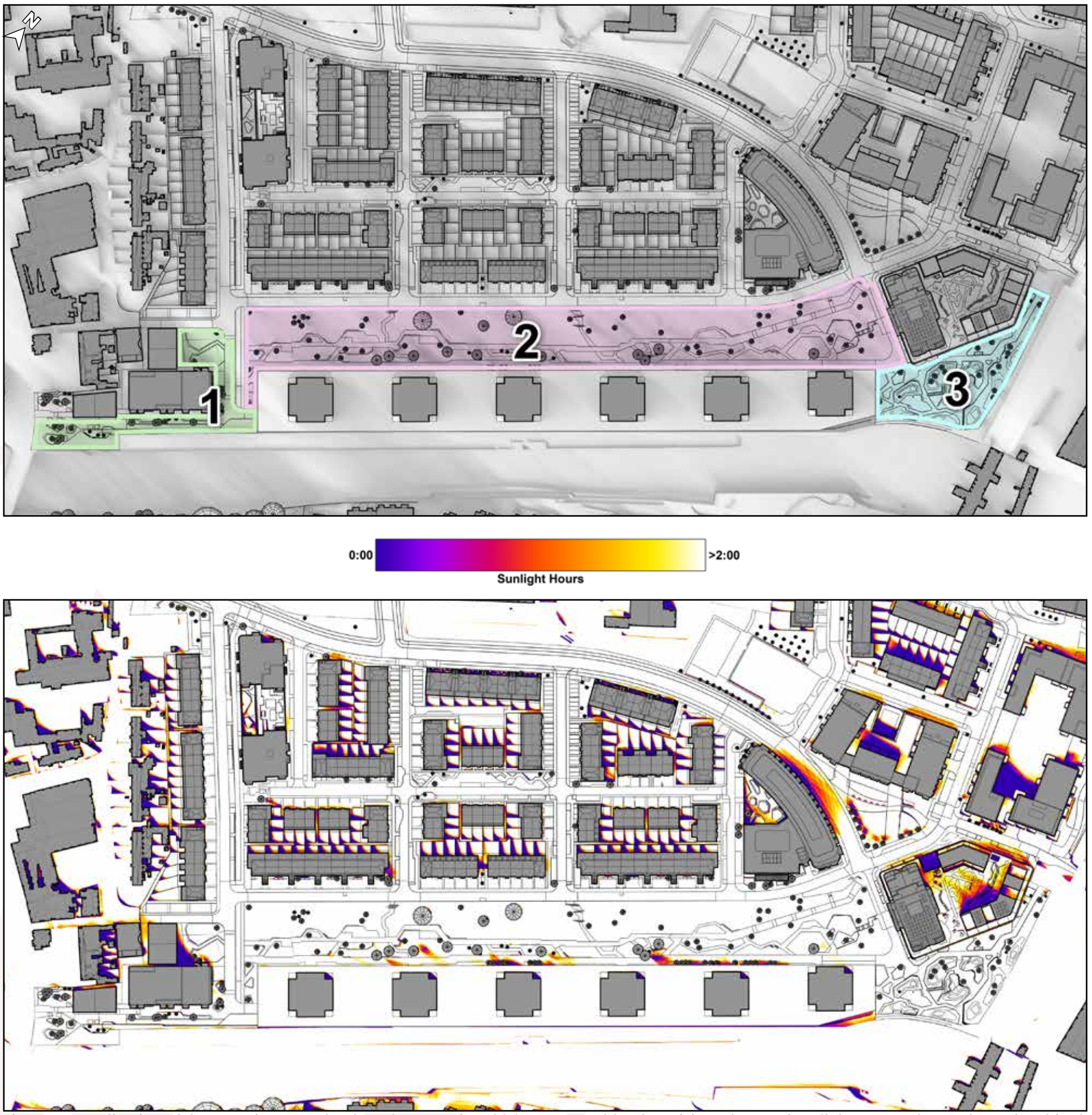


Figure C.51: Indication of the amenity areas that have been analysed (T), Area capable of receiving 2 hours of sunlight on March 21st shown in white (B)

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## C.4.2 Sun On Ground in Proposed Public Open Space

| Table No. C.4.2 - SOG in Proposed Outdoor Amenity Areas Results: Public Open Space | | | | | |
|---|---|---|---|---|---|
| Assigned Area Number | Assessed Area | Area Capable of Receiving 2 Hours of Sunlight on March 21st | Recommended minimum | Level of Compliance with BRE Guidelines* | Meets BR 209 Criteria* |
| 4 | Community Park | 98.90% | 50.00% | BRE Compliant | Yes |
| 5 | Duplex Amenity | 98.70% | 50.00% | BRE Compliant | Yes |
| 6 | Podium, Block E | 45.84% | 50.00% | 92% | No |
| 7 | Ground Level, Block H | 62.51% | 50.00% | BRE Compliant | Yes |
| 8 | Podium, Block H | 90.30% | 50.00% | BRE Compliant | Yes |
| * The BRE Guidelines recommend that for a garden or amenity to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on March 21st. | | | | | |

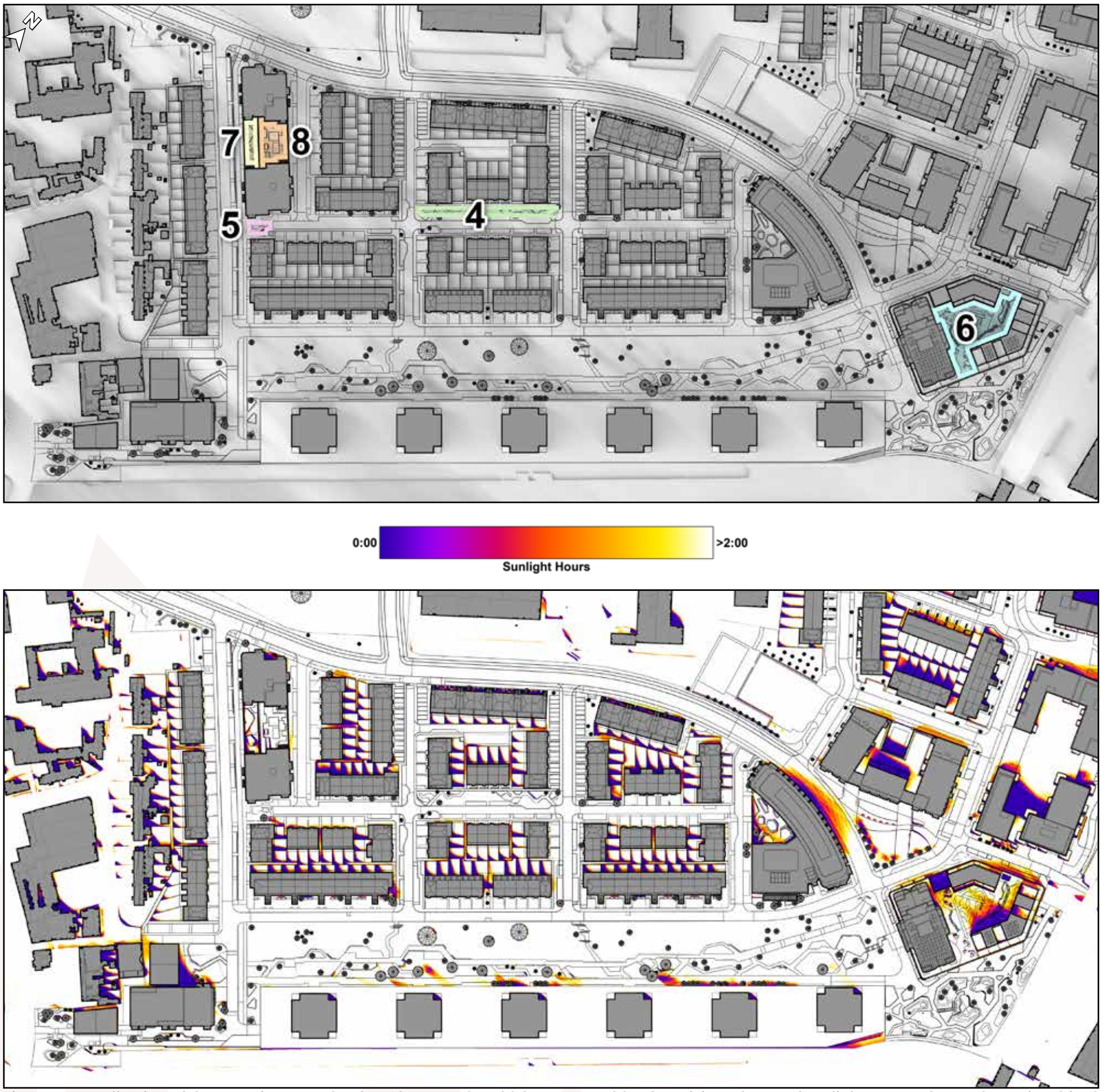


Figure C.52: Indication of the amenity areas that have been analysed (T), Area capable of receiving 2 hours of sunlight on March 21st shown in white (B)

RECEIVED: 24/03/2025

# D.0 Supplementary Study Results

## D.1 SDA study, under the I.S. EN 17037 criteria

Below is an example of the table used to describe the supplementary study results for proposed units in the assessment of SDA under the I.S. EN 17037 criteria.

| Table Example. D.1 - Supplementary SDA Results (I.S. EN 17037 criteria) | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria |
| | | Area above 300 Lux | Area above 100 Lux | Area above 300 Lux | Area above 100 Lux | |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** |

**A: Unit Number**

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

**B: Room Description**

*Room Description* details which room in the unit has been assessed, e.g. bedroom, LKD, etc.

**C: % of area above 300 Lux (No Trees)**

I.S. EN 17037 recommends at least 50% of the working plane receives above 300 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 300 lux for at least half the daylight hours when the assessment is carried out without trees in the analytical model.

**D: % of area above 100 Lux (No Trees)**

I.S. EN 17037 recommends at least 95% of the working plane receives above 100 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 100 lux for at least half the daylight hours when the assessment is carried out without trees in the analytical model.

**E: % of area above 300 Lux (Winter Trees)**

I.S. EN 17037 recommends at least 50% of the working plane receives above 300 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 300 lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions, i.e. full leaf and bare branch.

**F: % of area above 100 Lux (Winter Trees)**

I.S. EN 17037 recommends at least 95% of the working plane receives above 100 lux for at least half the daylight hours.

This column states percentage of the working plane of the assessed room that is capable of receiving more than 100 lux for at least half the daylight hours with the foliage of deciduous trees varied to account for summer and winter conditions.

**G: Compliance with I.S. EN 17037 Criteria**

This column states if the assessed room achieves the recommended level of daylight as per I.S. EN 17037 with consideration to the various tree states.

If the recommended lux levels are achieved on the working plane, for half the daylight hours, both with and without trees, this column will state: *'Compliant'*.

If the recommended lux levels are not achieved on the working plane, for half the daylight hours, both with and without trees, this column will state: *'Non-compliant'*.

If the recommended lux levels are achieved on the working plane, for half the daylight hours, without trees but are not achieved with trees, this column will state: *'Trees affecting compliance'*.

Compliance rates will be stated for SDA compliance with trees in all of the above states.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation of these figures may yield a negligible difference and should not be considered an error.

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## D.1.1 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

Table No. D.1.1 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 24A | LKD | 53% | 100% | 44% | 100% | Trees affecting compliance |
| 24A | Bedroom 1 | 23% | 84% | 23% | 82% | Non-compliant |
| 24A | Bedroom 2 | 53% | 100% | 17% | 71% | Trees affecting compliance |
| 24A | Study | 100% | 100% | 95% | 100% | Compliant |
| 25A | LKD | 41% | 79% | 41% | 78% | Non-compliant |
| 25A | Bedroom 1 | 38% | 100% | 38% | 100% | Non-compliant |
| 25A | Bedroom 2 | 40% | 99% | 31% | 94% | Non-compliant |
| 26A | LKD | 42% | 80% | 42% | 80% | Non-compliant |
| 26A | Bedroom 1 | 48% | 100% | 48% | 100% | Non-compliant |
| 26A | Bedroom 2 | 44% | 100% | 39% | 97% | Non-compliant |
| 27A | LKD | 42% | 80% | 42% | 80% | Non-compliant |
| 27A | Bedroom 1 | 48% | 100% | 48% | 100% | Non-compliant |
| 27A | Bedroom 2 | 39% | 99% | 30% | 80% | Non-compliant |
| 28A | LKD | 43% | 81% | 43% | 81% | Non-compliant |
| 28A | Bedroom 1 | 50% | 100% | 50% | 100% | Compliant |
| 28A | Bedroom 2 | 40% | 100% | 30% | 81% | Non-compliant |
| 29A | LKD | 43% | 84% | 43% | 84% | Non-compliant |
| 29A | Bedroom 1 | 48% | 100% | 48% | 100% | Non-compliant |
| 29A | Bedroom 2 | 39% | 97% | 33% | 93% | Non-compliant |
| 30A | LKD | 43% | 80% | 43% | 80% | Non-compliant |
| 30A | Bedroom 1 | 50% | 100% | 50% | 100% | Compliant |
| 30A | Bedroom 2 | 40% | 100% | 30% | 83% | Non-compliant |
| 31A | LKD | 47% | 91% | 47% | 91% | Non-compliant |
| 31A | Bedroom 1 | 48% | 100% | 48% | 100% | Non-compliant |
| 31A | Bedroom 2 | 37% | 100% | 34% | 100% | Non-compliant |
| 32A | LKD | 43% | 90% | 43% | 89% | Non-compliant |
| 32A | Bedroom 1 | 44% | 100% | 44% | 100% | Non-compliant |
| 32A | Bedroom 2 | 39% | 100% | 30% | 94% | Non-compliant |
| 33A | LKD | 42% | 100% | 41% | 97% | Non-compliant |
| 33A | Bedroom 1 | 25% | 88% | 25% | 88% | Non-compliant |
| 33A | Bedroom 2 | 39% | 100% | 29% | 95% | Non-compliant |
| 33A | Study | 100% | 100% | 25% | 98% | Trees affecting compliance |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

RECEIVED: 24/05/2025

## D.1.2 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

Table No. D.1.2 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 24B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 24B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 25B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 25B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 26B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 26B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 27B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 27B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 28B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 28B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 29B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 29B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 30B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 30B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 31B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 31B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 32B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 32B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 33B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 33B | Living Room | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

RECEIVED: 24/05/2025

## D.1.3 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

Table No. D.1.3 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 24B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 24B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 24B | Bedroom 3 | 100% | 100% | 78% | 100% | Compliant |
| 25B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 25B | Bedroom 2 | 37% | 100% | 37% | 100% | Non-compliant |
| 25B | Bedroom 3 | 100% | 100% | 72% | 100% | Compliant |
| 26B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 26B | Bedroom 2 | 30% | 100% | 30% | 100% | Non-compliant |
| 26B | Bedroom 3 | 81% | 100% | 69% | 100% | Compliant |
| 27B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 27B | Bedroom 2 | 40% | 100% | 38% | 100% | Non-compliant |
| 27B | Bedroom 3 | 75% | 100% | 63% | 100% | Compliant |
| 28B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 28B | Bedroom 2 | 32% | 100% | 32% | 100% | Non-compliant |
| 28B | Bedroom 3 | 66% | 100% | 59% | 100% | Compliant |
| 29B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 29B | Bedroom 2 | 41% | 100% | 41% | 100% | Non-compliant |
| 29B | Bedroom 3 | 69% | 100% | 59% | 100% | Compliant |
| 30B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 30B | Bedroom 2 | 33% | 100% | 33% | 100% | Non-compliant |
| 30B | Bedroom 3 | 81% | 100% | 72% | 100% | Compliant |
| 31B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 31B | Bedroom 2 | 41% | 100% | 41% | 100% | Non-compliant |
| 31B | Bedroom 3 | 84% | 100% | 69% | 100% | Compliant |
| 32B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 32B | Bedroom 2 | 32% | 100% | 32% | 100% | Non-compliant |
| 32B | Bedroom 3 | 81% | 100% | 66% | 100% | Compliant |
| 33B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 33B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 33B | Bedroom 3 | 75% | 100% | 66% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.4 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

Table No. D.1.4 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 66A | LKD | 52% | 100% | 41% | 99% | Trees affecting compliance |
| 66A | Bedroom 1 | 20% | 84% | 20% | 79% | Non-compliant |
| 66A | Bedroom 2 | 48% | 100% | 39% | 100% | Non-compliant |
| 66A | Study | 100% | 100% | 93% | 100% | Compliant |
| 67A | LKD | 40% | 86% | 40% | 85% | Non-compliant |
| 67A | Bedroom 1 | 33% | 100% | 31% | 100% | Non-compliant |
| 67A | Bedroom 2 | 36% | 94% | 27% | 77% | Non-compliant |
| 68A | LKD | 41% | 84% | 41% | 84% | Non-compliant |
| 68A | Bedroom 1 | 46% | 100% | 46% | 100% | Non-compliant |
| 68A | Bedroom 2 | 39% | 97% | 31% | 86% | Non-compliant |
| 69A | LKD | 37% | 72% | 37% | 72% | Non-compliant |
| 69A | Bedroom 1 | 44% | 100% | 44% | 100% | Non-compliant |
| 69A | Bedroom 2 | 37% | 96% | 26% | 79% | Non-compliant |
| 70A | LKD | 40% | 76% | 40% | 76% | Non-compliant |
| 70A | Bedroom 1 | 46% | 100% | 46% | 100% | Non-compliant |
| 70A | Bedroom 2 | 37% | 100% | 33% | 84% | Non-compliant |
| 71A | LKD | 41% | 78% | 41% | 78% | Non-compliant |
| 71A | Bedroom 1 | 44% | 100% | 44% | 100% | Non-compliant |
| 71A | Bedroom 2 | 39% | 100% | 33% | 97% | Non-compliant |
| 72A | LKD | 41% | 79% | 41% | 79% | Non-compliant |
| 72A | Bedroom 1 | 48% | 100% | 48% | 100% | Non-compliant |
| 72A | Bedroom 2 | 39% | 100% | 34% | 96% | Non-compliant |
| 73A | LKD | 46% | 91% | 46% | 91% | Non-compliant |
| 73A | Bedroom 1 | 50% | 100% | 50% | 100% | Compliant |
| 73A | Bedroom 2 | 37% | 100% | 31% | 89% | Non-compliant |
| 74A | LKD | 42% | 89% | 42% | 89% | Non-compliant |
| 74A | Bedroom 1 | 44% | 100% | 44% | 100% | Non-compliant |
| 74A | Bedroom 2 | 41% | 100% | 31% | 87% | Non-compliant |
| 75A | LKD | 40% | 98% | 38% | 95% | Non-compliant |
| 75A | Bedroom 1 | 20% | 80% | 20% | 77% | Non-compliant |
| 75A | Bedroom 2 | 39% | 100% | 27% | 85% | Non-compliant |
| 75A | Study | 100% | 100% | 64% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.5 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

Table No. D.1.5 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 66B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 66B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 67B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 67B | Living Room | 100% | 100% | 98% | 100% | Compliant |
| 68B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 68B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 69B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 69B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 70B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 70B | Living Room | 100% | 100% | 95% | 100% | Compliant |
| 71B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 71B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 72B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 72B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 73B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 73B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 74B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 74B | Living Room | 100% | 100% | 98% | 100% | Compliant |
| 75B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 75B | Living Room | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.6 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

Table No. D.1.6 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 66B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 66B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 66B | Bedroom 3 | 81% | 100% | 63% | 100% | Compliant |
| 67B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 67B | Bedroom 2 | 37% | 100% | 37% | 100% | Non-compliant |
| 67B | Bedroom 3 | 69% | 100% | 53% | 100% | Compliant |
| 68B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 68B | Bedroom 2 | 30% | 100% | 30% | 100% | Non-compliant |
| 68B | Bedroom 3 | 66% | 100% | 50% | 100% | Compliant |
| 69B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 69B | Bedroom 2 | 38% | 100% | 38% | 100% | Non-compliant |
| 69B | Bedroom 3 | 59% | 100% | 50% | 100% | Compliant |
| 70B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 70B | Bedroom 2 | 32% | 100% | 32% | 100% | Non-compliant |
| 70B | Bedroom 3 | 63% | 100% | 53% | 100% | Compliant |
| 71B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 71B | Bedroom 2 | 40% | 100% | 40% | 100% | Non-compliant |
| 71B | Bedroom 3 | 72% | 100% | 56% | 100% | Compliant |
| 72B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 72B | Bedroom 2 | 33% | 100% | 33% | 100% | Non-compliant |
| 72B | Bedroom 3 | 84% | 100% | 63% | 100% | Compliant |
| 73B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 73B | Bedroom 2 | 40% | 100% | 40% | 100% | Non-compliant |
| 73B | Bedroom 3 | 75% | 100% | 63% | 100% | Compliant |
| 74B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 74B | Bedroom 2 | 32% | 100% | 32% | 100% | Non-compliant |
| 74B | Bedroom 3 | 72% | 100% | 63% | 100% | Compliant |
| 75B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 75B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 75B | Bedroom 3 | 69% | 100% | 50% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.7 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.1.7 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD3 - Various Units | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 1A | LKD | 97% | 100% | 89% | 100% | Compliant |
| 1A | Bedroom 1 | 50% | 100% | 25% | 92% | Trees affecting compliance |
| 1A | Bedroom 2 | 16% | 100% | 14% | 92% | Non-compliant |
| 1B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 1B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 1B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 1B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 1B | Bedroom 3 | 86% | 100% | 86% | 100% | Compliant |
| 6A | LKD | 95% | 100% | 95% | 100% | Compliant |
| 6A | Bedroom 1 | 39% | 100% | 39% | 100% | Non-compliant |
| 6A | Bedroom 2 | 21% | 100% | 13% | 89% | Non-compliant |
| 6B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 6B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 6B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 6B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 6B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 15A | LKD | 86% | 100% | 85% | 100% | Compliant |
| 15A | Bedroom 1 | 42% | 100% | 42% | 100% | Non-compliant |
| 15A | Bedroom 2 | 29% | 100% | 24% | 100% | Non-compliant |
| 15B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 15B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 15B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 15B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 15B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 20A | LKD | 100% | 100% | 99% | 100% | Compliant |
| 20A | Bedroom 1 | 43% | 100% | 40% | 100% | Non-compliant |
| 20A | Bedroom 2 | 32% | 100% | 24% | 100% | Non-compliant |
| 20B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 20B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 20B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 20B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 20B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 21A | LKD | 45% | 100% | 45% | 100% | Non-compliant |
| 21A | Bedroom 1 | 12% | 64% | 11% | 64% | Non-compliant |
| 21A | Bedroom 2 | 54% | 100% | 29% | 100% | Trees affecting compliance |
| 21B | Kitchen/Dining | 96% | 100% | 96% | 100% | Compliant |
| 21B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 21B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 21B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 21B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.8 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.1.8 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD3 - Various Units | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 36A | LKD | 63% | 100% | 63% | 100% | Compliant |
| 36A | Bedroom 1 | 31% | 90% | 30% | 90% | Non-compliant |
| 36A | Bedroom 2 | 24% | 100% | 13% | 87% | Non-compliant |
| 36B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 36B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 36B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 36B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 36B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 43A | LKD | 59% | 100% | 58% | 100% | Compliant |
| 43A | Bedroom 1 | 15% | 74% | 15% | 69% | Non-compliant |
| 43A | Bedroom 2 | 56% | 100% | 43% | 100% | Trees affecting compliance |
| 43B | Kitchen/Dining | 99% | 100% | 99% | 100% | Compliant |
| 43B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 43B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 43B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 43B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 58A | LKD | 67% | 100% | 65% | 100% | Compliant |
| 58A | Bedroom 1 | 32% | 90% | 30% | 87% | Non-compliant |
| 58A | Bedroom 2 | 27% | 100% | 22% | 98% | Non-compliant |
| 58B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 58B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 58B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 58B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 58B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 63A | LKD | 48% | 100% | 47% | 100% | Non-compliant |
| 63A | Bedroom 1 | 13% | 62% | 13% | 62% | Non-compliant |
| 63A | Bedroom 2 | 56% | 100% | 32% | 100% | Trees affecting compliance |
| 63B | Kitchen/Dining | 97% | 100% | 97% | 100% | Compliant |
| 63B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 63B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 63B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 63B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 78A | LKD | 64% | 100% | 64% | 100% | Compliant |
| 78A | Bedroom 1 | 31% | 90% | 31% | 90% | Non-compliant |
| 78A | Bedroom 2 | 17% | 98% | 10% | 60% | Non-compliant |
| 78B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 78B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 78B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 78B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 78B | Bedroom 3 | 91% | 100% | 77% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.9 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.1.9 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD3 - Various Units | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 89A | LKD | 56% | 100% | 52% | 100% | Compliant |
| 89A | Bedroom 1 | 18% | 73% | 12% | 65% | Non-compliant |
| 89A | Bedroom 2 | 67% | 100% | 30% | 100% | Trees affecting compliance |
| 89B | Kitchen/Dining | 94% | 100% | 93% | 100% | Compliant |
| 89B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 89B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 89B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 89B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 95A | LKD | 94% | 100% | 94% | 100% | Compliant |
| 95A | Bedroom 1 | 40% | 100% | 40% | 100% | Non-compliant |
| 95A | Bedroom 2 | 24% | 100% | 16% | 94% | Non-compliant |
| 95B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 95B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 95B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 95B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 95B | Bedroom 3 | 91% | 100% | 91% | 100% | Compliant |
| 106A | LKD | 68% | 100% | 65% | 100% | Compliant |
| 106A | Bedroom 1 | 21% | 99% | 15% | 79% | Non-compliant |
| 106A | Bedroom 2 | 57% | 100% | 46% | 100% | Trees affecting compliance |
| 106B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 106B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 106B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 106B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 106B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 109A | LKD | 57% | 100% | 54% | 100% | Compliant |
| 109A | Bedroom 1 | 13% | 73% | 12% | 65% | Non-compliant |
| 109A | Bedroom 2 | 52% | 100% | 33% | 100% | Trees affecting compliance |
| 109B | Kitchen/Dining | 93% | 100% | 93% | 100% | Compliant |
| 109B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 109B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 109B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 109B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 114A | LKD | 78% | 100% | 74% | 100% | Compliant |
| 114A | Bedroom 1 | 32% | 94% | 29% | 92% | Non-compliant |
| 114A | Bedroom 2 | 30% | 100% | 22% | 98% | Non-compliant |
| 114B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 114B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 114B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 114B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 114B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.10 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.1.10 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD3 - Various Units | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 127A | LKD | 66% | 100% | 64% | 100% | Compliant |
| 127A | Bedroom 1 | 21% | 92% | 20% | 83% | Non-compliant |
| 127A | Bedroom 2 | 30% | 100% | 27% | 97% | Non-compliant |
| 127B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 127B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 127B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 127B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 127B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 134A | LKD | 50% | 100% | 50% | 100% | Compliant |
| 134A | Bedroom 1 | 15% | 77% | 15% | 71% | Non-compliant |
| 134A | Bedroom 2 | 49% | 100% | 10% | 83% | Non-compliant |
| 134B | Kitchen/Dining | 95% | 100% | 94% | 100% | Compliant |
| 134B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 134B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 134B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 134B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 140A | LKD | 43% | 99% | 43% | 99% | Non-compliant |
| 140A | Bedroom 1 | 13% | 70% | 13% | 70% | Non-compliant |
| 140A | Bedroom 2 | 44% | 100% | 14% | 94% | Non-compliant |
| 140B | Kitchen/Dining | 96% | 100% | 96% | 100% | Compliant |
| 140B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 140B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 140B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 140B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 147A | LKD | 87% | 100% | 84% | 100% | Compliant |
| 147A | Bedroom 1 | 40% | 100% | 35% | 95% | Non-compliant |
| 147A | Bedroom 2 | 24% | 100% | 22% | 100% | Non-compliant |
| 147B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 147B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 147B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 147B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 147B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| * For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21. For floor plans of the assessed units please refer to section C.1 on page 93. | | | | | | |

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## D.1.11 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

Table No. D.1.11 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 100A | LKD | 93% | 100% | 91% | 100% | Compliant |
| 100A | Bedroom 1 | 44% | 100% | 33% | 100% | Non-compliant |
| 100A | Bedroom 2 | 24% | 100% | 5% | 79% | Non-compliant |
| 101A | LKD | 95% | 100% | 95% | 100% | Compliant |
| 101A | Bedroom 1 | 40% | 100% | 40% | 100% | Non-compliant |
| 101A | Bedroom 2 | 18% | 100% | 4% | 63% | Non-compliant |
| 102A | LKD | 93% | 100% | 93% | 100% | Compliant |
| 102A | Bedroom 1 | 44% | 100% | 44% | 100% | Non-compliant |
| 102A | Bedroom 2 | 24% | 100% | 19% | 100% | Non-compliant |
| 103A | LKD | 93% | 100% | 93% | 100% | Compliant |
| 103A | Bedroom 1 | 38% | 100% | 38% | 100% | Non-compliant |
| 103A | Bedroom 2 | 19% | 100% | 10% | 93% | Non-compliant |
| 104A | LKD | 73% | 100% | 73% | 100% | Compliant |
| 104A | Bedroom 1 | 37% | 100% | 37% | 100% | Non-compliant |
| 104A | Bedroom 2 | 24% | 100% | 19% | 100% | Non-compliant |
| 105A | LKD | 82% | 100% | 80% | 100% | Compliant |
| 105A | Bedroom 1 | 29% | 85% | 26% | 76% | Non-compliant |
| 105A | Bedroom 2 | 21% | 100% | 8% | 90% | Non-compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.12 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

Table No. D.1.12 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 100B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 100B | Living Room | 99% | 100% | 38% | 100% | Trees affecting compliance |
| 101B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 101B | Living Room | 93% | 100% | 88% | 100% | Compliant |
| 102B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 102B | Living Room | 98% | 100% | 96% | 100% | Compliant |
| 103B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 103B | Living Room | 97% | 100% | 46% | 100% | Trees affecting compliance |
| 104B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 104B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 105B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 105B | Living Room | 98% | 100% | 46% | 100% | Trees affecting compliance |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.13 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02

Table No. D.1.13 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 100B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 100B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 100B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 101B | Bedroom 1 | 49% | 100% | 49% | 100% | Non-compliant |
| 101B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 101B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 102B | Bedroom 1 | 50% | 100% | 50% | 100% | Compliant |
| 102B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 102B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 103B | Bedroom 1 | 51% | 100% | 51% | 100% | Compliant |
| 103B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 103B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 104B | Bedroom 1 | 56% | 100% | 53% | 100% | Compliant |
| 104B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 104B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 105B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 105B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 105B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.14 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00

Table No. D.1.14 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 119A | LKD | 62% | 100% | 61% | 100% | Compliant |
| 119A | Bedroom 1 | 21% | 62% | 20% | 58% | Non-compliant |
| 119A | Bedroom 2 | 25% | 100% | 8% | 92% | Non-compliant |
| 120A | LKD | 89% | 100% | 89% | 100% | Compliant |
| 120A | Bedroom 1 | 38% | 100% | 38% | 100% | Non-compliant |
| 120A | Bedroom 2 | 22% | 100% | 6% | 73% | Non-compliant |
| 121A | LKD | 92% | 100% | 91% | 100% | Compliant |
| 121A | Bedroom 1 | 42% | 100% | 42% | 100% | Non-compliant |
| 121A | Bedroom 2 | 25% | 100% | 5% | 63% | Non-compliant |
| 122A | LKD | 95% | 100% | 95% | 100% | Compliant |
| 122A | Bedroom 1 | 40% | 100% | 40% | 100% | Non-compliant |
| 122A | Bedroom 2 | 24% | 100% | 11% | 100% | Non-compliant |
| 123A | LKD | 92% | 100% | 92% | 100% | Compliant |
| 123A | Bedroom 1 | 42% | 100% | 42% | 100% | Non-compliant |
| 123A | Bedroom 2 | 25% | 100% | 5% | 66% | Non-compliant |
| 124A | LKD | 93% | 100% | 92% | 100% | Compliant |
| 124A | Bedroom 1 | 38% | 100% | 36% | 100% | Non-compliant |
| 124A | Bedroom 2 | 22% | 100% | 8% | 79% | Non-compliant |
| 125A | LKD | 88% | 100% | 76% | 100% | Compliant |
| 125A | Bedroom 1 | 40% | 100% | 37% | 99% | Non-compliant |
| 125A | Bedroom 2 | 25% | 100% | 5% | 64% | Non-compliant |
| 126A | LKD | 92% | 100% | 87% | 100% | Compliant |
| 126A | Bedroom 1 | 37% | 98% | 32% | 92% | Non-compliant |
| 126A | Bedroom 2 | 27% | 100% | 11% | 100% | Non-compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.15 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

Table No. D.1.15 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 119B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 119B | Living Room | 100% | 100% | 45% | 100% | Trees affecting compliance |
| 120B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 120B | Living Room | 100% | 100% | 97% | 100% | Compliant |
| 121B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 121B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 122B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 122B | Living Room | 99% | 100% | 56% | 100% | Compliant |
| 123B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 123B | Living Room | 100% | 100% | 99% | 100% | Compliant |
| 124B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 124B | Living Room | 99% | 100% | 98% | 100% | Compliant |
| 125B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 125B | Living Room | 100% | 100% | 100% | 100% | Compliant |
| 126B | Kitchen/Dining | 100% | 100% | 100% | 100% | Compliant |
| 126B | Living Room | 100% | 100% | 62% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.16 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

Table No. D.1.16 - Supplementary SDA Results (I.S. EN 17037 criteria): Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
|---|---|---|---|---|---|---|
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| 119B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 119B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 119B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 120B | Bedroom 1 | 57% | 100% | 57% | 100% | Compliant |
| 120B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 120B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 121B | Bedroom 1 | 59% | 100% | 57% | 100% | Compliant |
| 121B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 121B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 122B | Bedroom 1 | 57% | 100% | 56% | 100% | Compliant |
| 122B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 122B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 123B | Bedroom 1 | 59% | 100% | 56% | 100% | Compliant |
| 123B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 123B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 124B | Bedroom 1 | 59% | 100% | 56% | 100% | Compliant |
| 124B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 124B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 125B | Bedroom 1 | 60% | 100% | 59% | 100% | Compliant |
| 125B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 125B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| 126B | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| 126B | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| 126B | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.17 SDA Results: Block E - Duplex and Triplex Units - Level 01

| Table No. D.1.17 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Duplex and Triplex Units - Level 01 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.01.009 | Kitchen | 96% | 100% | 95% | 100% | Compliant |
| E.01.009 | Living Room | 43% | 100% | 36% | 100% | Non-compliant |
| E.01.010 | Kitchen | 73% | 99% | 71% | 99% | Compliant |
| E.01.010 | Living Room | 45% | 100% | 40% | 100% | Non-compliant |
| E.01.011 | Kitchen | 44% | 98% | 44% | 98% | Non-compliant |
| E.01.011 | Living Room | 24% | 100% | 22% | 94% | Non-compliant |
| E.01.012 | Kitchen | 61% | 100% | 60% | 100% | Compliant |
| E.01.012 | Living Room | 29% | 100% | 29% | 100% | Non-compliant |
| E.01.013 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.013 | Living Room | 39% | 100% | 34% | 100% | Non-compliant |
| E.01.014 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.014 | Living Room | 28% | 100% | 27% | 100% | Non-compliant |
| E.01.015 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.015 | Living Room | 29% | 100% | 29% | 100% | Non-compliant |
| E.01.016 | Kitchen | 98% | 100% | 98% | 100% | Compliant |
| E.01.016 | Study | 16% | 97% | 16% | 97% | Non-compliant |
| E.01.017 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.017 | Study | 19% | 100% | 19% | 100% | Non-compliant |
| E.01.018 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.018 | Living Room | 36% | 100% | 34% | 100% | Non-compliant |
| E.01.019 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.019 | Living Room | 37% | 100% | 18% | 97% | Non-compliant |
| E.01.020 | Kitchen | 100% | 100% | 100% | 100% | Compliant |
| E.01.020 | Living Room | 36% | 100% | 23% | 99% | Non-compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.18 SDA Results: Block E - Duplex and Triplex Units - Level 02

| Table No. D.1.18 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Duplex and Triplex Units - Level 02 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.01.009 | Bedroom 2 | 61% | 100% | 57% | 100% | Compliant |
| E.01.009 | Bedroom 3 | 93% | 100% | 90% | 100% | Compliant |
| E.01.009 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.010 | Bedroom 2 | 56% | 100% | 56% | 100% | Compliant |
| E.01.010 | Bedroom 3 | 82% | 100% | 82% | 100% | Compliant |
| E.01.010 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.011 | Bedroom 2 | 32% | 96% | 32% | 96% | Non-compliant |
| E.01.011 | Bedroom 3 | 66% | 100% | 66% | 100% | Compliant |
| E.01.011 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.012 | Bedroom 2 | 58% | 100% | 58% | 100% | Compliant |
| E.01.012 | Bedroom 3 | 58% | 100% | 57% | 100% | Compliant |
| E.01.012 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.013 | Bedroom 1 | 90% | 100% | 89% | 100% | Compliant |
| E.01.013 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.013 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.014 | Bedroom 2 | 62% | 100% | 62% | 100% | Compliant |
| E.01.014 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.014 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.015 | Bedroom 1 | 68% | 100% | 68% | 100% | Compliant |
| E.01.015 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.015 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.016 | Bedroom 2 | 54% | 100% | 50% | 100% | Compliant |
| E.01.016 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.016 | Bedroom 4 | 100% | 100% | 98% | 100% | Compliant |
| E.01.017 | Bedroom 2 | 79% | 100% | 79% | 100% | Compliant |
| E.01.017 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.017 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.018 | Bedroom 1 | 77% | 100% | 74% | 100% | Compliant |
| E.01.018 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.018 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.019 | Bedroom 2 | 63% | 100% | 57% | 100% | Compliant |
| E.01.019 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.01.019 | Bedroom 4 | 100% | 100% | 100% | 100% | Compliant |
| E.01.020 | Bedroom 1 | 86% | 100% | 80% | 100% | Compliant |
| E.01.020 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.020 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.19 SDA Results: Block E - Duplex and Triplex Units - Level 03

| Table No. D.1.19 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Duplex and Triplex Units - Level 03 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.01.009 | Living Room_U | 99% | 100% | 99% | 100% | Compliant |
| E.01.009 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.01.010 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.010 | Bedroom 1 | 80% | 100% | 79% | 100% | Compliant |
| E.01.011 | Living Room_U | 97% | 100% | 96% | 100% | Compliant |
| E.01.011 | Bedroom 1 | 66% | 100% | 65% | 100% | Compliant |
| E.01.012 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.012 | Bedroom 1 | 94% | 100% | 91% | 100% | Compliant |
| E.01.014 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.014 | Bedroom 1 | 88% | 100% | 88% | 100% | Compliant |
| E.01.016 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.016 | Bedroom 1 | 56% | 100% | 56% | 100% | Compliant |
| E.01.017 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.017 | Bedroom 1 | 79% | 100% | 79% | 100% | Compliant |
| E.01.019 | Living Room_U | 100% | 100% | 100% | 100% | Compliant |
| E.01.019 | Bedroom 1 | 55% | 100% | 55% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.20 SDA Results: Block E - Apartment Units - Level 01

| Table No. D.1.20 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 01 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.01.001 | LKD | 98% | 100% | 97% | 100% | Compliant |
| E.01.001 | Bedroom 1 | 70% | 100% | 64% | 100% | Compliant |
| E.01.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.01.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.01.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.003 | LKD | 55% | 98% | 52% | 97% | Compliant |
| E.01.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.01.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.004 | LKD | 53% | 100% | 50% | 100% | Compliant |
| E.01.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.01.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.01.005 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.01.005 | Bedroom 1 | 93% | 100% | 90% | 100% | Compliant |
| E.01.006 | LKD | 36% | 100% | 36% | 100% | Non-compliant |
| E.01.006 | Bedroom 1 | 89% | 100% | 89% | 100% | Compliant |
| E.01.007 | LKD | 86% | 100% | 83% | 100% | Compliant |
| E.01.007 | Bedroom 1 | 49% | 99% | 43% | 99% | Non-compliant |
| E.01.008 | LKD | 18% | 87% | 17% | 83% | Non-compliant |
| E.01.008 | Bedroom 1 | 100% | 100% | 98% | 100% | Compliant |
| E.01.008 | Bedroom 2 | 66% | 100% | 60% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.21 SDA Results: Block E - Apartment Units - Level 02

| Table No. D.1.21 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 02 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.02.001 | LKD | 30% | 99% | 30% | 99% | Non-compliant |
| E.02.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.001 | Bedroom 2 | 80% | 100% | 78% | 100% | Compliant |
| E.02.002 | LKD | 100% | 100% | 99% | 100% | Compliant |
| E.02.002 | Bedroom 1 | 91% | 100% | 89% | 100% | Compliant |
| E.02.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.02.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.02.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.02.004 | LKD | 57% | 99% | 56% | 99% | Compliant |
| E.02.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.02.005 | LKD | 56% | 100% | 54% | 100% | Compliant |
| E.02.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.02.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.02.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.007 | LKD | 44% | 100% | 44% | 100% | Non-compliant |
| E.02.007 | Bedroom 1 | 97% | 100% | 95% | 100% | Compliant |
| E.02.008 | LKD | 98% | 100% | 97% | 100% | Compliant |
| E.02.008 | Bedroom 1 | 61% | 100% | 61% | 100% | Compliant |
| E.02.009 | LKD | 23% | 98% | 23% | 98% | Non-compliant |
| E.02.009 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.02.009 | Bedroom 2 | 74% | 100% | 74% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.22 SDA Results: Block E - Apartment Units - Level 03

| Table No. D.1.22 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 03 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.03.001 | LKD | 43% | 100% | 43% | 100% | Non-compliant |
| E.03.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.001 | Bedroom 2 | 92% | 100% | 92% | 100% | Compliant |
| E.03.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.03.002 | Bedroom 1 | 98% | 100% | 98% | 100% | Compliant |
| E.03.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.03.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.03.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.03.004 | LKD | 62% | 100% | 60% | 100% | Compliant |
| E.03.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.03.005 | LKD | 59% | 100% | 57% | 100% | Compliant |
| E.03.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.03.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.03.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.007 | LKD | 68% | 100% | 68% | 100% | Compliant |
| E.03.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.008 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.03.008 | Bedroom 1 | 70% | 100% | 70% | 100% | Compliant |
| E.03.009 | LKD | 37% | 100% | 37% | 100% | Non-compliant |
| E.03.009 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.03.009 | Bedroom 2 | 86% | 100% | 84% | 100% | Compliant |
| * For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21. For floor plans of the assessed units please refer to section C.1 on page 93. | | | | | | |

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## D.1.23 SDA Results: Block E - Apartment Units - Level 04

| Table No. D.1.23 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 04 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.04.001 | LKD | 51% | 100% | 50% | 100% | Compliant |
| E.04.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.04.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.04.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.004 | LKD | 63% | 100% | 62% | 100% | Compliant |
| E.04.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.005 | LKD | 60% | 100% | 60% | 100% | Compliant |
| E.04.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.04.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.04.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.04.008 | LKD | 43% | 100% | 43% | 100% | Non-compliant |
| E.04.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.04.008 | Bedroom 2 | 92% | 100% | 92% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.24 SDA Results: Block E - Apartment Units - Level 05

| Table No. D.1.24 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 05 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.05.001 | LKD | 57% | 100% | 57% | 100% | Compliant |
| E.05.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.05.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.05.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.004 | LKD | 66% | 100% | 64% | 100% | Compliant |
| E.05.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.005 | LKD | 63% | 100% | 61% | 100% | Compliant |
| E.05.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.05.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.05.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.05.008 | LKD | 48% | 100% | 47% | 100% | Non-compliant |
| E.05.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.05.008 | Bedroom 2 | 98% | 100% | 98% | 100% | Compliant |
| * For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21. For floor plans of the assessed units please refer to section C.1 on page 93. | | | | | | |

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## D.1.25 SDA Results: Block E - Apartment Units - Level 06

| Table No. D.1.25 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 06 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.06.001 | LKD | 62% | 100% | 61% | 100% | Compliant |
| E.06.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.06.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.06.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.004 | LKD | 68% | 100% | 68% | 100% | Compliant |
| E.06.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.005 | LKD | 64% | 100% | 64% | 100% | Compliant |
| E.06.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.06.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.06.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.06.008 | LKD | 51% | 100% | 51% | 100% | Compliant |
| E.06.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.06.008 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.26 SDA Results: Block E - Apartment Units - Level 07

| Table No. D.1.26 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 07 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.07.001 | LKD | 65% | 100% | 65% | 100% | Compliant |
| E.07.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.07.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.07.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.004 | LKD | 70% | 100% | 70% | 100% | Compliant |
| E.07.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.005 | LKD | 67% | 100% | 66% | 100% | Compliant |
| E.07.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.07.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.07.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.07.008 | LKD | 56% | 100% | 56% | 100% | Compliant |
| E.07.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.07.008 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| * For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21. For floor plans of the assessed units please refer to section C.1 on page 93. | | | | | | |

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## D.1.27 SDA Results: Block E - Apartment Units - Level 08

| Table No. D.1.27 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 08 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.08.001 | LKD | 67% | 100% | 66% | 100% | Compliant |
| E.08.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.08.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.08.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.004 | LKD | 73% | 100% | 71% | 100% | Compliant |
| E.08.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.005 | LKD | 67% | 100% | 67% | 100% | Compliant |
| E.08.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.08.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.08.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.08.008 | LKD | 56% | 100% | 56% | 100% | Compliant |
| E.08.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.08.008 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.28 SDA Results: Block E - Apartment Units - Level 09

| Table No. D.1.28 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 09 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.09.001 | LKD | 66% | 100% | 66% | 100% | Compliant |
| E.09.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.09.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.09.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.004 | LKD | 73% | 100% | 73% | 100% | Compliant |
| E.09.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.005 | LKD | 69% | 100% | 67% | 100% | Compliant |
| E.09.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.005 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.09.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.006 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.007 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.09.007 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.007 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.09.008 | LKD | 58% | 100% | 57% | 100% | Compliant |
| E.09.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.09.008 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.29 SDA Results: Block E - Apartment Units - Level 10 & 11

| Table No. D.1.29 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 10 & 11 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.10.001 | LKD | 68% | 100% | 66% | 100% | Compliant |
| E.10.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.10.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.10.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.10.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.10.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.10.004 | LKD | 73% | 100% | 73% | 100% | Compliant |
| E.10.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.10.005 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.10.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.005 | Bedroom 2 | 98% | 100% | 96% | 100% | Compliant |
| E.10.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.10.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.10.006 | Bedroom 2 | 27% | 100% | 27% | 100% | Non-compliant |
| E.11.001 | LKD | 68% | 100% | 68% | 100% | Compliant |
| E.11.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.11.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.11.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.11.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.11.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.11.004 | LKD | 74% | 100% | 73% | 100% | Compliant |
| E.11.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.11.005 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.11.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.005 | Bedroom 2 | 96% | 100% | 96% | 100% | Compliant |
| E.11.006 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.11.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.11.006 | Bedroom 2 | 29% | 100% | 29% | 100% | Non-compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.30 SDA Results: Block E - Apartment Units - Level 12 & 13

| Table No. D.1.30 - Supplementary SDA Results (I.S. EN 17037 criteria): Block E - Apartment Units - Level 12 & 13 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| E.12.001 | LKD | 68% | 100% | 68% | 100% | Compliant |
| E.12.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.12.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.12.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.12.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.12.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.12.004 | LKD | 73% | 100% | 73% | 100% | Compliant |
| E.12.004 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.12.005 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.12.005 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.005 | Bedroom 2 | 98% | 100% | 98% | 100% | Compliant |
| E.12.006 | LKD | 99% | 100% | 99% | 100% | Compliant |
| E.12.006 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.12.006 | Bedroom 2 | 36% | 100% | 34% | 100% | Non-compliant |
| E.13.001 | LKD | 99% | 100% | 99% | 100% | Compliant |
| E.13.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.13.001 | Bedroom 2 | 98% | 100% | 98% | 100% | Compliant |
| E.13.001 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.13.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.13.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.13.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.13.002 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.13.003 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.13.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.13.003 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.13.003 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.14.001 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.14.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.14.001 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.14.001 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| E.14.002 | LKD | 100% | 100% | 100% | 100% | Compliant |
| E.14.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| E.14.002 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| E.14.002 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.31 SDA Results: Block H - Apartment Units - Level 01

| Table No. D.1.31 - Supplementary SDA Results (I.S. EN 17037 criteria): Block H - Apartment Units - Level 01 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| H.01.001 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.01.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.01.001 | Bedroom 2 | 83% | 100% | 60% | 100% | Compliant |
| H.01.002 | LKD | 58% | 97% | 58% | 97% | Compliant |
| H.01.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.01.003 | LKD | 55% | 98% | 55% | 98% | Compliant |
| H.01.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.01.004 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.01.004 | Bedroom 1 | 48% | 100% | 38% | 100% | Non-compliant |
| H.01.004 | Bedroom 2 | 24% | 100% | 20% | 99% | Non-compliant |
| H.01.005 | LKD | 99% | 100% | 99% | 100% | Compliant |
| H.01.005 | Bedroom 1 | 39% | 100% | 33% | 100% | Non-compliant |
| H.01.006 | LKD | 35% | 78% | 35% | 76% | Non-compliant |
| H.01.006 | Bedroom 1 | 52% | 100% | 50% | 100% | Compliant |
| H.01.007 | LKD | 37% | 78% | 35% | 77% | Non-compliant |
| H.01.007 | Bedroom 1 | 59% | 100% | 55% | 100% | Compliant |
| H.01.008 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.01.008 | Bedroom 1 | 100% | 100% | 98% | 100% | Compliant |
| H.01.008 | Bedroom 2 | 73% | 100% | 63% | 100% | Compliant |
| H.01.009 | LKD | 39% | 80% | 38% | 78% | Non-compliant |
| H.01.009 | Bedroom 1 | 57% | 100% | 54% | 100% | Compliant |
| H.01.010 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.01.010 | Bedroom 1 | 57% | 100% | 47% | 100% | Trees affecting compliance |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.32 SDA Results: Block H - Apartment Units - Level 02

| Table No. D.1.32 - Supplementary SDA Results (I.S. EN 17037 criteria): Block H - Apartment Units - Level 02 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| H.02.001 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.001 | Bedroom 2 | 91% | 100% | 83% | 100% | Compliant |
| H.02.002 | LKD | 63% | 100% | 63% | 100% | Compliant |
| H.02.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.003 | LKD | 63% | 100% | 63% | 100% | Compliant |
| H.02.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.004 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.004 | Bedroom 1 | 71% | 100% | 69% | 100% | Compliant |
| H.02.004 | Bedroom 2 | 34% | 100% | 29% | 100% | Non-compliant |
| H.02.005 | LKD | 100% | 100% | 99% | 100% | Compliant |
| H.02.005 | Bedroom 1 | 82% | 100% | 72% | 100% | Compliant |
| H.02.005 | Bedroom 2 | 37% | 100% | 36% | 100% | Non-compliant |
| H.02.006 | LKD | 47% | 85% | 47% | 85% | Non-compliant |
| H.02.006 | Bedroom 1 | 89% | 100% | 89% | 100% | Compliant |
| H.02.007 | LKD | 47% | 85% | 47% | 85% | Non-compliant |
| H.02.007 | Bedroom 1 | 93% | 100% | 93% | 100% | Compliant |
| H.02.008 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.008 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.008 | Bedroom 2 | 84% | 100% | 73% | 100% | Compliant |
| H.02.009 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.009 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.009 | Bedroom 2 | 61% | 100% | 57% | 100% | Compliant |
| H.02.010 | LKD | 60% | 99% | 60% | 99% | Compliant |
| H.02.010 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.011 | LKD | 58% | 99% | 57% | 99% | Compliant |
| H.02.011 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.012 | LKD | 87% | 100% | 86% | 99% | Compliant |
| H.02.012 | Bedroom 1 | 93% | 100% | 85% | 100% | Compliant |
| H.02.012 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| H.02.012 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| H.02.013 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.013 | Bedroom 1 | 92% | 100% | 50% | 100% | Compliant |
| H.02.013 | Bedroom 2 | 50% | 100% | 41% | 100% | Trees affecting compliance |
| H.02.014 | LKD | 41% | 83% | 39% | 82% | Non-compliant |
| H.02.014 | Bedroom 1 | 66% | 100% | 61% | 100% | Compliant |
| H.02.015 | LKD | 48% | 91% | 46% | 91% | Non-compliant |
| H.02.015 | Bedroom 1 | 93% | 100% | 91% | 100% | Compliant |
| H.02.016 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.02.016 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.02.016 | Bedroom 2 | 86% | 100% | 76% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.1.33 SDA Results: Block H - Apartment Units - Level 03

| Table No. D.1.33 - Supplementary SDA Results (I.S. EN 17037 criteria): Block H - Apartment Units - Level 03 | | | | | | |
|---|---|---|---|---|---|---|
| Unit Number | Room Description | No Trees | | With Trees | | Compliance with I.S. EN 17037 Criteria* |
| | | Area above 300 Lux* | Area above 100 Lux* | Area above 300 Lux* | Area above 100 Lux* | |
| H.03.001 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.03.001 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.03.001 | Bedroom 2 | 79% | 100% | 77% | 100% | Compliant |
| H.03.002 | LKD | 63% | 100% | 63% | 100% | Compliant |
| H.03.002 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.03.003 | LKD | 63% | 100% | 63% | 100% | Compliant |
| H.03.003 | Bedroom 1 | 100% | 100% | 100% | 100% | Compliant |
| H.03.004 | LKD | 88% | 100% | 87% | 100% | Compliant |
| H.03.004 | Bedroom 1 | 94% | 100% | 90% | 100% | Compliant |
| H.03.004 | Bedroom 2 | 100% | 100% | 100% | 100% | Compliant |
| H.03.004 | Bedroom 3 | 100% | 100% | 100% | 100% | Compliant |
| H.03.005 | LKD | 100% | 100% | 100% | 100% | Compliant |
| H.03.005 | Bedroom 1 | 96% | 100% | 65% | 100% | Compliant |
| H.03.005 | Bedroom 2 | 61% | 100% | 44% | 100% | Trees affecting compliance |
| H.03.006 | LKD | 47% | 87% | 47% | 86% | Non-compliant |
| H.03.006 | Bedroom 1 | 95% | 100% | 93% | 100% | Compliant |

* For information regarding the criteria under the various guidelines including target Lux please refer to section 4.5.1 on page 21.
For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2 Supplementary No Sky Line (NSL) assessment in proposed units.

Below is an example of the table used to describe the supplementary assessment results for 'No Sky Line' in proposed units.

| Table Example. D.2 - Supplementary NSL Results: | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80% |
| **A** | **B** | **C** | **D** |

**A: Unit Number**

This column identifies the assessed unit. All unit numbers are determined by the architect's drawings, unless otherwise stated.

**B: Room Description**

*Room Description* details which room in the unit has been assessed, e.g. bedroom, LKD, etc.

**C: % of room where the sky is visible from the working plane**

This column states the percentage of the room from which there is a direct line of sight to the sky when assessed at the working plane height, which is 850mm above the finished floor level in residential rooms or 700mm above the finished floor level in offices or classrooms.

**D: Above 80%**

Whilst the BRE Guidelines only provide recommendations for NSL in the context of an impact analysis, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

If this column states: *'Yes'*, it signifies that the sky will be visible from more than 80% of the working plane.

If this column states: *'No'*, it signifies that the sky will be visible from less than 80% of the working plane and supplementary electric lighting may be required.

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## D.2.1 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 00

| Table No. D.2.1 - Supplementary NSL Results: RD1 & RD2 - Terrace 24-33 - Level 00 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 24A | LKD | 99% | Yes |
| 24A | Bedroom 1 | 63% | No |
| 24A | Bedroom 2 | 98% | Yes |
| 24A | Study | 99% | Yes |
| 25A | LKD | 100% | Yes |
| 25A | Bedroom 1 | 89% | Yes |
| 25A | Bedroom 2 | 97% | Yes |
| 26A | LKD | 93% | Yes |
| 26A | Bedroom 1 | 98% | Yes |
| 26A | Bedroom 2 | 97% | Yes |
| 27A | LKD | 92% | Yes |
| 27A | Bedroom 1 | 98% | Yes |
| 27A | Bedroom 2 | 97% | Yes |
| 28A | LKD | 88% | Yes |
| 28A | Bedroom 1 | 98% | Yes |
| 28A | Bedroom 2 | 96% | Yes |
| 29A | LKD | 88% | Yes |
| 29A | Bedroom 1 | 98% | Yes |
| 29A | Bedroom 2 | 97% | Yes |
| 30A | LKD | 85% | Yes |
| 30A | Bedroom 1 | 98% | Yes |
| 30A | Bedroom 2 | 97% | Yes |
| 31A | LKD | 100% | Yes |
| 31A | Bedroom 1 | 98% | Yes |
| 31A | Bedroom 2 | 98% | Yes |
| 32A | LKD | 97% | Yes |
| 32A | Bedroom 1 | 81% | Yes |
| 32A | Bedroom 2 | 98% | Yes |
| 33A | LKD | 99% | Yes |
| 33A | Bedroom 1 | 49% | No |
| 33A | Bedroom 2 | 92% | Yes |
| 33A | Study | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.2 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 01

Table No. D.2.2 - Supplementary NSL Results: RD1 & RD2 - Terrace 24-33 - Level 01

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 24B | Kitchen/Dining | 87% | Yes |
| 24B | Living Room | 100% | Yes |
| 25B | Kitchen/Dining | 98% | Yes |
| 25B | Living Room | 97% | Yes |
| 26B | Kitchen/Dining | 90% | Yes |
| 26B | Living Room | 98% | Yes |
| 27B | Kitchen/Dining | 98% | Yes |
| 27B | Living Room | 98% | Yes |
| 28B | Kitchen/Dining | 89% | Yes |
| 28B | Living Room | 98% | Yes |
| 29B | Kitchen/Dining | 98% | Yes |
| 29B | Living Room | 98% | Yes |
| 30B | Kitchen/Dining | 89% | Yes |
| 30B | Living Room | 98% | Yes |
| 31B | Kitchen/Dining | 99% | Yes |
| 31B | Living Room | 98% | Yes |
| 32B | Kitchen/Dining | 88% | Yes |
| 32B | Living Room | 98% | Yes |
| 33B | Kitchen/Dining | 95% | Yes |
| 33B | Living Room | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.3 SDA Results: Duplex Type RD1 & RD2 - Terrace 24-33 - Level 02

Table No. D.2.3 - Supplementary NSL Results: RD1 & RD2 - Terrace 24-33 - Level 02

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 24B | Bedroom 1 | 100% | Yes |
| 24B | Bedroom 2 | 98% | Yes |
| 24B | Bedroom 3 | 97% | Yes |
| 25B | Bedroom 1 | 98% | Yes |
| 25B | Bedroom 2 | 97% | Yes |
| 25B | Bedroom 3 | 97% | Yes |
| 26B | Bedroom 1 | 98% | Yes |
| 26B | Bedroom 2 | 97% | Yes |
| 26B | Bedroom 3 | 97% | Yes |
| 27B | Bedroom 1 | 98% | Yes |
| 27B | Bedroom 2 | 97% | Yes |
| 27B | Bedroom 3 | 94% | Yes |
| 28B | Bedroom 1 | 98% | Yes |
| 28B | Bedroom 2 | 97% | Yes |
| 28B | Bedroom 3 | 95% | Yes |
| 29B | Bedroom 1 | 98% | Yes |
| 29B | Bedroom 2 | 97% | Yes |
| 29B | Bedroom 3 | 94% | Yes |
| 30B | Bedroom 1 | 98% | Yes |
| 30B | Bedroom 2 | 97% | Yes |
| 30B | Bedroom 3 | 95% | Yes |
| 31B | Bedroom 1 | 98% | Yes |
| 31B | Bedroom 2 | 97% | Yes |
| 31B | Bedroom 3 | 97% | Yes |
| 32B | Bedroom 1 | 98% | Yes |
| 32B | Bedroom 2 | 97% | Yes |
| 32B | Bedroom 3 | 97% | Yes |
| 33B | Bedroom 1 | 100% | Yes |
| 33B | Bedroom 2 | 97% | Yes |
| 33B | Bedroom 3 | 95% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.4 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 00

Table No. D.2.4 - Supplementary NSL Results: RD1 & RD2 - Terrace 66-75 - Level 00

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 66A | LKD | 97% | Yes |
| 66A | Bedroom 1 | 48% | No |
| 66A | Bedroom 2 | 94% | Yes |
| 66A | Study | 99% | Yes |
| 67A | LKD | 97% | Yes |
| 67A | Bedroom 1 | 82% | Yes |
| 67A | Bedroom 2 | 92% | Yes |
| 68A | LKD | 96% | Yes |
| 68A | Bedroom 1 | 98% | Yes |
| 68A | Bedroom 2 | 91% | Yes |
| 69A | LKD | 56% | No |
| 69A | Bedroom 1 | 98% | Yes |
| 69A | Bedroom 2 | 91% | Yes |
| 70A | LKD | 58% | No |
| 70A | Bedroom 1 | 98% | Yes |
| 70A | Bedroom 2 | 92% | Yes |
| 71A | LKD | 56% | No |
| 71A | Bedroom 1 | 98% | Yes |
| 71A | Bedroom 2 | 94% | Yes |
| 72A | LKD | 58% | No |
| 72A | Bedroom 1 | 98% | Yes |
| 72A | Bedroom 2 | 92% | Yes |
| 73A | LKD | 96% | Yes |
| 73A | Bedroom 1 | 98% | Yes |
| 73A | Bedroom 2 | 97% | Yes |
| 74A | LKD | 96% | Yes |
| 74A | Bedroom 1 | 79% | No |
| 74A | Bedroom 2 | 97% | Yes |
| 75A | LKD | 59% | No |
| 75A | Bedroom 1 | 40% | No |
| 75A | Bedroom 2 | 90% | Yes |
| 75A | Study | 98% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.5 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 01

| Table No. D.2.5 - Supplementary NSL Results: RD1 & RD2 - Terrace 66-75 - Level 01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 66B | Kitchen/Dining | 84% | Yes |
| 66B | Living Room | 100% | Yes |
| 67B | Kitchen/Dining | 99% | Yes |
| 67B | Living Room | 97% | Yes |
| 68B | Kitchen/Dining | 85% | Yes |
| 68B | Living Room | 98% | Yes |
| 69B | Kitchen/Dining | 83% | Yes |
| 69B | Living Room | 98% | Yes |
| 70B | Kitchen/Dining | 84% | Yes |
| 70B | Living Room | 98% | Yes |
| 71B | Kitchen/Dining | 84% | Yes |
| 71B | Living Room | 98% | Yes |
| 72B | Kitchen/Dining | 84% | Yes |
| 72B | Living Room | 98% | Yes |
| 73B | Kitchen/Dining | 84% | Yes |
| 73B | Living Room | 97% | Yes |
| 74B | Kitchen/Dining | 84% | Yes |
| 74B | Living Room | 98% | Yes |
| 75B | Kitchen/Dining | 84% | Yes |
| 75B | Living Room | 98% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.6 SDA Results: Duplex Type RD1 & RD2 - Terrace 66-75 - Level 02

| Table No. D.2.6 - Supplementary NSL Results: RD1 & RD2 - Terrace 66-75 - Level 02 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 66B | Bedroom 1 | 100% | Yes |
| 66B | Bedroom 2 | 97% | Yes |
| 66B | Bedroom 3 | 93% | Yes |
| 67B | Bedroom 1 | 98% | Yes |
| 67B | Bedroom 2 | 97% | Yes |
| 67B | Bedroom 3 | 88% | Yes |
| 68B | Bedroom 1 | 98% | Yes |
| 68B | Bedroom 2 | 97% | Yes |
| 68B | Bedroom 3 | 85% | Yes |
| 69B | Bedroom 1 | 98% | Yes |
| 69B | Bedroom 2 | 97% | Yes |
| 69B | Bedroom 3 | 86% | Yes |
| 70B | Bedroom 1 | 98% | Yes |
| 70B | Bedroom 2 | 97% | Yes |
| 70B | Bedroom 3 | 85% | Yes |
| 71B | Bedroom 1 | 98% | Yes |
| 71B | Bedroom 2 | 97% | Yes |
| 71B | Bedroom 3 | 89% | Yes |
| 72B | Bedroom 1 | 97% | Yes |
| 72B | Bedroom 2 | 97% | Yes |
| 72B | Bedroom 3 | 93% | Yes |
| 73B | Bedroom 1 | 98% | Yes |
| 73B | Bedroom 2 | 97% | Yes |
| 73B | Bedroom 3 | 97% | Yes |
| 74B | Bedroom 1 | 98% | Yes |
| 74B | Bedroom 2 | 97% | Yes |
| 74B | Bedroom 3 | 95% | Yes |
| 75B | Bedroom 1 | 99% | Yes |
| 75B | Bedroom 2 | 97% | Yes |
| 75B | Bedroom 3 | 92% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.7 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.2.7 - Supplementary NSL Results: Duplex Type RD3 - Various Units | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 1A | LKD | 100% | Yes |
| 1A | Bedroom 1 | 96% | Yes |
| 1A | Bedroom 2 | 63% | No |
| 1B | Kitchen/Dining | 99% | Yes |
| 1B | Living Room | 99% | Yes |
| 1B | Bedroom 1 | 98% | Yes |
| 1B | Bedroom 2 | 99% | Yes |
| 1B | Bedroom 3 | 100% | Yes |
| 6A | LKD | 100% | Yes |
| 6A | Bedroom 1 | 96% | Yes |
| 6A | Bedroom 2 | 95% | Yes |
| 6B | Kitchen/Dining | 100% | Yes |
| 6B | Living Room | 99% | Yes |
| 6B | Bedroom 1 | 100% | Yes |
| 6B | Bedroom 2 | 100% | Yes |
| 6B | Bedroom 3 | 97% | Yes |
| 15A | LKD | 100% | Yes |
| 15A | Bedroom 1 | 96% | Yes |
| 15A | Bedroom 2 | 94% | Yes |
| 15B | Kitchen/Dining | 99% | Yes |
| 15B | Living Room | 99% | Yes |
| 15B | Bedroom 1 | 99% | Yes |
| 15B | Bedroom 2 | 99% | Yes |
| 15B | Bedroom 3 | 99% | Yes |
| 20A | LKD | 100% | Yes |
| 20A | Bedroom 1 | 96% | Yes |
| 20A | Bedroom 2 | 94% | Yes |
| 20B | Kitchen/Dining | 100% | Yes |
| 20B | Living Room | 100% | Yes |
| 20B | Bedroom 1 | 99% | Yes |
| 20B | Bedroom 2 | 100% | Yes |
| 20B | Bedroom 3 | 97% | Yes |
| 21A | LKD | 86% | Yes |
| 21A | Bedroom 1 | 77% | No |
| 21A | Bedroom 2 | 96% | Yes |
| 21B | Kitchen/Dining | 99% | Yes |
| 21B | Living Room | 99% | Yes |
| 21B | Bedroom 1 | 99% | Yes |
| 21B | Bedroom 2 | 99% | Yes |
| 21B | Bedroom 3 | 97% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.8 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.2.8 - Supplementary NSL Results: Duplex Type RD3 - Various Units | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 36A | LKD | 89% | Yes |
| 36A | Bedroom 1 | 81% | Yes |
| 36A | Bedroom 2 | 94% | Yes |
| 36B | Kitchen/Dining | 99% | Yes |
| 36B | Living Room | 99% | Yes |
| 36B | Bedroom 1 | 99% | Yes |
| 36B | Bedroom 2 | 99% | Yes |
| 36B | Bedroom 3 | 97% | Yes |
| 43A | LKD | 92% | Yes |
| 43A | Bedroom 1 | 78% | No |
| 43A | Bedroom 2 | 96% | Yes |
| 43B | Kitchen/Dining | 99% | Yes |
| 43B | Living Room | 99% | Yes |
| 43B | Bedroom 1 | 99% | Yes |
| 43B | Bedroom 2 | 99% | Yes |
| 43B | Bedroom 3 | 98% | Yes |
| 58A | LKD | 93% | Yes |
| 58A | Bedroom 1 | 78% | No |
| 58A | Bedroom 2 | 94% | Yes |
| 58B | Kitchen/Dining | 99% | Yes |
| 58B | Living Room | 99% | Yes |
| 58B | Bedroom 1 | 99% | Yes |
| 58B | Bedroom 2 | 99% | Yes |
| 58B | Bedroom 3 | 97% | Yes |
| 63A | LKD | 78% | No |
| 63A | Bedroom 1 | 76% | No |
| 63A | Bedroom 2 | 94% | Yes |
| 63B | Kitchen/Dining | 99% | Yes |
| 63B | Living Room | 99% | Yes |
| 63B | Bedroom 1 | 99% | Yes |
| 63B | Bedroom 2 | 99% | Yes |
| 63B | Bedroom 3 | 98% | Yes |
| 78A | LKD | 91% | Yes |
| 78A | Bedroom 1 | 79% | No |
| 78A | Bedroom 2 | 44% | No |
| 78B | Kitchen/Dining | 99% | Yes |
| 78B | Living Room | 95% | Yes |
| 78B | Bedroom 1 | 97% | Yes |
| 78B | Bedroom 2 | 99% | Yes |
| 78B | Bedroom 3 | 81% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.9 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.2.9 - Supplementary NSL Results: Duplex Type RD3 - Various Units | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 89A | LKD | 81% | Yes |
| 89A | Bedroom 1 | 86% | Yes |
| 89A | Bedroom 2 | 94% | Yes |
| 89B | Kitchen/Dining | 99% | Yes |
| 89B | Living Room | 100% | Yes |
| 89B | Bedroom 1 | 100% | Yes |
| 89B | Bedroom 2 | 99% | Yes |
| 89B | Bedroom 3 | 97% | Yes |
| 95A | LKD | 100% | Yes |
| 95A | Bedroom 1 | 96% | Yes |
| 95A | Bedroom 2 | 45% | No |
| 95B | Kitchen/Dining | 99% | Yes |
| 95B | Living Room | 99% | Yes |
| 95B | Bedroom 1 | 98% | Yes |
| 95B | Bedroom 2 | 99% | Yes |
| 95B | Bedroom 3 | 76% | No |
| 106A | LKD | 100% | Yes |
| 106A | Bedroom 1 | 96% | Yes |
| 106A | Bedroom 2 | 96% | Yes |
| 106B | Kitchen/Dining | 99% | Yes |
| 106B | Living Room | 99% | Yes |
| 106B | Bedroom 1 | 99% | Yes |
| 106B | Bedroom 2 | 99% | Yes |
| 106B | Bedroom 3 | 97% | Yes |
| 109A | LKD | 92% | Yes |
| 109A | Bedroom 1 | 80% | No |
| 109A | Bedroom 2 | 94% | Yes |
| 109B | Kitchen/Dining | 100% | Yes |
| 109B | Living Room | 100% | Yes |
| 109B | Bedroom 1 | 99% | Yes |
| 109B | Bedroom 2 | 99% | Yes |
| 109B | Bedroom 3 | 97% | Yes |
| 114A | LKD | 93% | Yes |
| 114A | Bedroom 1 | 85% | Yes |
| 114A | Bedroom 2 | 94% | Yes |
| 114B | Kitchen/Dining | 100% | Yes |
| 114B | Living Room | 99% | Yes |
| 114B | Bedroom 1 | 99% | Yes |
| 114B | Bedroom 2 | 100% | Yes |
| 114B | Bedroom 3 | 97% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.10 SDA Results: Duplex Type RD3 - Various Units

| Table No. D.2.10 - Supplementary NSL Results: Duplex Type RD3 - Various Units | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 127A | LKD | 98% | Yes |
| 127A | Bedroom 1 | 90% | Yes |
| 127A | Bedroom 2 | 68% | No |
| 127B | Kitchen/Dining | 99% | Yes |
| 127B | Living Room | 99% | Yes |
| 127B | Bedroom 1 | 99% | Yes |
| 127B | Bedroom 2 | 99% | Yes |
| 127B | Bedroom 3 | 100% | Yes |
| 134A | LKD | 94% | Yes |
| 134A | Bedroom 1 | 86% | Yes |
| 134A | Bedroom 2 | 96% | Yes |
| 134B | Kitchen/Dining | 99% | Yes |
| 134B | Living Room | 99% | Yes |
| 134B | Bedroom 1 | 100% | Yes |
| 134B | Bedroom 2 | 99% | Yes |
| 134B | Bedroom 3 | 97% | Yes |
| 140A | LKD | 100% | Yes |
| 140A | Bedroom 1 | 92% | Yes |
| 140A | Bedroom 2 | 91% | Yes |
| 140B | Kitchen/Dining | 99% | Yes |
| 140B | Living Room | 99% | Yes |
| 140B | Bedroom 1 | 99% | Yes |
| 140B | Bedroom 2 | 99% | Yes |
| 140B | Bedroom 3 | 97% | Yes |
| 147A | LKD | 87% | Yes |
| 147A | Bedroom 1 | 91% | Yes |
| 147A | Bedroom 2 | 94% | Yes |
| 147B | Kitchen/Dining | 99% | Yes |
| 147B | Living Room | 99% | Yes |
| 147B | Bedroom 1 | 99% | Yes |
| 147B | Bedroom 2 | 99% | Yes |
| 147B | Bedroom 3 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.11 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 00

Table No. D.2.11 - Supplementary NSL Results: RD4 & RD5 - Terrace 100-105 - Level 00

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 100A | LKD | 9880% | Yes |
| 100A | Bedroom 1 | 96% | Yes |
| 100A | Bedroom 2 | 95% | Yes |
| 101A | LKD | 100% | Yes |
| 101A | Bedroom 1 | 96% | Yes |
| 101A | Bedroom 2 | 95% | Yes |
| 102A | LKD | 100% | Yes |
| 102A | Bedroom 1 | 96% | Yes |
| 102A | Bedroom 2 | 95% | Yes |
| 103A | LKD | 100% | Yes |
| 103A | Bedroom 1 | 96% | Yes |
| 103A | Bedroom 2 | 95% | Yes |
| 104A | LKD | 100% | Yes |
| 104A | Bedroom 1 | 96% | Yes |
| 104A | Bedroom 2 | 95% | Yes |
| 105A | LKD | 97% | Yes |
| 105A | Bedroom 1 | 62% | No |
| 105A | Bedroom 2 | 98% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.12 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 01

| Table No. D.2.12 - Supplementary NSL Results: RD4 & RD5 - Terrace 100-105 - Level 01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 100B | Kitchen/Dining | 99% | Yes |
| 100B | Living Room | 99% | Yes |
| 101B | Kitchen/Dining | 99% | Yes |
| 101B | Living Room | 99% | Yes |
| 102B | Kitchen/Dining | 99% | Yes |
| 102B | Living Room | 99% | Yes |
| 103B | Kitchen/Dining | 99% | Yes |
| 103B | Living Room | 99% | Yes |
| 104B | Kitchen/Dining | 99% | Yes |
| 104B | Living Room | 99% | Yes |
| 105B | Kitchen/Dining | 99% | Yes |
| 105B | Living Room | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.13 SDA Results: Duplex Type RD4 & RD5 - Terrace 100-105 - Level 02

Table No. D.2.13 - Supplementary NSL Results: RD4 & RD5 - Terrace 100-105 - Level 02

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 100B | Bedroom 1 | 100% | Yes |
| 100B | Bedroom 2 | 99% | Yes |
| 100B | Bedroom 3 | 98% | Yes |
| 101B | Bedroom 1 | 98% | Yes |
| 101B | Bedroom 2 | 99% | Yes |
| 101B | Bedroom 3 | 99% | Yes |
| 102B | Bedroom 1 | 99% | Yes |
| 102B | Bedroom 2 | 99% | Yes |
| 102B | Bedroom 3 | 98% | Yes |
| 103B | Bedroom 1 | 99% | Yes |
| 103B | Bedroom 2 | 99% | Yes |
| 103B | Bedroom 3 | 99% | Yes |
| 104B | Bedroom 1 | 99% | Yes |
| 104B | Bedroom 2 | 99% | Yes |
| 104B | Bedroom 3 | 98% | Yes |
| 105B | Bedroom 1 | 99% | Yes |
| 105B | Bedroom 2 | 99% | Yes |
| 105B | Bedroom 3 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.14 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 00

Table No. D.2.14 - Supplementary NSL Results: RD4 & RD5 - Terrace 119-126 - Level 00

| Unit Number | Room Description | No Sky Line (NSL) | |
|---|---|---|---|
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 119A | LKD | 85% | Yes |
| 119A | Bedroom 1 | 52% | No |
| 119A | Bedroom 2 | 96% | Yes |
| 120A | LKD | 100% | Yes |
| 120A | Bedroom 1 | 96% | Yes |
| 120A | Bedroom 2 | 98% | Yes |
| 121A | LKD | 100% | Yes |
| 121A | Bedroom 1 | 96% | Yes |
| 121A | Bedroom 2 | 97% | Yes |
| 122A | LKD | 100% | Yes |
| 122A | Bedroom 1 | 96% | Yes |
| 122A | Bedroom 2 | 98% | Yes |
| 123A | LKD | 100% | Yes |
| 123A | Bedroom 1 | 96% | Yes |
| 123A | Bedroom 2 | 97% | Yes |
| 124A | LKD | 100% | Yes |
| 124A | Bedroom 1 | 96% | Yes |
| 124A | Bedroom 2 | 98% | Yes |
| 125A | LKD | 100% | Yes |
| 125A | Bedroom 1 | 94% | Yes |
| 125A | Bedroom 2 | 97% | Yes |
| 126A | LKD | 100% | Yes |
| 126A | Bedroom 1 | 82% | Yes |
| 126A | Bedroom 2 | 97% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.15 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 01

| Table No. D.2.15 - Supplementary NSL Results: RD4 & RD5 - Terrace 119-126 - Level 01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 119B | Kitchen/Dining | 99% | Yes |
| 119B | Living Room | 99% | Yes |
| 120B | Kitchen/Dining | 99% | Yes |
| 120B | Living Room | 99% | Yes |
| 121B | Kitchen/Dining | 99% | Yes |
| 121B | Living Room | 99% | Yes |
| 122B | Kitchen/Dining | 99% | Yes |
| 122B | Living Room | 99% | Yes |
| 123B | Kitchen/Dining | 99% | Yes |
| 123B | Living Room | 98% | Yes |
| 124B | Kitchen/Dining | 99% | Yes |
| 124B | Living Room | 98% | Yes |
| 125B | Kitchen/Dining | 99% | Yes |
| 125B | Living Room | 98% | Yes |
| 126B | Kitchen/Dining | 99% | Yes |
| 126B | Living Room | 98% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.16 SDA Results: Duplex Type RD4 & RD5 - Terrace 119-126 - Level 02

| Table No. D.2.16 - Supplementary NSL Results: RD4 & RD5 - Terrace 119-126 - Level 02 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| 119B | Bedroom 1 | 99% | Yes |
| 119B | Bedroom 2 | 99% | Yes |
| 119B | Bedroom 3 | 97% | Yes |
| 120B | Bedroom 1 | 98% | Yes |
| 120B | Bedroom 2 | 100% | Yes |
| 120B | Bedroom 3 | 99% | Yes |
| 121B | Bedroom 1 | 98% | Yes |
| 121B | Bedroom 2 | 99% | Yes |
| 121B | Bedroom 3 | 97% | Yes |
| 122B | Bedroom 1 | 98% | Yes |
| 122B | Bedroom 2 | 100% | Yes |
| 122B | Bedroom 3 | 99% | Yes |
| 123B | Bedroom 1 | 98% | Yes |
| 123B | Bedroom 2 | 99% | Yes |
| 123B | Bedroom 3 | 97% | Yes |
| 124B | Bedroom 1 | 98% | Yes |
| 124B | Bedroom 2 | 100% | Yes |
| 124B | Bedroom 3 | 99% | Yes |
| 125B | Bedroom 1 | 98% | Yes |
| 125B | Bedroom 2 | 99% | Yes |
| 125B | Bedroom 3 | 97% | Yes |
| 126B | Bedroom 1 | 99% | Yes |
| 126B | Bedroom 2 | 100% | Yes |
| 126B | Bedroom 3 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.17 SDA Results: Block E - Duplex and Triplex Units - Level 01

| Table No. D.2.17 - Supplementary NSL Results: Block E - Duplex and Triplex - L01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.01.009 | Kitchen | 99% | Yes |
| E.01.009 | Living Room | 87% | Yes |
| E.01.010 | Kitchen | 97% | Yes |
| E.01.010 | Living Room | 97% | Yes |
| E.01.011 | Kitchen | 80% | No |
| E.01.011 | Living Room | 76% | No |
| E.01.012 | Kitchen | 91% | Yes |
| E.01.012 | Living Room | 84% | Yes |
| E.01.013 | Kitchen | 98% | Yes |
| E.01.013 | Living Room | 88% | Yes |
| E.01.014 | Kitchen | 98% | Yes |
| E.01.014 | Living Room | 94% | Yes |
| E.01.015 | Kitchen | 98% | Yes |
| E.01.015 | Living Room | 94% | Yes |
| E.01.016 | Kitchen | 97% | Yes |
| E.01.016 | Study | 84% | Yes |
| E.01.017 | Kitchen | 97% | Yes |
| E.01.017 | Study | 94% | Yes |
| E.01.018 | Kitchen | 98% | Yes |
| E.01.018 | Living Room | 95% | Yes |
| E.01.019 | Kitchen | 98% | Yes |
| E.01.019 | Living Room | 93% | Yes |
| E.01.020 | Kitchen | 98% | Yes |
| E.01.020 | Living Room | 90% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.18 SDA Results: Block E - Duplex and Triplex Units - Level 02

| Table No. D.2.18 - Supplementary NSL Results: Block E - Duplex and Triplex - L02 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.01.009 | Bedroom 2 | 85% | Yes |
| E.01.009 | Bedroom 3 | 100% | Yes |
| E.01.009 | Bedroom 4 | 100% | Yes |
| E.01.010 | Bedroom 2 | 98% | Yes |
| E.01.010 | Bedroom 3 | 95% | Yes |
| E.01.010 | Bedroom 4 | 100% | Yes |
| E.01.011 | Bedroom 2 | 77% | No |
| E.01.011 | Bedroom 3 | 92% | Yes |
| E.01.011 | Bedroom 4 | 100% | Yes |
| E.01.012 | Bedroom 2 | 97% | Yes |
| E.01.012 | Bedroom 3 | 100% | Yes |
| E.01.012 | Bedroom 4 | 100% | Yes |
| E.01.013 | Bedroom 1 | 99% | Yes |
| E.01.013 | Bedroom 2 | 100% | Yes |
| E.01.013 | Bedroom 3 | 100% | Yes |
| E.01.014 | Bedroom 2 | 99% | Yes |
| E.01.014 | Bedroom 3 | 100% | Yes |
| E.01.014 | Bedroom 4 | 100% | Yes |
| E.01.015 | Bedroom 1 | 97% | Yes |
| E.01.015 | Bedroom 2 | 100% | Yes |
| E.01.015 | Bedroom 3 | 100% | Yes |
| E.01.016 | Bedroom 2 | 89% | Yes |
| E.01.016 | Bedroom 3 | 100% | Yes |
| E.01.016 | Bedroom 4 | 95% | Yes |
| E.01.017 | Bedroom 2 | 99% | Yes |
| E.01.017 | Bedroom 3 | 100% | Yes |
| E.01.017 | Bedroom 4 | 95% | Yes |
| E.01.018 | Bedroom 1 | 99% | Yes |
| E.01.018 | Bedroom 2 | 100% | Yes |
| E.01.018 | Bedroom 3 | 100% | Yes |
| E.01.019 | Bedroom 2 | 98% | Yes |
| E.01.019 | Bedroom 3 | 100% | Yes |
| E.01.019 | Bedroom 4 | 100% | Yes |
| E.01.020 | Bedroom 1 | 97% | Yes |
| E.01.020 | Bedroom 2 | 100% | Yes |
| E.01.020 | Bedroom 3 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.19 SDA Results: Block E - Duplex and Triplex Units - Level 03

| Table No. D.2.19 - Supplementary NSL Results: Block E - Duplex and Triplex - L03 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.01.009 | Living Room_U | 92% | Yes |
| E.01.009 | Bedroom 1 | 100% | Yes |
| E.01.010 | Living Room_U | 99% | Yes |
| E.01.010 | Bedroom 1 | 94% | Yes |
| E.01.011 | Living Room_U | 86% | Yes |
| E.01.011 | Bedroom 1 | 94% | Yes |
| E.01.012 | Living Room_U | 94% | Yes |
| E.01.012 | Bedroom 1 | 100% | Yes |
| E.01.014 | Living Room_U | 100% | Yes |
| E.01.014 | Bedroom 1 | 97% | Yes |
| E.01.016 | Living Room_U | 100% | Yes |
| E.01.016 | Bedroom 1 | 94% | Yes |
| E.01.017 | Living Room_U | 100% | Yes |
| E.01.017 | Bedroom 1 | 93% | Yes |
| E.01.019 | Living Room_U | 100% | Yes |
| E.01.019 | Bedroom 1 | 95% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.20 SDA Results: Block E - Apartment Units - Level 01

| Table No. D.2.20 - Supplementary NSL Results: Block E - Apartment Units - Level 01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.01.001 | LKD | 99% | Yes |
| E.01.001 | Bedroom 1 | 99% | Yes |
| E.01.001 | Bedroom 2 | 99% | Yes |
| E.01.002 | LKD | 100% | Yes |
| E.01.002 | Bedroom 1 | 95% | Yes |
| E.01.002 | Bedroom 2 | 100% | Yes |
| E.01.003 | LKD | 82% | Yes |
| E.01.003 | Bedroom 1 | 100% | Yes |
| E.01.003 | Bedroom 2 | 95% | Yes |
| E.01.004 | LKD | 97% | Yes |
| E.01.004 | Bedroom 1 | 100% | Yes |
| E.01.004 | Bedroom 2 | 100% | Yes |
| E.01.005 | LKD | 100% | Yes |
| E.01.005 | Bedroom 1 | 99% | Yes |
| E.01.006 | LKD | 97% | Yes |
| E.01.006 | Bedroom 1 | 99% | Yes |
| E.01.007 | LKD | 100% | Yes |
| E.01.007 | Bedroom 1 | 99% | Yes |
| E.01.008 | LKD | 80% | No |
| E.01.008 | Bedroom 1 | 100% | Yes |
| E.01.008 | Bedroom 2 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.21 SDA Results: Block E - Apartment Units - Level 02

| Table No. D.2.21 - Supplementary NSL Results: Block E - Apartment Units - Level 02 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.02.001 | LKD | 96% | Yes |
| E.02.001 | Bedroom 1 | 100% | Yes |
| E.02.001 | Bedroom 2 | 100% | Yes |
| E.02.002 | LKD | 100% | Yes |
| E.02.002 | Bedroom 1 | 99% | Yes |
| E.02.002 | Bedroom 2 | 99% | Yes |
| E.02.003 | LKD | 100% | Yes |
| E.02.003 | Bedroom 1 | 95% | Yes |
| E.02.003 | Bedroom 2 | 100% | Yes |
| E.02.004 | LKD | 87% | Yes |
| E.02.004 | Bedroom 1 | 100% | Yes |
| E.02.004 | Bedroom 2 | 95% | Yes |
| E.02.005 | LKD | 97% | Yes |
| E.02.005 | Bedroom 1 | 100% | Yes |
| E.02.005 | Bedroom 2 | 100% | Yes |
| E.02.006 | LKD | 100% | Yes |
| E.02.006 | Bedroom 1 | 99% | Yes |
| E.02.007 | LKD | 98% | Yes |
| E.02.007 | Bedroom 1 | 99% | Yes |
| E.02.008 | LKD | 100% | Yes |
| E.02.008 | Bedroom 1 | 99% | Yes |
| E.02.009 | LKD | 91% | Yes |
| E.02.009 | Bedroom 1 | 100% | Yes |
| E.02.009 | Bedroom 2 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.22 SDA Results: Block E - Apartment Units - Level 03

| Table No. D.2.22 - Supplementary NSL Results: Block E - Apartment Units - Level 03 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.03.001 | LKD | 98% | Yes |
| E.03.001 | Bedroom 1 | 100% | Yes |
| E.03.001 | Bedroom 2 | 100% | Yes |
| E.03.002 | LKD | 100% | Yes |
| E.03.002 | Bedroom 1 | 99% | Yes |
| E.03.002 | Bedroom 2 | 100% | Yes |
| E.03.003 | LKD | 100% | Yes |
| E.03.003 | Bedroom 1 | 95% | Yes |
| E.03.003 | Bedroom 2 | 100% | Yes |
| E.03.004 | LKD | 87% | Yes |
| E.03.004 | Bedroom 1 | 100% | Yes |
| E.03.004 | Bedroom 2 | 95% | Yes |
| E.03.005 | LKD | 97% | Yes |
| E.03.005 | Bedroom 1 | 100% | Yes |
| E.03.005 | Bedroom 2 | 100% | Yes |
| E.03.006 | LKD | 100% | Yes |
| E.03.006 | Bedroom 1 | 99% | Yes |
| E.03.007 | LKD | 98% | Yes |
| E.03.007 | Bedroom 1 | 100% | Yes |
| E.03.008 | LKD | 100% | Yes |
| E.03.008 | Bedroom 1 | 99% | Yes |
| E.03.009 | LKD | 97% | Yes |
| E.03.009 | Bedroom 1 | 100% | Yes |
| E.03.009 | Bedroom 2 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.23 SDA Results: Block E - Apartment Units - Level 04

| Table No. D.2.23 - Supplementary NSL Results: Block E - Apartment Units - Level 04 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.04.001 | LKD | 98% | Yes |
| E.04.001 | Bedroom 1 | 100% | Yes |
| E.04.001 | Bedroom 2 | 100% | Yes |
| E.04.002 | LKD | 100% | Yes |
| E.04.002 | Bedroom 1 | 99% | Yes |
| E.04.002 | Bedroom 2 | 100% | Yes |
| E.04.003 | LKD | 100% | Yes |
| E.04.003 | Bedroom 1 | 96% | Yes |
| E.04.003 | Bedroom 2 | 100% | Yes |
| E.04.004 | LKD | 88% | Yes |
| E.04.004 | Bedroom 1 | 100% | Yes |
| E.04.004 | Bedroom 2 | 97% | Yes |
| E.04.005 | LKD | 97% | Yes |
| E.04.005 | Bedroom 1 | 100% | Yes |
| E.04.005 | Bedroom 2 | 100% | Yes |
| E.04.006 | LKD | 100% | Yes |
| E.04.006 | Bedroom 1 | 99% | Yes |
| E.04.006 | Bedroom 2 | 100% | Yes |
| E.04.007 | LKD | 100% | Yes |
| E.04.007 | Bedroom 1 | 99% | Yes |
| E.04.007 | Bedroom 2 | 100% | Yes |
| E.04.008 | LKD | 98% | Yes |
| E.04.008 | Bedroom 1 | 100% | Yes |
| E.04.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.24 SDA Results: Block E - Apartment Units - Level 05

| Table No. D.2.24 - Supplementary NSL Results: Block E - Apartment Units - Level 05 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.05.001 | LKD | 98% | Yes |
| E.05.001 | Bedroom 1 | 100% | Yes |
| E.05.001 | Bedroom 2 | 100% | Yes |
| E.05.002 | LKD | 100% | Yes |
| E.05.002 | Bedroom 1 | 99% | Yes |
| E.05.002 | Bedroom 2 | 100% | Yes |
| E.05.003 | LKD | 100% | Yes |
| E.05.003 | Bedroom 1 | 98% | Yes |
| E.05.003 | Bedroom 2 | 100% | Yes |
| E.05.004 | LKD | 89% | Yes |
| E.05.004 | Bedroom 1 | 100% | Yes |
| E.05.004 | Bedroom 2 | 98% | Yes |
| E.05.005 | LKD | 98% | Yes |
| E.05.005 | Bedroom 1 | 100% | Yes |
| E.05.005 | Bedroom 2 | 100% | Yes |
| E.05.006 | LKD | 100% | Yes |
| E.05.006 | Bedroom 1 | 99% | Yes |
| E.05.006 | Bedroom 2 | 100% | Yes |
| E.05.007 | LKD | 100% | Yes |
| E.05.007 | Bedroom 1 | 99% | Yes |
| E.05.007 | Bedroom 2 | 100% | Yes |
| E.05.008 | LKD | 98% | Yes |
| E.05.008 | Bedroom 1 | 100% | Yes |
| E.05.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.25 SDA Results: Block E - Apartment Units - Level 06

| Table No. D.2.25 - Supplementary NSL Results: Block E - Apartment Units - Level 06 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.06.001 | LKD | 98% | Yes |
| E.06.001 | Bedroom 1 | 100% | Yes |
| E.06.001 | Bedroom 2 | 100% | Yes |
| E.06.002 | LKD | 100% | Yes |
| E.06.002 | Bedroom 1 | 99% | Yes |
| E.06.002 | Bedroom 2 | 100% | Yes |
| E.06.003 | LKD | 100% | Yes |
| E.06.003 | Bedroom 1 | 99% | Yes |
| E.06.003 | Bedroom 2 | 100% | Yes |
| E.06.004 | LKD | 90% | Yes |
| E.06.004 | Bedroom 1 | 100% | Yes |
| E.06.004 | Bedroom 2 | 99% | Yes |
| E.06.005 | LKD | 98% | Yes |
| E.06.005 | Bedroom 1 | 100% | Yes |
| E.06.005 | Bedroom 2 | 100% | Yes |
| E.06.006 | LKD | 100% | Yes |
| E.06.006 | Bedroom 1 | 99% | Yes |
| E.06.006 | Bedroom 2 | 100% | Yes |
| E.06.007 | LKD | 100% | Yes |
| E.06.007 | Bedroom 1 | 99% | Yes |
| E.06.007 | Bedroom 2 | 100% | Yes |
| E.06.008 | LKD | 98% | Yes |
| E.06.008 | Bedroom 1 | 100% | Yes |
| E.06.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.26 SDA Results: Block E - Apartment Units - Level 07

| Table No. D.2.26 - Supplementary NSL Results: Block E - Apartment Units - Level 07 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.07.001 | LKD | 98% | Yes |
| E.07.001 | Bedroom 1 | 100% | Yes |
| E.07.001 | Bedroom 2 | 100% | Yes |
| E.07.002 | LKD | 100% | Yes |
| E.07.002 | Bedroom 1 | 99% | Yes |
| E.07.002 | Bedroom 2 | 100% | Yes |
| E.07.003 | LKD | 100% | Yes |
| E.07.003 | Bedroom 1 | 99% | Yes |
| E.07.003 | Bedroom 2 | 100% | Yes |
| E.07.004 | LKD | 94% | Yes |
| E.07.004 | Bedroom 1 | 100% | Yes |
| E.07.004 | Bedroom 2 | 100% | Yes |
| E.07.005 | LKD | 98% | Yes |
| E.07.005 | Bedroom 1 | 100% | Yes |
| E.07.005 | Bedroom 2 | 100% | Yes |
| E.07.006 | LKD | 100% | Yes |
| E.07.006 | Bedroom 1 | 99% | Yes |
| E.07.006 | Bedroom 2 | 100% | Yes |
| E.07.007 | LKD | 100% | Yes |
| E.07.007 | Bedroom 1 | 99% | Yes |
| E.07.007 | Bedroom 2 | 100% | Yes |
| E.07.008 | LKD | 98% | Yes |
| E.07.008 | Bedroom 1 | 100% | Yes |
| E.07.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.27 SDA Results: Block E - Apartment Units - Level 08

| Table No. D.2.27 - Supplementary NSL Results: Block E - Apartment Units - Level 08 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.08.001 | LKD | 98% | Yes |
| E.08.001 | Bedroom 1 | 100% | Yes |
| E.08.001 | Bedroom 2 | 100% | Yes |
| E.08.002 | LKD | 100% | Yes |
| E.08.002 | Bedroom 1 | 99% | Yes |
| E.08.002 | Bedroom 2 | 100% | Yes |
| E.08.003 | LKD | 100% | Yes |
| E.08.003 | Bedroom 1 | 99% | Yes |
| E.08.003 | Bedroom 2 | 100% | Yes |
| E.08.004 | LKD | 96% | Yes |
| E.08.004 | Bedroom 1 | 100% | Yes |
| E.08.004 | Bedroom 2 | 100% | Yes |
| E.08.005 | LKD | 98% | Yes |
| E.08.005 | Bedroom 1 | 100% | Yes |
| E.08.005 | Bedroom 2 | 100% | Yes |
| E.08.006 | LKD | 100% | Yes |
| E.08.006 | Bedroom 1 | 99% | Yes |
| E.08.006 | Bedroom 2 | 100% | Yes |
| E.08.007 | LKD | 100% | Yes |
| E.08.007 | Bedroom 1 | 99% | Yes |
| E.08.007 | Bedroom 2 | 100% | Yes |
| E.08.008 | LKD | 98% | Yes |
| E.08.008 | Bedroom 1 | 100% | Yes |
| E.08.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.28 SDA Results: Block E - Apartment Units - Level 09

| Table No. D.2.28 - Supplementary NSL Results: Block E - Apartment Units - Level 09 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.09.001 | LKD | 98% | Yes |
| E.09.001 | Bedroom 1 | 100% | Yes |
| E.09.001 | Bedroom 2 | 100% | Yes |
| E.09.002 | LKD | 100% | Yes |
| E.09.002 | Bedroom 1 | 99% | Yes |
| E.09.002 | Bedroom 2 | 100% | Yes |
| E.09.003 | LKD | 100% | Yes |
| E.09.003 | Bedroom 1 | 99% | Yes |
| E.09.003 | Bedroom 2 | 100% | Yes |
| E.09.004 | LKD | 98% | Yes |
| E.09.004 | Bedroom 1 | 100% | Yes |
| E.09.004 | Bedroom 2 | 100% | Yes |
| E.09.005 | LKD | 98% | Yes |
| E.09.005 | Bedroom 1 | 100% | Yes |
| E.09.005 | Bedroom 2 | 100% | Yes |
| E.09.006 | LKD | 100% | Yes |
| E.09.006 | Bedroom 1 | 99% | Yes |
| E.09.006 | Bedroom 2 | 100% | Yes |
| E.09.007 | LKD | 100% | Yes |
| E.09.007 | Bedroom 1 | 99% | Yes |
| E.09.007 | Bedroom 2 | 100% | Yes |
| E.09.008 | LKD | 98% | Yes |
| E.09.008 | Bedroom 1 | 100% | Yes |
| E.09.008 | Bedroom 2 | 100% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.29 SDA Results: Block E - Apartment Units - Level 10 & 11

| Table No. D.2.29 - Supplementary NSL Results: Block E - Apartments - Level 10 & 11 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.10.001 | LKD | 98% | Yes |
| E.10.001 | Bedroom 1 | 100% | Yes |
| E.10.001 | Bedroom 2 | 100% | Yes |
| E.10.002 | LKD | 100% | Yes |
| E.10.002 | Bedroom 1 | 99% | Yes |
| E.10.002 | Bedroom 2 | 100% | Yes |
| E.10.003 | LKD | 100% | Yes |
| E.10.003 | Bedroom 1 | 99% | Yes |
| E.10.003 | Bedroom 2 | 100% | Yes |
| E.10.004 | LKD | 98% | Yes |
| E.10.004 | Bedroom 1 | 100% | Yes |
| E.10.004 | Bedroom 2 | 100% | Yes |
| E.10.005 | LKD | 100% | Yes |
| E.10.005 | Bedroom 1 | 100% | Yes |
| E.10.005 | Bedroom 2 | 97% | Yes |
| E.10.006 | LKD | 100% | Yes |
| E.10.006 | Bedroom 1 | 100% | Yes |
| E.10.006 | Bedroom 2 | 97% | Yes |
| E.11.001 | LKD | 98% | Yes |
| E.11.001 | Bedroom 1 | 100% | Yes |
| E.11.001 | Bedroom 2 | 100% | Yes |
| E.11.002 | LKD | 100% | Yes |
| E.11.002 | Bedroom 1 | 99% | Yes |
| E.11.002 | Bedroom 2 | 100% | Yes |
| E.11.003 | LKD | 100% | Yes |
| E.11.003 | Bedroom 1 | 99% | Yes |
| E.11.003 | Bedroom 2 | 100% | Yes |
| E.11.004 | LKD | 98% | Yes |
| E.11.004 | Bedroom 1 | 100% | Yes |
| E.11.004 | Bedroom 2 | 100% | Yes |
| E.11.005 | LKD | 100% | Yes |
| E.11.005 | Bedroom 1 | 100% | Yes |
| E.11.005 | Bedroom 2 | 97% | Yes |
| E.11.006 | LKD | 100% | Yes |
| E.11.006 | Bedroom 1 | 100% | Yes |
| E.11.006 | Bedroom 2 | 97% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.30 SDA Results: Block E - Apartment Units - Level 12 & 13

| Table No. D.2.30 - Supplementary NSL Results: Block E - Apartments - Level 12 & 13 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| E.12.001 | LKD | 98% | Yes |
| E.12.001 | Bedroom 1 | 100% | Yes |
| E.12.001 | Bedroom 2 | 100% | Yes |
| E.12.002 | LKD | 100% | Yes |
| E.12.002 | Bedroom 1 | 99% | Yes |
| E.12.002 | Bedroom 2 | 100% | Yes |
| E.12.003 | LKD | 100% | Yes |
| E.12.003 | Bedroom 1 | 99% | Yes |
| E.12.003 | Bedroom 2 | 100% | Yes |
| E.12.004 | LKD | 98% | Yes |
| E.12.004 | Bedroom 1 | 100% | Yes |
| E.12.004 | Bedroom 2 | 100% | Yes |
| E.12.005 | LKD | 100% | Yes |
| E.12.005 | Bedroom 1 | 100% | Yes |
| E.12.005 | Bedroom 2 | 97% | Yes |
| E.12.006 | LKD | 100% | Yes |
| E.12.006 | Bedroom 1 | 100% | Yes |
| E.12.006 | Bedroom 2 | 97% | Yes |
| E.13.001 | LKD | 100% | Yes |
| E.13.001 | Bedroom 1 | 100% | Yes |
| E.13.001 | Bedroom 2 | 100% | Yes |
| E.13.001 | Bedroom 3 | 100% | Yes |
| E.13.002 | LKD | 100% | Yes |
| E.13.002 | Bedroom 1 | 100% | Yes |
| E.13.002 | Bedroom 2 | 99% | Yes |
| E.13.002 | Bedroom 3 | 100% | Yes |
| E.13.003 | LKD | 99% | Yes |
| E.13.003 | Bedroom 1 | 100% | Yes |
| E.13.003 | Bedroom 2 | 100% | Yes |
| E.13.003 | Bedroom 3 | 100% | Yes |
| E.14.001 | LKD | 100% | Yes |
| E.14.001 | Bedroom 1 | 100% | Yes |
| E.14.001 | Bedroom 2 | 100% | Yes |
| E.14.001 | Bedroom 3 | 99% | Yes |
| E.14.002 | LKD | 100% | Yes |
| E.14.002 | Bedroom 1 | 100% | Yes |
| E.14.002 | Bedroom 2 | 100% | Yes |
| E.14.002 | Bedroom 3 | 99% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.31 SDA Results: Block H - Apartment Units - Level 01

| Table No. D.2.31 - Supplementary NSL Results: Block H - Apartment Units - Level 01 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| H.01.001 | LKD | 100% | Yes |
| H.01.001 | Bedroom 1 | 99% | Yes |
| H.01.001 | Bedroom 2 | 93% | Yes |
| H.01.002 | LKD | 97% | Yes |
| H.01.002 | Bedroom 1 | 97% | Yes |
| H.01.003 | LKD | 97% | Yes |
| H.01.003 | Bedroom 1 | 99% | Yes |
| H.01.004 | LKD | 100% | Yes |
| H.01.004 | Bedroom 1 | 95% | Yes |
| H.01.004 | Bedroom 2 | 90% | Yes |
| H.01.005 | LKD | 100% | Yes |
| H.01.005 | Bedroom 1 | 97% | Yes |
| H.01.006 | LKD | 97% | Yes |
| H.01.006 | Bedroom 1 | 97% | Yes |
| H.01.007 | LKD | 95% | Yes |
| H.01.007 | Bedroom 1 | 99% | Yes |
| H.01.008 | LKD | 100% | Yes |
| H.01.008 | Bedroom 1 | 95% | Yes |
| H.01.008 | Bedroom 2 | 87% | Yes |
| H.01.009 | LKD | 97% | Yes |
| H.01.009 | Bedroom 1 | 97% | Yes |
| H.01.010 | LKD | 100% | Yes |
| H.01.010 | Bedroom 1 | 95% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that “Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line.”

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.32 SDA Results: Block H - Apartment Units - Level 02

| Table No. D.2.32 - Supplementary NSL Results: Block H - Apartment Units - Level 02 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| H.02.001 | LKD | 100% | Yes |
| H.02.001 | Bedroom 1 | 99% | Yes |
| H.02.001 | Bedroom 2 | 93% | Yes |
| H.02.002 | LKD | 97% | Yes |
| H.02.002 | Bedroom 1 | 97% | Yes |
| H.02.003 | LKD | 97% | Yes |
| H.02.003 | Bedroom 1 | 98% | Yes |
| H.02.004 | LKD | 100% | Yes |
| H.02.004 | Bedroom 1 | 96% | Yes |
| H.02.004 | Bedroom 2 | 91% | Yes |
| H.02.005 | LKD | 100% | Yes |
| H.02.005 | Bedroom 1 | 98% | Yes |
| H.02.005 | Bedroom 2 | 94% | Yes |
| H.02.006 | LKD | 97% | Yes |
| H.02.006 | Bedroom 1 | 98% | Yes |
| H.02.007 | LKD | 95% | Yes |
| H.02.007 | Bedroom 1 | 99% | Yes |
| H.02.008 | LKD | 100% | Yes |
| H.02.008 | Bedroom 1 | 96% | Yes |
| H.02.008 | Bedroom 2 | 89% | Yes |
| H.02.009 | LKD | 100% | Yes |
| H.02.009 | Bedroom 1 | 96% | Yes |
| H.02.009 | Bedroom 2 | 93% | Yes |
| H.02.010 | LKD | 97% | Yes |
| H.02.010 | Bedroom 1 | 97% | Yes |
| H.02.011 | LKD | 97% | Yes |
| H.02.011 | Bedroom 1 | 99% | Yes |
| H.02.012 | LKD | 100% | Yes |
| H.02.012 | Bedroom 1 | 99% | Yes |
| H.02.012 | Bedroom 2 | 100% | Yes |
| H.02.012 | Bedroom 3 | 95% | Yes |
| H.02.013 | LKD | 100% | Yes |
| H.02.013 | Bedroom 1 | 97% | Yes |
| H.02.013 | Bedroom 2 | 88% | Yes |
| H.02.014 | LKD | 96% | Yes |
| H.02.014 | Bedroom 1 | 98% | Yes |
| H.02.015 | LKD | 97% | Yes |
| H.02.015 | Bedroom 1 | 97% | Yes |
| H.02.016 | LKD | 100% | Yes |
| H.02.016 | Bedroom 1 | 97% | Yes |
| H.02.016 | Bedroom 2 | 94% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

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## D.2.33 SDA Results: Block H - Apartment Units - Level 03

| Table No. D.2.33 - Supplementary NSL Results: Block H - Apartment Units - Level 03 | | | |
|---|---|---|---|
| Unit Number | Room Description | No Sky Line (NSL) | |
| | | % of room where the sky is visible from the working plane | Above 80%* |
| H.03.001 | LKD | 100% | Yes |
| H.03.001 | Bedroom 1 | 97% | Yes |
| H.03.001 | Bedroom 2 | 93% | Yes |
| H.03.002 | LKD | 98% | Yes |
| H.03.002 | Bedroom 1 | 97% | Yes |
| H.03.003 | LKD | 97% | Yes |
| H.03.003 | Bedroom 1 | 98% | Yes |
| H.03.004 | LKD | 100% | Yes |
| H.03.004 | Bedroom 1 | 98% | Yes |
| H.03.004 | Bedroom 2 | 100% | Yes |
| H.03.004 | Bedroom 3 | 95% | Yes |
| H.03.005 | LKD | 100% | Yes |
| H.03.005 | Bedroom 1 | 97% | Yes |
| H.03.005 | Bedroom 2 | 90% | Yes |
| H.03.006 | LKD | 96% | Yes |
| H.03.006 | Bedroom 1 | 98% | Yes |

* Whilst the BRE Guidelines do not provide target values for NSL in a proposed development, it states that "Supplementary electric lighting will be needed if a significant part of the working plane (20% of the room or more) lies beyond the no sky line."

For floor plans of the assessed units please refer to section C.1 on page 93.

## 2.4 Wind Microclimate Modelling

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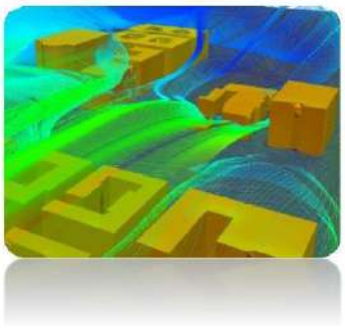
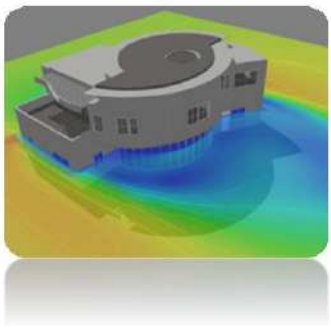
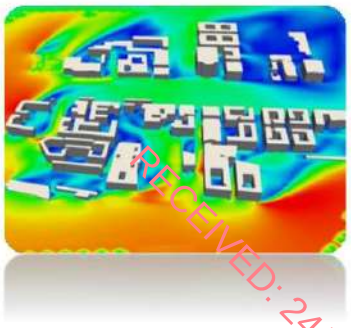

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# WIND MICROCLIMATE MODELLING

## Sea Gardens (Phase 2) Development

Bray

Prepared by: B-Fluid Ltd.| Buildings Fluid Dynamics Consultants

For: Shankill Property Investments Limited

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Buildings Fluid Dynamics

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| Document Reference | | |
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| Project Name | WIND MICROCLIMATE MODELLING<br>Sea Gardens (Phase 2) Development | |
| Project Ref. | *W*_2309491 | |
| Site location | Bray | |
| CFD Study by | B-Fluid Ltd. | |
| Engineers | Dr. Cristina Paduano<br>CFD Modelling Specialist<br>CEng MIEI, PhD. Mech Eng., MEng. Aerospace Eng. | |
| | Dr. Arman Safdari<br>CFD Modelling Specialist<br>PhD. MEng, MSc. Mech.Eng. | Dr. Yuxiang Zhang<br>CFD Modelling Specialist<br>PhD. Civil Eng., MSc. Structural.Eng. |
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B-Fluid
Buildings Fluid Dynamics

**B-Fluid Ltd.|Buildings Fluid Dynamic Consultants**

**Ireland**: The Studio, 55 C Maple Avenue, Stillorgan, Dublin, A94 HY83
t: +353 (0)1 506 5671 m: +353 (0)85 713 6352

**UK**: Harwell Innovation Centre, 173 Curie Avenue, Didcot, OX11 0QG
t: +44 (0) 870 489 0207

Email: info@b-fluid.com
Website: www.b-fluid.com

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# 1. EXECUTIVE SUMMARY

B-Fluid Limited has been commissioned by 'Shankill Property Investments Limited' to perform a Wind Microclimate Study for the Sea Gardens (Phase 2) Development in Bray.

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Shankill Property Investments Limited (the applicant) is seeking permission from Wicklow County Council (WCC) for a proposed development on a site of approximately 21 hectares located on the former Bray Golf Course lands in Bray, County Wicklow. This proposed development pertains to Sea Gardens Phase 2, which is part of the Sea Gardens Masterplan (previously known as the Harbour Point Masterplan). The Masterplan has been developed by the applicant in collaboration with a multidisciplinary team.

In summary, the application for Sea Gardens Phase 2 proposes a mixed-use development comprising residential (c. 41,013 sq.m), retail/retail services (c. 8,155 sq.m), and commercial (c. 10,961 sq.m) spaces. The residential component will comprise 341 residential units (94 houses, 106 duplex units, and 141 apartments located in Blocks E and H). In addition, a hotel is proposed in Block I, a public house in Block E, a childcare facility and a medical centre in Block H, and retail/retail services units distributed in Blocks E, G, H and I. The proposed development will also provide private, communal, and public open spaces, along with car and bicycle parking for residents and visitors. An internal road network for vehicles, cyclists, and pedestrians will connect to the existing transport networks. All associated development infrastructure will also be provided, including public lighting, hard and soft landscaping, utilities, drainage, and clearance, demolition and removal of existing structures on site.

The proposed heights are as follows: houses will be 2 storeys, duplex units will be 2-3 storeys, Block E will be 3-15 storeys, Block G will be 1-2 storeys, Block H will be 3-4 storeys and Block I will be 3-7 storeys.

Sea Gardens Phase 2 will complement the permitted Sea Gardens Phase 1A (construction of which is nearing completion) and Phase 1B, as well as the future Phase 3, which will be the subject of a separate application. Phase 3, located adjacent to the River Dargle, is expected to accommodate approximately 362 residential units above a podium, including approximately 14,000 sq.m of retail and other uses. The building heights in Phase 3 will range from 6-9 storeys. This area has been included in the current application for Sea Gardens Phase 2 to allow for temporary use during construction for storing materials and site facilities.

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Figure 1.1: Proposed Sea Gardens (Phase 2) Development

Figure 1.1 shows a view of the proposed development (colored in orange) in the existing urban context.

The method for the study of wind microclimate combines the use of Computational Fluid Dynamics (CFD) to predict wind velocities and wind flow patterns, with the use of wind data from suitable meteorological station and the recommended comfort and safety standards (Lawson Criteria).

The effect of the geometry, height and massing of the proposed development and existing surroundings including topography, ground roughness and landscaping of the site, on local wind speed and direction is considered as well as the pedestrian activity to be expected (sitting, standing, strolling and fast walking).

The results of the assessment are presented in the form of contours of the Lawson criteria at pedestrian level.

The assessment has comprised the following scenarios:

- **Baseline Existing Scenario**: this consist of the existing wind microclimate at the site. Figure 1.2 shows a view of the existing surrounding buildings (in white).

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Figure 1.2: Buildings in the Baseline Scenario (Existing buildings in white)

- **Proposed Development Scenario**: this consist of the assessment of the wind microclimate of the site with the proposed development surrounded by existing buildings. Figure 1.3 shows a view of the buildings in the proposed development (colored in orange) and existing surrounding buildings (in white).

Figure 1.3: Buildings in the Proposed Scenario (Development in orange, existing buildings in white)

- **Cumulative Scenario**: this consist of the assessment of the wind microclimate of the site with the proposed development surrounded by existing and permitted buildings.

This detailed wind analysis, conducted with the presence of already developed and future buildings, provides crucial insights into the current conditions that could affect the immediate surroundings of the area. Figure 1.4 shows buildings within the cumulative scenario which include the buildings in the proposed development, existing surrounding buildings, and the buildings that are not yet built (colored in cyan).

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Figure 1.4: Buildings in the Cumulative Scenario (Development in orange, existing buildings in white, cumulative buildings in cyan)

Based on the analysis conducted, it can be concluded that:

- The wind profile was built using the annual average of meteorology data collected at Dublin Airport Weather Station purchased from Meteoblue. The local wind speed was determined from CFD simulations with combination of the parameters inside Weibull probability distribution function, which obtained form historical meteorological data recorded 10m above ground level at Dublin Airport.
- A 12-discrete set of wind direction is used in order to evaluate the probability of exceedance at any given threshold speed. It is found that the prevailing wind direction in the west has the largest contribution of the discomfort exceedance probability.
- Microclimate Assessment of Sea Gardens (Phase 2) Development and it's environment was performed utilizing a CFD (Computational Fluid Dynamics) methodology.
- The assessment of the proposed scenario has shown that the proposed development meets the Lawson Comfort Criteria where no area is unsafe, and no conditions of distress are created by the proposed development. All the ground amenities proposed can be used for their intended scope. The wind microclimate of the proposed development is comfortable and usable for pedestrians.
- As a result of the proposed development construction, the wind on the surrounding

urban context remains suitable for the intended use when compared with the baseline situation.

- The proposed development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings. Moreover, in terms of distress, no critical conditions were found for “Frail persons or cyclists” and for members of the ”General Public” in the surrounding of the development.
- As a result of the construction of cumulative buildings in the future, the wind conditions on the surrounding urban context remains the same when compared with the proposed development situation. The cumulative buildings will have a negligible effect on the surrounding wind microclimate.

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Therefore, the CFD study carried out has shown that under the assumed wind conditions typically occurring within Dublin for the past 15 years:

- **The development is designed to be a high-quality environment for the scope of use intended of each areas/building (i.e. comfortable and pleasant for potential pedestrian), and,**
- **The development does not introduce any critical impact on the surrounding buildings, or nearby adjacent roads.**

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# 2. INTRODUCTION

B-Fluid Limited has been commissioned by 'Shankill Property Investments Limited' to perform a Wind Microclimate Study for the Sea Gardens (Phase 2) Development in Bray.

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Figure 2.1 shows a view of the existing surrounding buildings (in white). Figure 2.2 shows a view of the buildings in the proposed development (colored in orange) and existing surrounding buildings (in white). Figure 2.3 shows buildings within the cumulative scenario which include the buildings in the proposed development, existing surrounding buildings, and the buildings that are not yet built (colored in cyan).

Figure 2.1: Buildings in the Baseline Scenario (Existing buildings in white)

Figure 2.2: Buildings in the Proposed Scenario (Baldoyle LRD in orange, existing buildings in white)

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Figure 2.3: Buildings in the Cumulative Scenario (Baldoyle LRD in orange, existing buildings in white, cumulative buildings in cyan)

This report is completed by Dr. Cristina Paduano, Dr. Arman Safdari and Dr. Chino Uzoka.

Dr. Cristina Paduano is a Chartered Engineer (CEng) and member of Engineers Ireland who specialises in computational fluid dynamics applications for urban environment and the construction industry with over 18 years experience. She holds a PhD in Mechanical Engineering from Trinity College Dublin, with M.Eng and B.Eng in Aerospace Engineering.

Dr. Arman Safdari is a member of Engineers Ireland and CFD Modelling Engineer who specialises in computational fluid dynamics applications. He is an expert in airflow modeling, heat and mass transfer and multi-phase flow simulations. He holds a PhD in Mechanical Engineering from Pusan National University, a M.Sc. and B.Sc. in Mechanical Engineering.

Dr. Chino Uzoka is a member of Engineers Ireland and a CFD Modelling Engineer specializing in computational fluid dynamics applications. He is an expert in modeling complex fluid flows in the built environment including flow equipment optimization. He holds a PhD in Mechanical Engineering and MSc in Engineering Management from the University of Huddersfield, UK

A wind microclimate study considers the possible wind patterns formed under both mean and peak wind conditions typically occurring on the site area, accounting for a scenario where the proposed development is inserted in the existing environment (potential impact) and, for a scenario where the proposed development is analysed together with the existing environment and any permitted development (not constructed yet) that can be influenced by the wind patterns generated by the proposed one (cumulative impact).

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The potential receptors include those areas, in the surrounding of the development, which can be exposed to potential risks generated by the elevated wind speed or building massing wind effects. In particular:

- Amenity areas (pedestrian level), areas likely to be utilised for leisure purposes and as such should be comfortable surroundings.
- Pedestrian routes and seating areas – to determine if locations are comfortable for leisure activities.
- Entrance to the buildings – to determine if there is potential for pressure related issues for entrances or lobbies.
- Landscaped areas – where there are sheltered areas.
- Impact to existing or adjoining developments – where the proposed buildings will cause discomfort conditions through proximity related issues.

The acceptance criteria which define the acceptable wind velocities in relation to the perception of comfort level experienced while carrying out a specific pedestrian activity is known as the "Lawson Criteria for Pedestrian Comfort and Distress". A wind microclimate study analyses the wind flow in an urban context (considering the wind conditions typically occurring on the site during a typical year) to develop the so called "Lawson Comfort and Distress Map"; the map identifies where a specific pedestrian activity can be carried out comfortably during most of the time.

The assessment can be performed by physical testing in wind tunnels or by performing "virtual wind tunnel testing" through numerical simulation using Computational Fluid Dynamics (CFD), as done for this project. The scope of the numerical study is to simulate the wind around the development, in order to predict the wind speeds the pedestrians will be exposed to and the level of comfort they will experience when carrying out a specific activity (i.e. walking, strolling, sitting).

The following sections details the methodology, acceptance criteria, CFD wind simulations and the impact of the proposed development on the local wind microclimate against best practice guidelines for pedestrian comfort and safety.

## 2.1 GUIDANCE and LEGISLATION

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According to the 'Urban Development and Building Heights, Guidelines for Planning Authorities (Government of Ireland, December 2020)' document, specific wind impact assessment of the microclimatic effects should be performed for 'buildings taller than prevailing building heights in urban areas'. In the same guidance, standard buildings height is considered 6-8 storeys. Above this height, buildings are considered 'taller' for Dublin standards.

The recommended approach to wind microclimate studies is outlined in the "Wind Microclimate Guidelines for Developments in the City of London '(August 2019) and in the guidelines and recommendations contained in BRE Digest (DG) 520, "Wind Microclimate Around Buildings" (BRE, 2011). The Lawson Criteria of Comfort and Distress is used to benchmark the pedestrian wind microclimate.

The document also indicates how to use Computational fluid dynamics (CFD) to assess wind microclimate conditions and how to generate high quality outputs to provide a good understanding of the fundamental flow features around an urban context.

Usually, the recommended approach to wind microclimate studies is based on the building height, as presented in Figure 2.4.

| Building Height | Recommended Approach to Wind Microclimate Studies |
|---|---|
| Similar or lower than the average height of surrounding buildings<br><br>**Up to 25m** | Wind studies are not required, unless sensitive pedestrian activities are intended (e.g. around hospitals, transport hubs, etc.) or the project is located on an exposed location |
| Up to double the average height of surrounding buildings<br><br>**25m to 50m** | Computational Fluid Dynamics (CFD) Simulations **OR** Wind Tunnel Testing |
| Up to 4 times the average height of surrounding buildings<br><br>**50m to 100m** | Computational Fluid Dynamics (CFD) Simulations **AND** Wind Tunnel Testing |
| High Rise<br><br>**Above 100m** | Early-Stage Massing Optimization: Wind Tunnel Testing **OR** Computational Fluid Dynamics (CFD) Simulations<br><br>Detailed Design: Wind Tunnel Testing **AND** Computational Fluid Dynamics (CFD) Simulations |

Figure 2.4: Recommended Approach to Wind Microclimate Studies based on Building Height, as prescribed by the Wind Microclimate Guidelines for Developments in the City of London (August 2019)

## 2.2 URBAN WIND EFFECTS

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Buildings and topography affect the speed and direction of wind flows. Wind speed increases with increasing height above the ground, assuming a parabolic profile.

Flow near the ground level encounters obstacles represented by terrain roughness/buildings that reduce the wind speed and introduce random vertical and horizontal velocity components. This turbulence causes vertical mixing between the air moving horizontally at one level, and the air at those levels immediately above and below it. For this reason, the wind velocity profile is given by a fluctuating velocity along a mean velocity value. Figure 2.5 shows the wind velocity profile, as described above.

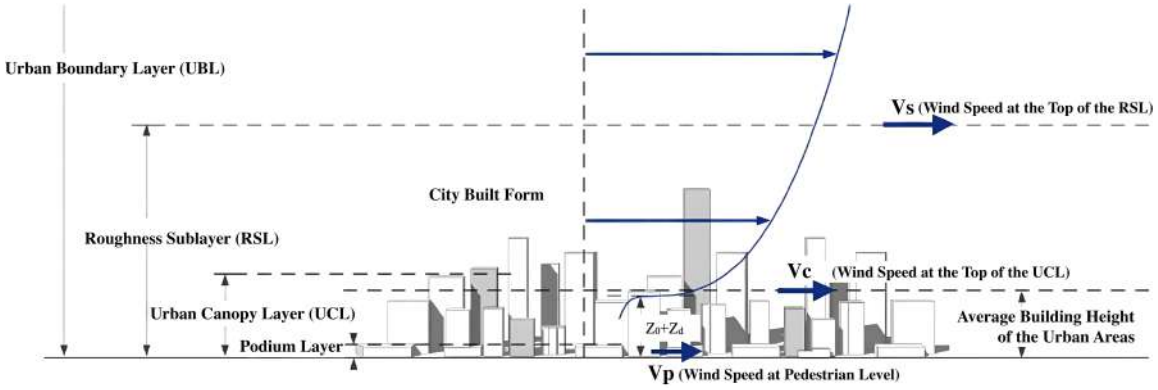


Figure 2.5: Wind Velocity Profile

In an urban context, wind speeds at pedestrian level are generally low compared with upper-level wind speeds, however, the wind can create adverse patterns when flowing in between buildings which can cause local wind accelerations or re-circulations. This wind patterns effect pedestrian safety and comfort. In general, the wind effects to be avoided/mitigated in an urban context include the following:

- **Funnelling Effects**: The wind can accelerate significantly when flowing through a narrow passage between building structures. The highest speeds are experienced at the point where the restriction of the area is the greatest.

- **Downwash Effects**: The air stream when striking a tall building can flow around it, over it and a part can be deflected towards the ground. This downward component is called downwash effect and its intensity depends on the pressure difference driving the wind. The higher the building, the higher this pressure difference can be.

- **Corner Effects**: Wind can accelerate around the corners of the buildings. Pedestrians can experience higher wind speeds as well as more sudden changes in wind speeds. The reason for this is that there are narrow transition zones between the accelerated flows and the adjacent quiescent regions. This effect is linked to the downwash effect as the downward stream component subsequently flows around the corners towards the leeward side of the building.

- **Wake Effect**: Excessive turbulence can occur in the leeward side of the building. This can cause sudden changes in wind velocity and can raise dust or lead to accumulation of debris. This effect is also dependent on the height of the building.

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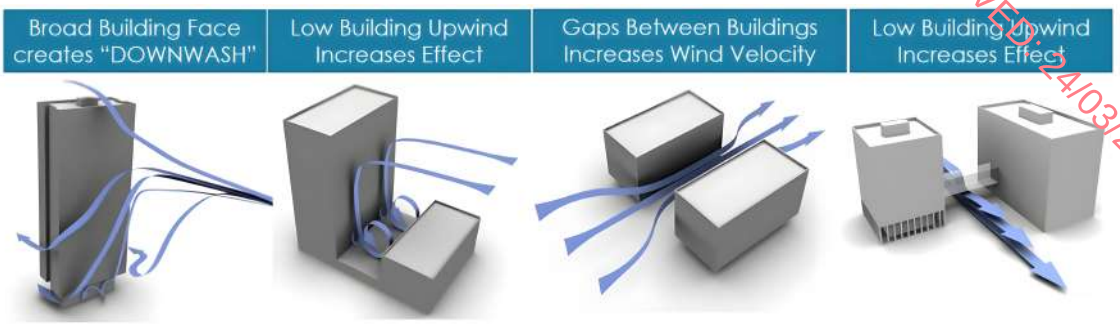


Figure 2.6: Parameters to know for Wind Conditions Assessment

The anticipation of the likely wind conditions resulting from new developments are important considerations in the context of pedestrian comfort and the safe use of the public realm. While it is not always practical to design out all the risks associated with the wind environment, it is possible to provide local mitigation to minimise risk or discomfort where required.

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# 3. ASSESSMENT METHODOLOGY

## 3.1 METHOD OF ASSESSMENT

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The method for the study of wind microclimate combines the use of Computational Fluid Dynamics (CFD) to predict wind velocities and wind flow patterns, with the use of wind data from suitable meteorological station and the recommended comfort and safety standards (Lawson Criteria). The effect of the geometry, height and massing of the proposed development and existing surroundings including topography, ground roughness and landscaping of the site, on local wind speed and direction is considered as well as the pedestrian activity to be expected (sitting, standing, strolling and fast walking). The results of the assessment are presented in the form of contours of the Lawson criteria at pedestrian level.

The assessment has comprised the following scenarios:

- **Baseline Existing Scenario**: this consist of the existing wind microclimate at the site.

- **Proposed Development Scenario**: this consist of the assessment of the wind microclimate of the site with the proposed development surrounded by existing buildings.

- **Cumulative Scenario**: this consist of the assessment of the wind microclimate of the site with the proposed development surrounded by existing and permitted buildings.

In accordance with the guideline cited in section 1.1, the wind microclimate study should consider the effect of the proposed development together with buildings (existing and/or permitted) that are within 800m from the centre of the site, as shown in Figure 3.1. Other taller buildings outside of this zone that could have an influence on wind conditions within the project site should be included for wind directions where they are upwind of the project site.

Figure 3.1: Area of interest to be modelled

In particular, the following has been undertaken:

- Topography of the site with buildings (proposed and adjacent existing/permitted developments massing, depending on the scenario assessed "baseline, proposed or cumulative") have been modelled using OpenFOAM Software.

- Suitable wind conditions have been determined based on historic wind data. Criteria and selected wind scenarios included means and peaks wind conditions that need to be assessed in relation to the Lawson Criteria.

- Computational Fluid Dynamics (CFD) has been used to simulate the local wind environment for the required scenarios ('baseline, proposed, cumulative").

- The impact of the proposed development massing on the local wind environment has been determined (showing the wind flows obtained at pedestrian level).

- Potential receptors (pedestrian areas) have been assessed through review of external amenity/public areas (generating the Lawson Comfort and Distress Map).

- Potential mitigation strategies for any building related discomfort conditions (where necessary) have been explored and their effect introduced in the CFD model produced.

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## 3.2 ACCEPTANCE CRITERIA

Pedestrian Wind Comfort is measured in function of the frequency of wind speed threshold exceeded based on the pedestrian activity. The assessment of pedestrian level wind conditions requires a standard against which measured or expected wind velocities can be compared.

Only gust winds are considered in the safety criterion. These are usually rare events, but deserve special attention in city planning and building design due to their potential impact on pedestrian safety. Gusts cause the majority of cases of annoyance and distress and are assessed in addition to average wind speeds. Gust speeds should be divided by 1.85 and these "gust equivalent mean" (GEM) speeds are compared to the same criteria as for the mean hourly wind speeds. This avoids the need for different criteria for mean and gust wind speeds.

The following criteria are widely accepted by municipal authorities as well as the international building design and city planning community:

- DISCOMFORT CRITERIA: Relates to the activity of the individual.
  Onset of discomfort:
  - Depends on the activity in which the individual is engaged and is defined in terms of a mean hourly wind speed (or GEM) which is exceeded for 5% of the time.

- DISTRESS CRITERIA: Relates to the physical well-being of the individual.
  Onset of distress:
  - 'Frail Person Or Cyclist': equivalent to an hourly mean speed of 15 m/s to be exceeded more than 0.023% per year. This is intended to identify wind conditions which less able individuals or cyclists may find physically difficult. Conditions in excess of this limit may be acceptable for optional routes and routes which less physically able individuals are unlikely to use.
  - 'General Public': A mean speed of 20 m/s or larger speed to be exceeded more than 0.023% per year, when aerodynamic forces approach body weight makes it impossible for anyone to remain standing. If wind speeds exceed these values, pedestrian access should be discouraged.

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The above criteria set out six pedestrian activities and reflect the fact that calm activity requires calm wind conditions, which are summarised by the Lawson scale, shown in Figure 3.2. Lawson scale assesses pedestrian wind comfort in absolute terms and defines the reaction of an average person to the wind. Each wind type is associated to a number, corresponding to the Beaufort scale. Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land. A 20% exceedance is used in these criteria to determine the comfort category, which suggests that wind speeds would be comfortable for the corresponding activity at least 80% of the time or four out of five days.

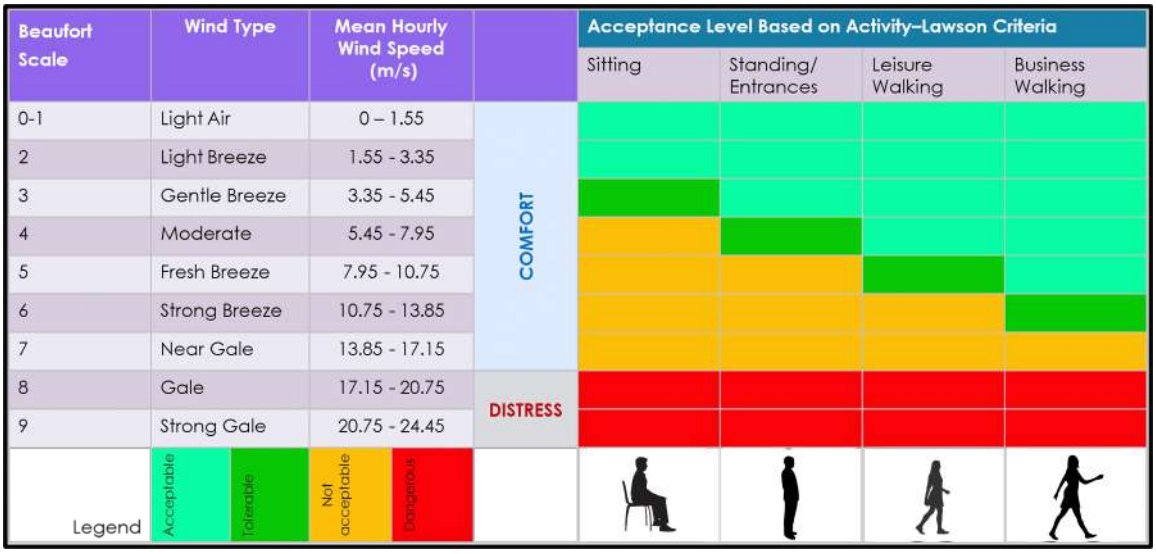


Figure 3.2: Lawson Scale

These criteria for wind forces represent average wind tolerances. They are subjective and variable depending on thermal conditions, age, health, clothing, etc. which can all affect a person's perception of a local microclimate. Moreover, pedestrian activity alters between winter and summer months. The criteria assume that people will be suitably dressed for the time of year and individual activity. It is reasonable to assume, for instance, that areas designated for outdoor seating will not be used on the windiest days of the year. Weather data measured are used to calculate how often a given wind speed will occur each year over

a specified area.

Pedestrian comfort criteria are assessed at 1.5m above ground level. Unless in extremely unusual circumstances, velocities at pedestrian level increase as you go higher from ground level.

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A breach of the distress criteria requires a consideration of:

- whether the location is on a major route through the complex,
- whether there are suitable alternate routes which are not distressful.

If the predicted wind conditions exceed the threshold, then conditions are unacceptable for the type of pedestrian activity and mitigation measure should be implemented into the design.

| Pedestrian Comfort Category (Lawson Scale) | Mean and Gem wind speed not to be exceeded more than 5% of the time | Description |
|---|---|---|
| **Long-Term Sitting** | 4m/s | Acceptable for frequent outdoor sitting use, i.e., restaurant /café |
| **Standing** | 6m/s | Acceptable for occasional outdoor sitting use, i.e., public outdoor spaces |
| **Walking/Strolling** | 8m/s | Acceptable for entrances/bus stops /covered walkaways |
| **Business Walking** | 10m/s | Acceptable for external pavements, walkways |
| **Unacceptable/Distress** | >10m/s | Start of not comfortable/distress level for pedestrian access |

Figure 3.3: Lawson Categories Scale - Comfort

| Pedestrian Safety Category (Lawson Scale) | Mean and Gem wind speed not to be exceeded more than 0.0022% of the time | Description |
|---|---|---|
| Unsafe for public | >20m/s | Distress/safety concern for pedestrian |
| Unsafe for cyclists or frail person | >15m/s | Distress/safety concern for cyclist/frail person |

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Figure 3.4: Lawson Categories Scale - Distress/Safety

If the predicted wind conditions exceed the threshold, then such condition is unacceptable for the type of pedestrian activity required and mitigation measures should be implemented into the design.

## 3.3 SIGNIFICANCE CRITERIA

The significance of on-site measurement locations are defined by comparing the wind comfort/safety levels with the intended pedestrian activity at each location, using the table provided by the Lawson Comfort and Distress Criteria.

The significance of off-site measurement locations are defined by comparing the wind comfort/safety levels with the intended pedestrian activity at each location, prior and after the introduction of the proposed development.

| Significance | Trigger | Mitigation required? |
|---|---|---|
| Major Adverse | Conditions are "unsafe" | Yes |
| Moderate Adverse | Conditions are "unsuitable" (in terms of comfort) for the intended pedestrian use. | Yes |
| Negligible | Conditions are "suitable" for the intended pedestrian use. | No |
| Moderate Beneficial | Conditions are calmer than required for the intended pedestrian use (by at least one comfort category). | No |

Figure 3.5: Significance Criteria for On-site Receptors

| Significance | Trigger | Mitigation required? |
|---|---|---|
| Major Adverse | Conditions that were "safe" in the baseline scenario became "unsafe" as a result of the Proposed Development.<br>*OR*<br>Conditions that were "suitable" in terms of comfort in the baseline scenario became "unsuitable" because of the Proposed Development.<br>*OR*<br>Conditions that were "unsafe" in the baseline scenario are made worse because of the Proposed Development. | Yes |
| Moderate Adverse | Conditions that were "suitable" in terms of comfort in the baseline scenario are made windier (by at least one comfort category) as a result of the Proposed Development but remain "suitable" for the intended pedestrian activity. | No |
| Negligible | Conditions remain the same as in the baseline scenario. | No |
| Major Beneficial | Conditions that were "unsafe" in the baseline scenario became "safe" because of the Proposed Development. | No |
| Moderate Beneficial Potential Receptors | Conditions that were "unsuitable" in terms of comfort in the baseline scenario became "suitable" because of the Proposed Development.<br>*OR*<br>Conditions that were "unsafe" in the baseline scenario are made better as a result of the Proposed Development (but not so as to make them "safe". | No |

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Figure 3.6: Significance Criteria for Off-site Receptors

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# 4. CFD MODELLING METHOD

## 4.1 INTRODUCTION OF CFD TECHNIQUE

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Computational Fluid Dynamics (CFD) is a numerical technique to simulate fluid flow, heat and mass transfer, chemical reaction and combustion, multiphase flow, and other phenomena related to fluid flows. CFD modelling includes three main stage: pre-processing, simulation and post-processing as described in Figure 4.1. The Navier-Stokes equations, used within CFD analysis, are based entirely on the application of fundamental laws of physics and therefore produce extremely accurate results providing that the scenario modelled is a good representation of reality.

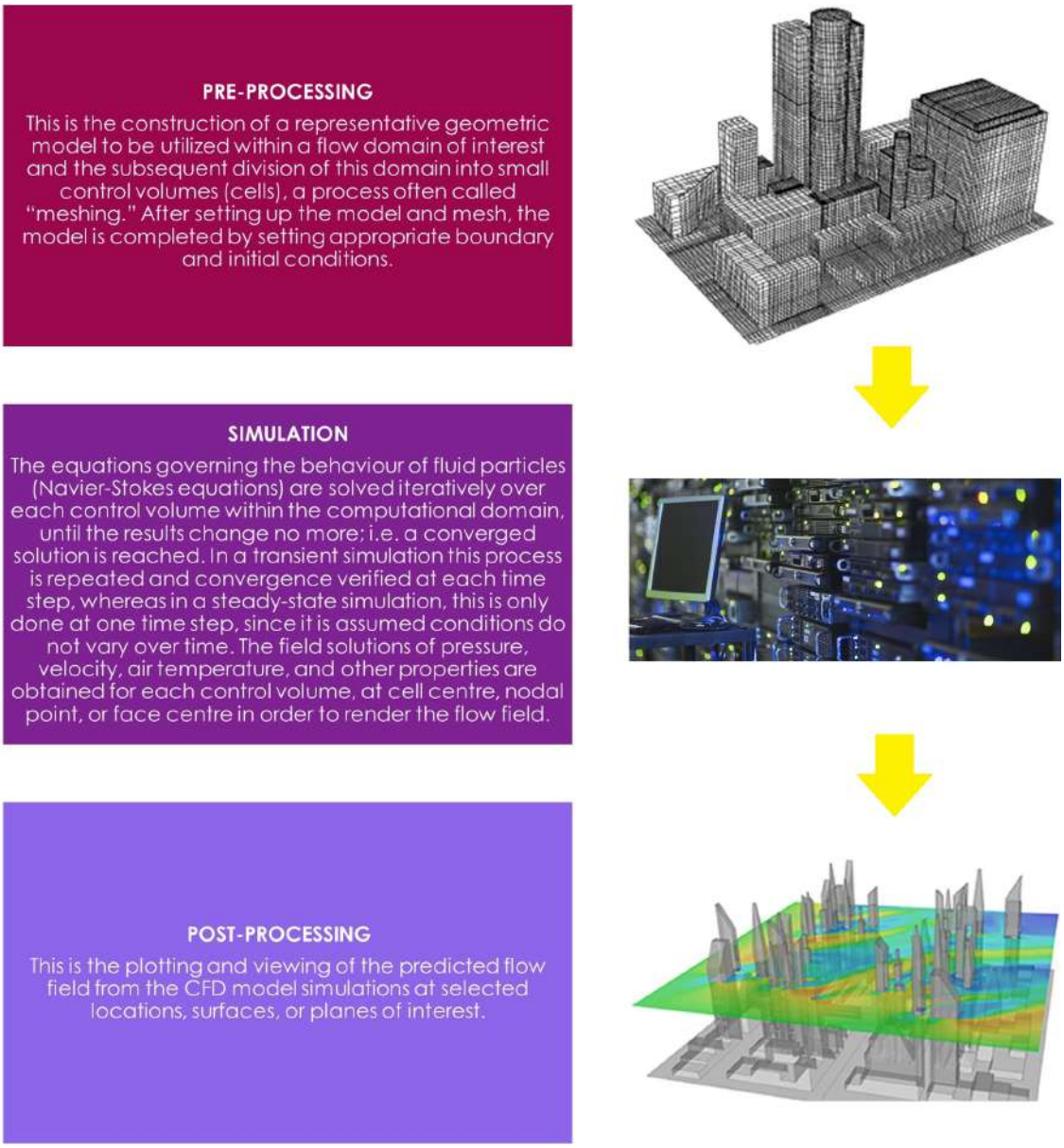


Figure 4.1: CFD Modelling Process Explanation

## 4.2 CFD SOFTWARE DETAILS

This report employs OpenFOAM Code, based on the concept of Reynolds-Averaged Navier-Stokes (RANS) formulations and the post-processing visualisation tool ParaView. OpenFOAM is a CFD software released and developed primarily by OpenCFD Ltd, since 2004. It has a large user base across most areas of engineering and science, from both commercial and academic organisations. OpenFOAM has an extensive range of features to solve anything from complex fluid flows involving chemical reactions, turbulence and heat transfer, to acoustics, solid mechanics and electromagnetics.

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## 4.3 CFD MODEL DETAILS

### PHYSICAL MODEL

In this study, the air flow is assumed to be incompressible, Newtonian, and statistically steady with temperature and gravity effects neglected. The flow is governed by the Reynolds-Averaged Navier–Stokes (RANS) formulation for mass and momentum where the turbulence is modeled using the k-$\omega$ SST turbulence model.

### MODELED GEOMETRIES

The extent of the built area (e.g. buildings, structures or topography) that is represented in the numerical domain depends on the influence of the features on the region of interest. According to the Best Practice Guideline (COST Action 732), a building with height H (height of the proposed building is 27.5 m) may have a minimal influence if its distance from the region of interest is greater than 6-10H (we considered 500m which larger then 275m).

The modelled layout and dimensions of the surrounding environment are outlined in the table below (Table 4.1).

| | MODELLED CFD ENVIRONMENT DIMENSIONS | | |
|---|---|---|---|
| | Width | Length | Height |
| Computational Domain | Approx.1200m | Approx.1200m | Approx.160m |

Table 4.1: Modelled Environment Dimensions

A 3D view of the proposed development massing model in the domain is presented in Figure 4.2. Geometries used in this study include two parts:

- The massing model of the proposed Sea Gardens (Phase 2) (colored in orange), which is generated based on the DWG drawings provided by Shankill Property Investments Limited;
- The massing model of the building blocks within 500 m from the development (colored in grey).

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Figure 4.2: 3D View of the Massing Models of the Proposed Sea Gardens (Phase 2) (colored in orange) and Surrounding Building Blocks (colored in white)

### COMPUTATIONAL MESH

The computational mesh used in this report is created using OpenFOAM utilities blockMesh and snappyHexMesh. It is a hybrid mesh containing a structured background grid and an unstructured hexahedron-dominated mesh in the near-wall region. The largest cell has a depth of 5 m, where the smallest has a depth of 0.15 m. The total cell count is approx. 65 million. An isometric view of the geometry captured by the computational mesh is shown in Figure 4.3.

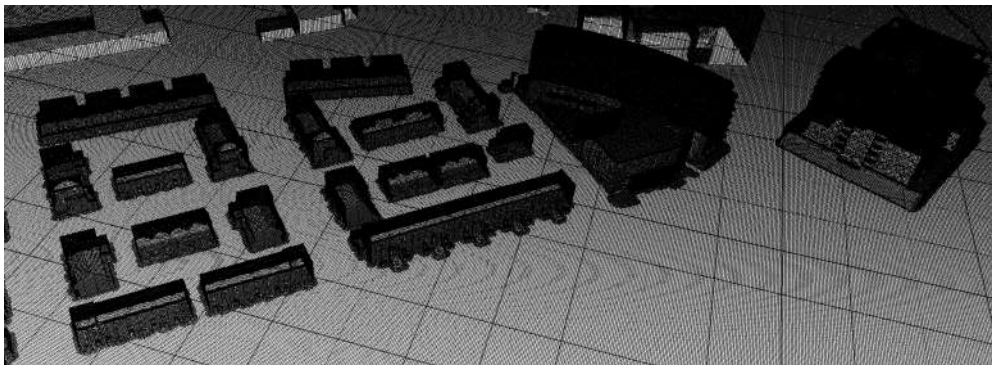

Figure 4.3: Computational Mesh of Sea Gardens (Phase 2)

## BOUNDARY CONDITIONS

For each wind directions, an initial wind velocity was set based on logarithmic wind profile. Surfaces within the model were specified as having 'no slip' condition. This boundary condition, ensures that flow moving parallel to a surface is brought to rest at the point where it meets the surface. All the other domain boundaries are set as "Open Boundaries".

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The wind velocity data provided by the historical data collection and by the local data measuring are used in the formula below for the logarithmic wind profile to specify the wind velocity profile (wind velocity at different heights) to be applied within the CFD model:

$$u_{(z)} = \frac{u^{\star}}{K} \cdot ln(\frac{z+z_0}{z_0}) \tag{4.1}$$

where:

- $u_{(z)}$ = wind speed measured at the reference height $z$
- $z$ = height to measure $u_{(z)}$
- $z_0$ = roughness length selected according to Eurocode
- $u^{\star}$ = friction velocity
- $K$ = Karman constant

## NUMERICAL CONFIGURATIONS

In this study, all simulations employ the SIMPLE algorithm to perform the pressure–velocity coupling (simpleFoam solver in OpenFOAM). All terms in the RANS equations are discretized using the nominally second-order cell-centred finite volume method, where gradient and Laplacian terms are discretized using Gaussian integration with linear interpolation. Convection/advection terms are discretized using a second-order accurate linear-upwind scheme.

Key parameters of the CFD model used in this wind microclimate study are summarised in Table 4.2.

Table 4.2: Key parameters of the CFD model for each wind scenarios

| KEY PARAMETERS OF THE CFD MODEL | |
|---|---|
| Air Density ($\rho$) | 1.2 kg/m$^3$ |
| Turbulence Model | k-$\omega$ SST Model |
| Cell Size | Approx. 0.15 m at the development<br>Approx. 0.3 m in the surroundings<br>5 m elsewhere |
| Background Mesh Ratio | ratio 1:1 |
| Total Mesh Size | Approx. cell count = 65 million |

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# 5. LOCAL WIND CLIMATE

## 5.1 THE EXISTING RECEIVING ENVIRONMENT

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In this chapter, wind impact has been assessed on the existing receiving environment considered the existing buildings and the topography of the site prior of the construction of the proposed development. A statistical analysis of 15 years historical weather wind data has been carried out to assess the most critical wind speeds, directions and frequency of occurrence of the same. The aim of this assessment has been to identify the wind microclimate of the area that may cause critical conditions for pedestrians comfort criteria.

### Site Location And Surrounding Area

Sea Gardens (Phase 2) Development will be situated in Bray. The Existing Environment site is shown in Figure 5.1. The area considered for the existing environment and proposed development assessment comprises a 1km$^2$ area around the Sea Gardens (Phase 2) Development as represented in Figure 5.2.

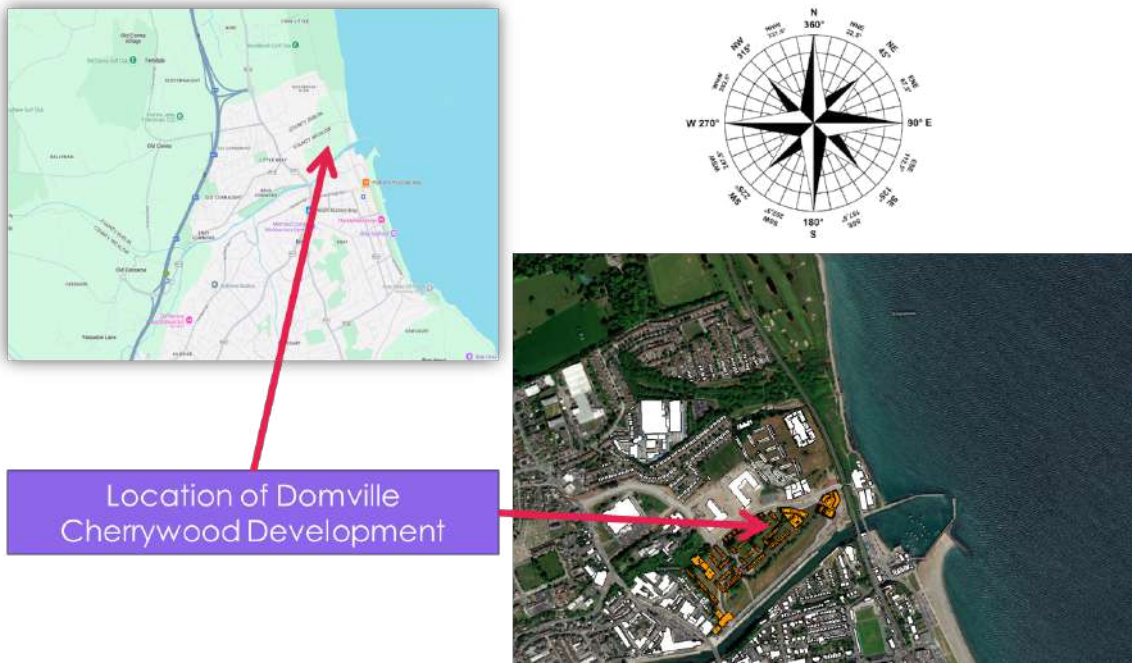


Figure 5.1: Sea Gardens (Phase 2) Development Site Location and Existing Environment

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Figure 5.2: Extents of Analysed Existing Environment Around Sea Gardens (Phase 2) Development

#### Topography And Built In Environment

Figure 5.3: Built-in Environment Around Construction Site at Sea Gardens (Phase 2) Development

Figure 5.3 shows an aerial photograph of the terrain surrounding the construction site at Sea Gardens (Phase 2) Development. The Sea Gardens (Phase 2) Site is located in Bray. Therefore, the area surrounding the site can be characterized as urban environment.

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## 5.2 LOCAL WIND CONDITIONS

This analysis considers the whole development being exposed to the typical wind condition of the site. The building is oriented as shown in the previous sections. The wind profile is built using the annual average of meteorology data collected at Dublin Airport Weather Station. Figure 5.4 shows on the map, the position of Sea Gardens (Phase 2) Development and the position of Dublin Airport.

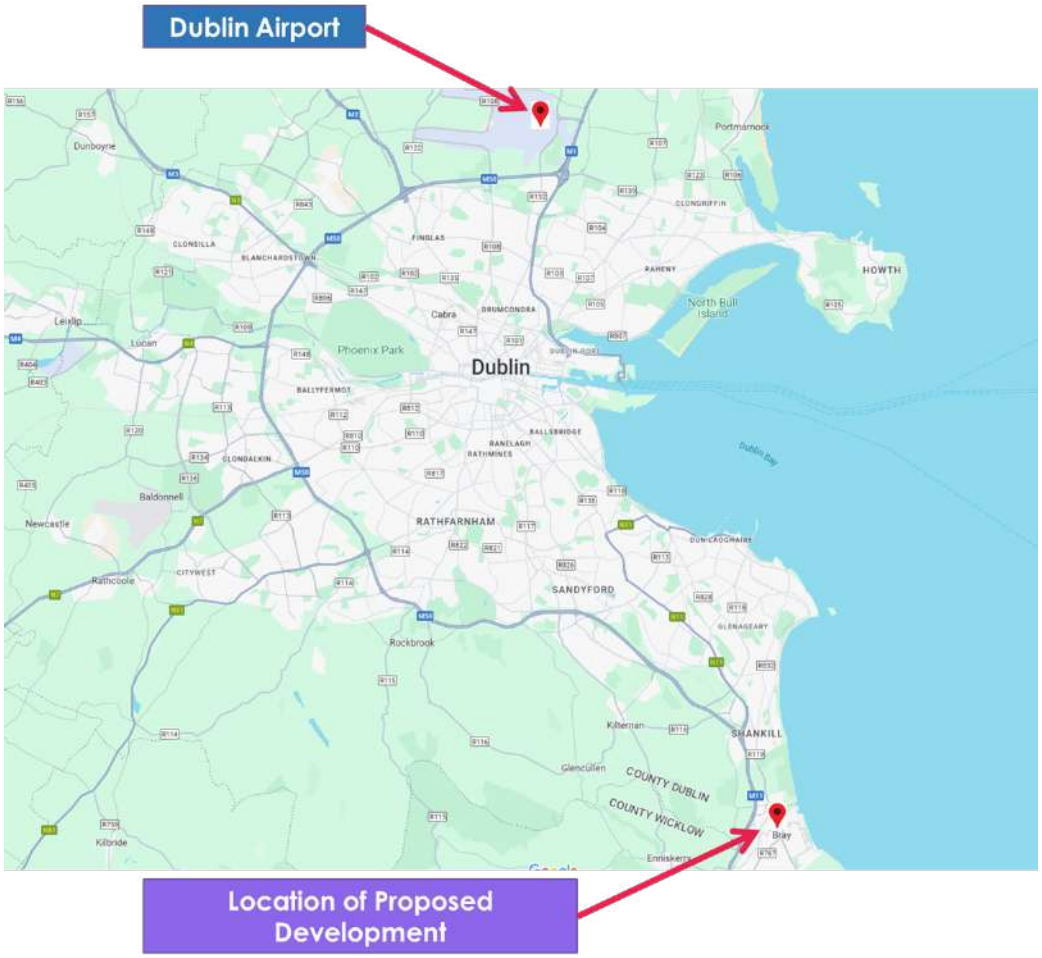


Figure 5.4: Map showing the position of Sea Gardens (Phase 2) Development and Dublin Airport

Regarding the transferability of the available wind climate data, the following considerations have been made:

- *Terrain*: The meteorological station is located on the flat open terrain of the airport, whereas the development site is in an urban area with dense built-in structures

including buildings of more than 10 m height in average and with some buildings even taller.

- *Mean Wind Speeds*: Due to the different terrain environment, the ground-near wind speeds (at pedestrian level) will be lower at the construction site compared to the meteorological station at the airport.

- *Wind Directions*: The landscape around the development site can in principle be characterized as flat terrain. Isolated elevations in the near area of the development should have no influence on the wind speed and wind directions. With respect to the general wind climate no significant influence is expected. Based on the above considerations it can be concluded that the data from the meteorological station at Dublin Airport are applicable for the desktop assessment of the wind comfort at the development site.

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The assessment of the wind comfort conditions at the new development will be based on a discrete set of wind data throughout a year (annual wind statistic) provided by Meteoblue for Dublin airport meteological wind station. In this study, a 12-discrete set of wind direction is used in order to evaluate the probability of exceedance at any given threshold speed. A Weibull probability distribution is used to fit the given wind data into a continuous one for each wind direction. From Weibull distribution function, the probability, P, can be obtained for each wind direction by:

$$P = e^{(-\frac{U}{c})^k}$$

Where c is the scale parameter and k is the shape parameter for a wind speed U.

As stated above, the local wind climate is determined from historical meteorological data recorded at Dublin Airport. The data set analyzed for this assessment is based on the meteorological data associated with the maximum daily wind speeds recorded over a 15-year period between 2008 and 2022 at a weather station at the airport, which is located 10m above ground.

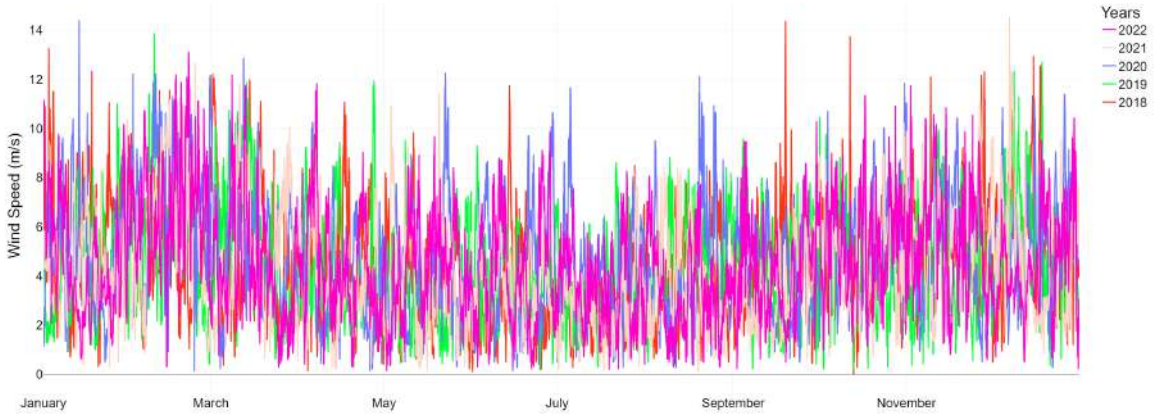


Figure 5.5: Local Wind Conditions - Wind Speed - 2008-2022

Figure 5.6, presenting the wind speed diagram for Dublin, shows the days per month, during which the wind reaches a certain speed. In Figure 5.7, the wind rose for Dublin shows the

percentage of wind blows from the indicated direction. As shown in Figure 5.7, west is the prevailing wind direction. This implies that the largest contribution to the discomfort exceedance probability.

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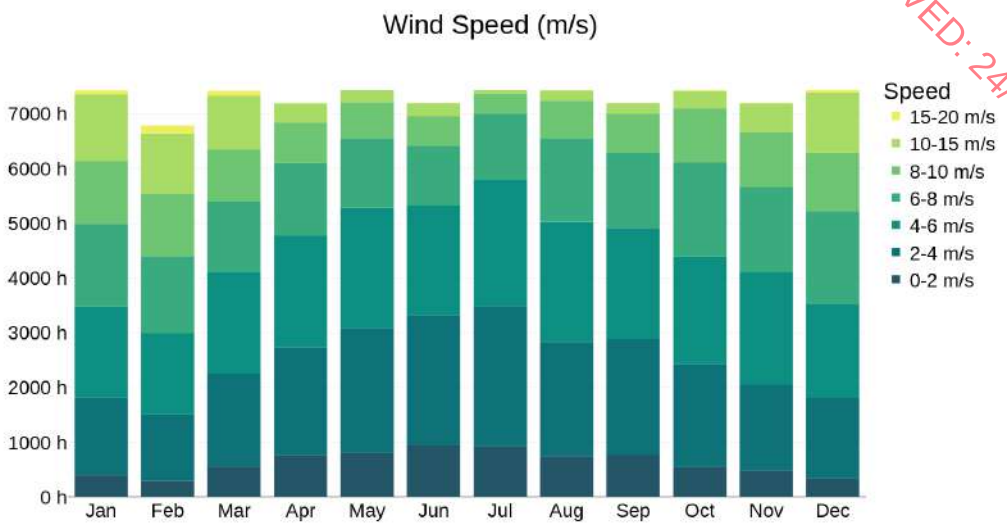


Figure 5.6: Dublin Wind Speed Diagram

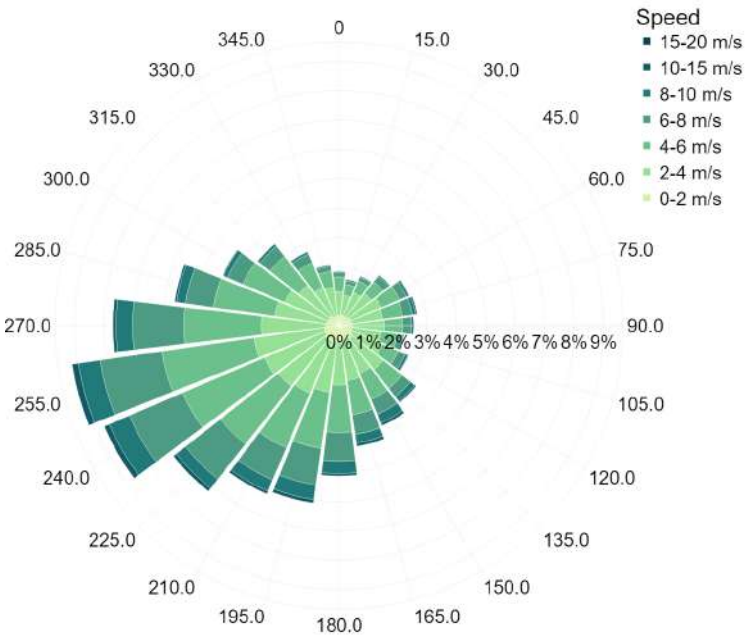


Figure 5.7: Dublin Wind Rose

Statistical analysis of the number of hours and magnitudes of wind is performed in order to indicate the pedestrian comfort and distress analysis as per Lawson Criteria. Each of the

wind directions were interpolated to calculate the probability that a velocity threshold will be exceeded.

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Based on the criterion of occurrence frequency, if the proposed site is exposed to a wind from a specific direction for more than 5 percent of the time, then the microclimate analysis should consider the impact of this wind (accounting for its direction and most frequent speed) on the local microclimate. In addition, seasonal changes were analysed in order to indicate the prevailing wind directions (Fig 5.8).

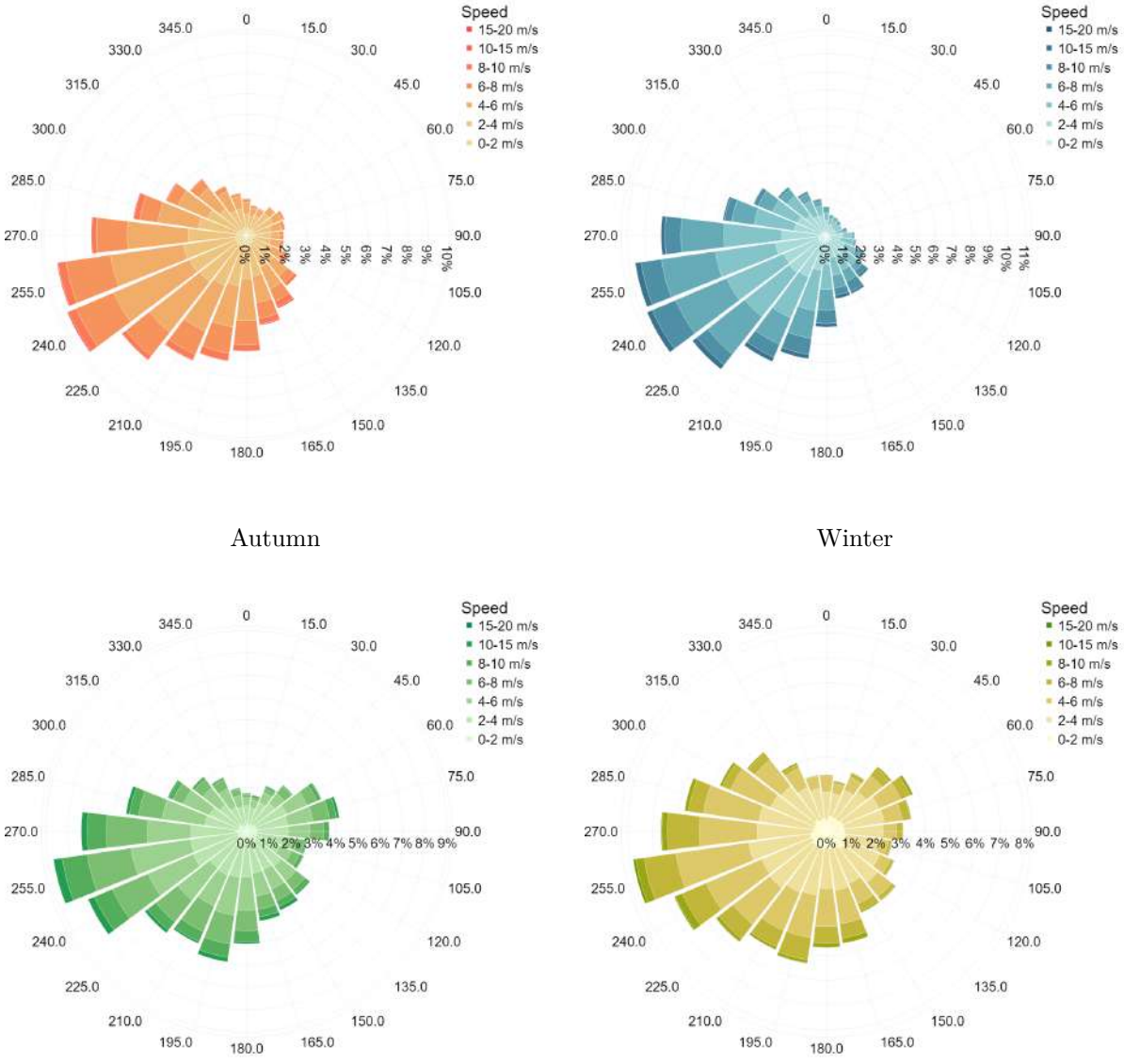


Figure 5.8: Wind speeds and wind directions at different seasons

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# 6. CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

## 6.1 DESCRIPTION OF PROPOSED DEVELOPMENT

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Shankill Property Investments Limited (the applicant) is seeking permission from Wicklow County Council (WCC) for a proposed development on a site of approximately 11 hectares located on the former Bray Golf Course lands in Bray, County Wicklow. This proposed development pertains to Sea Gardens Phase 2, which is part of the Sea Gardens Masterplan (previously known as the Harbour Point Masterplan). The Masterplan has been developed by the applicant in collaboration with a multidisciplinary team.

In summary, the application for Sea Gardens Phase 2 proposes a mixed-use development comprising residential (c. 41,013 sq.m), retail/retail services (c. 8,155 sq.m), and commercial (c. 10,961 sq.m) spaces. The residential component will comprise 341 residential units (94 houses, 106 duplex units, and 141 apartments located in Blocks E and H). In addition, a hotel is proposed in Block I, a public house in Block E, a childcare facility and a medical centre in Block H, and retail/retail services units distributed in Blocks E, G, H and I. The proposed development will also provide private, communal, and public open spaces, along with car and bicycle parking for residents and visitors. An internal road network for vehicles, cyclists, and pedestrians will connect to the existing transport networks. All associated development infrastructure will also be provided, including public lighting, hard and soft landscaping, utilities, drainage, and clearance, demolition and removal of existing structures on site.

The proposed heights are as follows: houses will be 2 storeys, duplex units will be 2-3 storeys, Block E will be 3-15 storeys, Block G will be 1-2 storeys, Block H will be 3-4 storeys and Block I will be 3-7 storeys.

Sea Gardens Phase 2 will complement the permitted Sea Gardens Phase 1A (construction of which is nearing completion) and Phase 1B, as well as the future Phase 3, which will be the subject of a separate application. Phase 3, located adjacent to the River Dargle, is expected to accommodate approximately 362 residential units above a podium, including approximately 14,000 sq.m of retail and other uses. The building heights in Phase 3 will range from 6-9 storeys. This area has been included in the current application for Sea Gardens Phase 2 to allow for temporary use during construction for storing materials and site facilities.

Figure 6.1 shows a view of the buildings in the proposed development (colored in orange) and existing surrounding buildings (in white). Figure 6.2 shows buildings within the cumulative scenario which include the buildings in the proposed development, existing surrounding buildings, and the buildings that are not yet built (colored in cyan).

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Figure 6.1: Buildings in the Proposed Scenario

Figure 6.2: Buildings in the Cumulative Scenario

## 6.2 POTENTIAL RECEPTORS

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Potential receptors for the wind assessment include on-site receptors and off-site receptors.

On-site receptors include:

- All pedestrian circulation routes, building entrances and leisure open areas on the ground. The pedestrian level is considered at 1.5m above ground. The on-site pedestrian-level receptor is highlighted in green as shown in Figure 6.3.

Figure 6.3: Proposed Sea Gardens (Phase 2) Development - Potential Sensitive Receptors on the Ground Level - Pedestrian Activities Area (green color)

Off-site receptors are labeled in Figure 6.4.

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Figure 6.4: Potential Off-Site Receptors on the Ground

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# 7. BASELINE WIND MICROCLIMATE

## 7.1 BASELINE SCENARIO

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The wind microclimate of the baseline scenario is defined by the wind patterns that develop on the site and it's the surroundings (existing buildings and topography) under the local wind conditions relevant for the assessment of the Pedestrian Comfort and Distress.

In this scenario the assessment has considered the impact of wind on the existing area. Results of wind microclimate at pedestrian level (1.5m height - flow speeds) are collected throughout the modelled site. These flow velocities identify if locally, wind speeds at pedestrian-level are accelerated or decelerated in relation to the undisturbed reference wind speed due to the presence of the existing baseline environment.

The impact of these speeds are then combined with their specific frequency of occurrence and presented in the maps that show the area of comfort and distress in accordance with Lawson Criteria, these maps are produced at pedestrian level on the ground and identify the suitability of each areas to its prescribed level of usage and activity.

Figure 7.1: CFD Model of the Baseline Scenario

### 7.1.1 WIND SPEEDS - Pedestrian Level

Results of wind speeds and their circulations at pedestrian level of 1.5m above the development ground are presented in Figures 7.2 to 7.13 in order to assess wind flows at ground floor level of Sea Gardens (Phase 2) Development.

Wind flow speeds are shown to be within tenable conditions. Higher velocity and recirculation effects are found in the existing site.

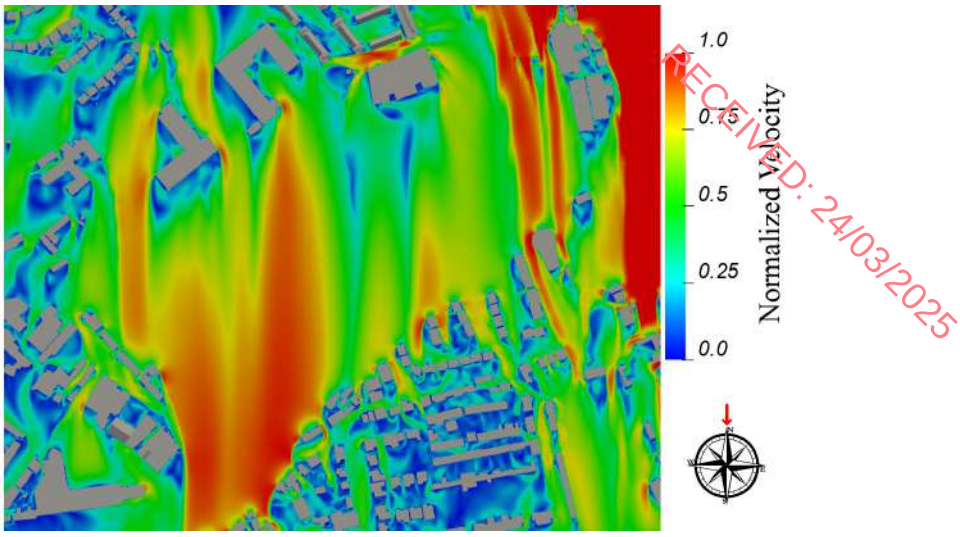


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Figure 7.2: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 0°

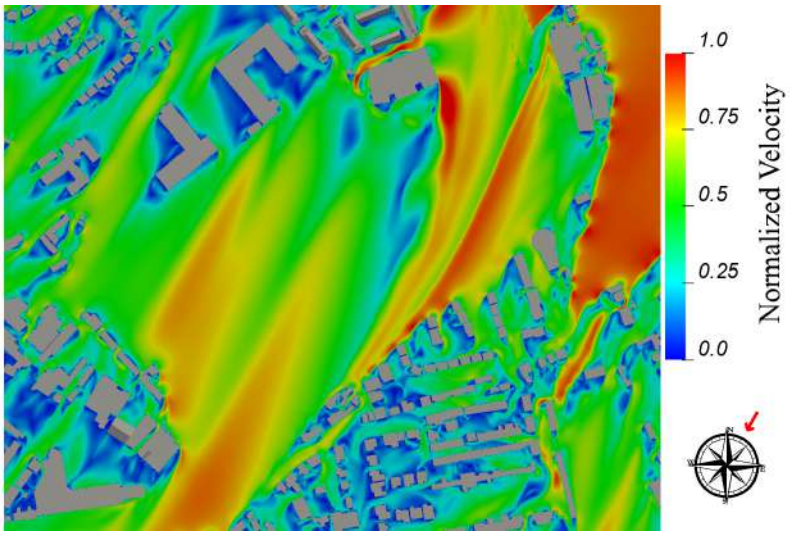


Figure 7.3: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 30°

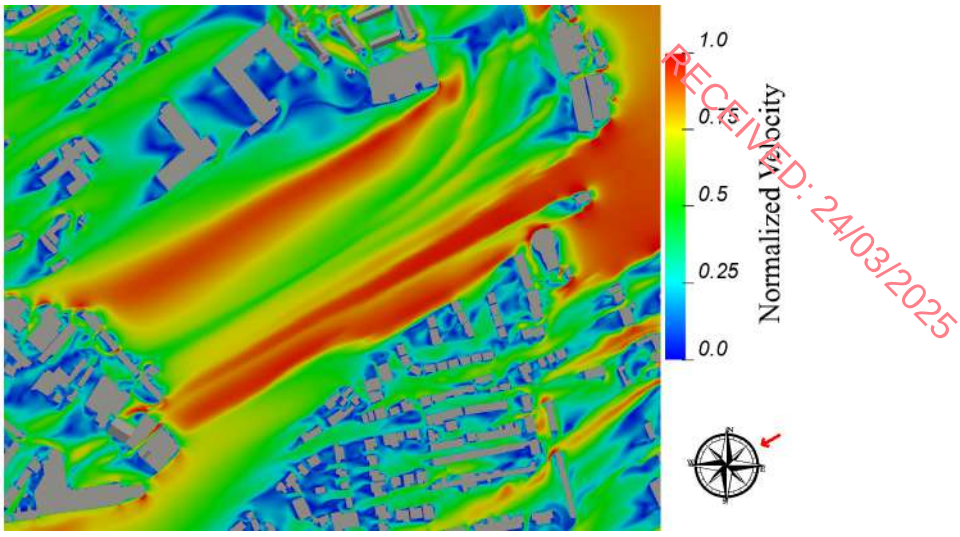


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Figure 7.4: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 60°

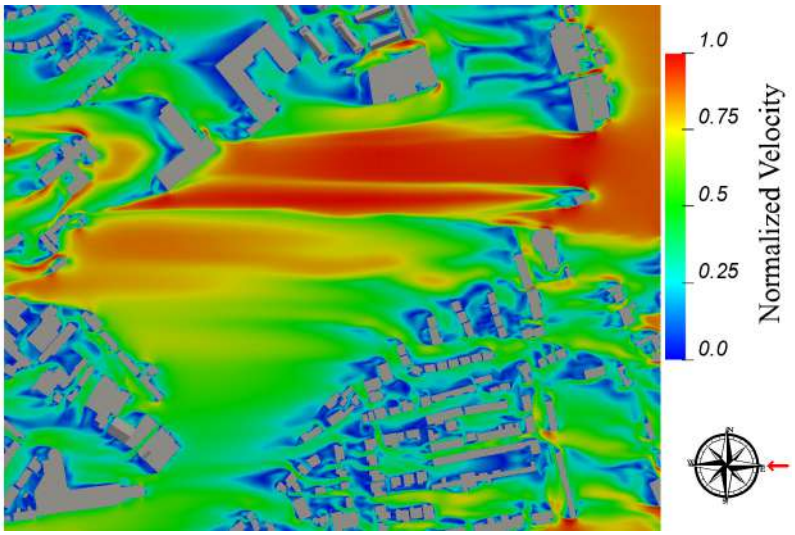


Figure 7.5: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 90°

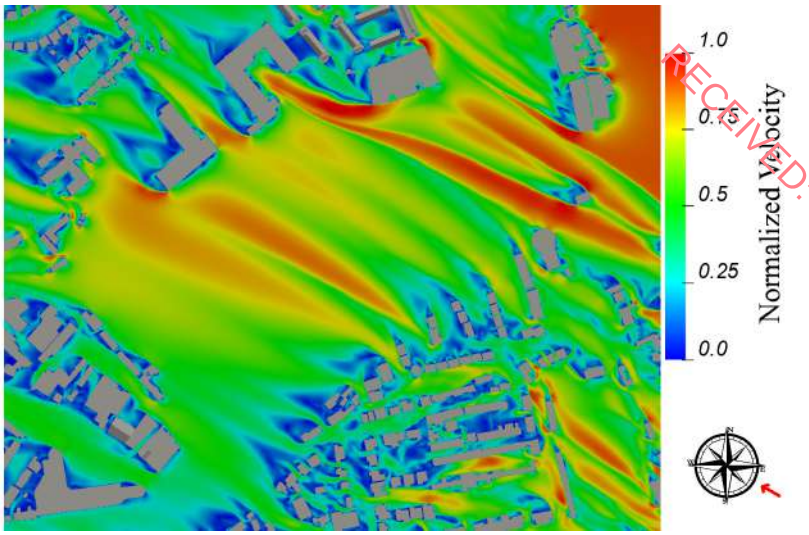


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Figure 7.6: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 120°

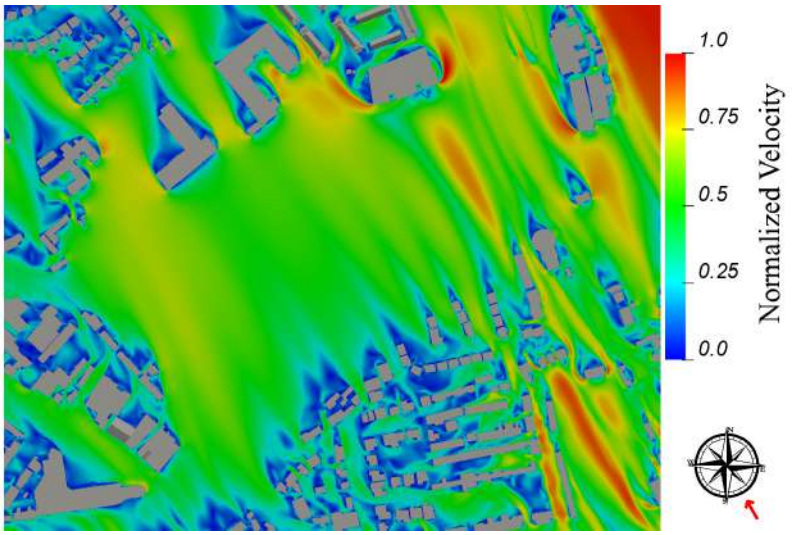


Figure 7.7: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 150°

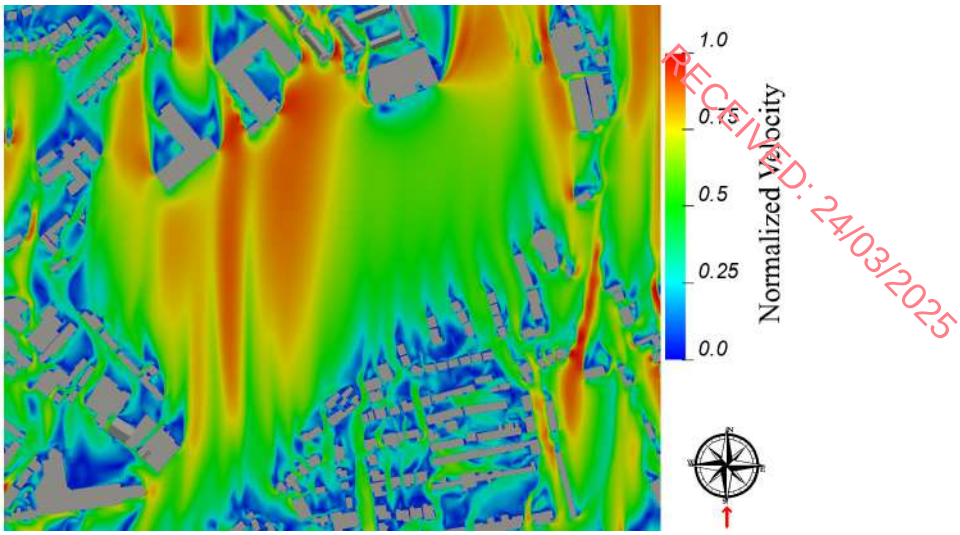


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Figure 7.8: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 180°

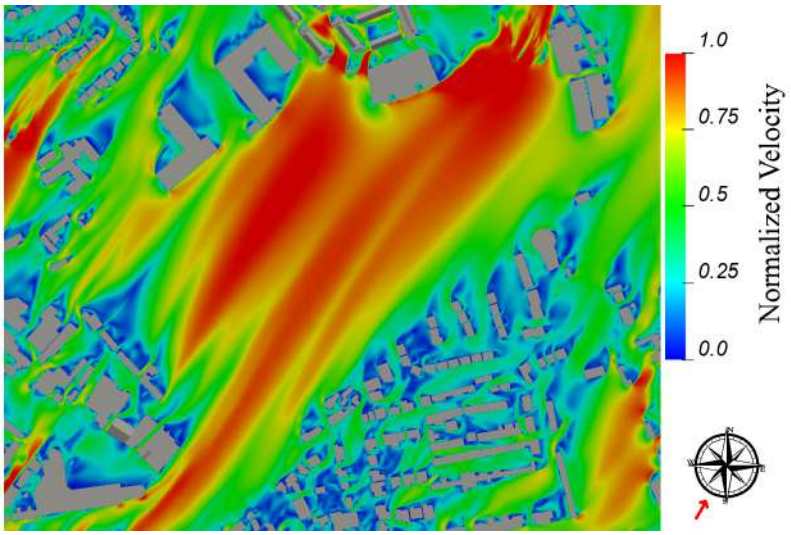


Figure 7.9: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 210°

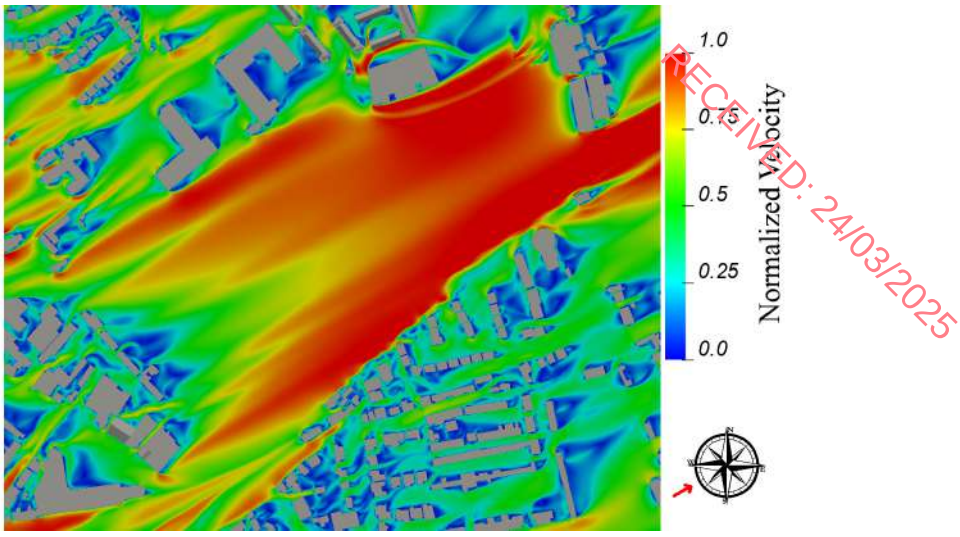


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Figure 7.10: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 240°

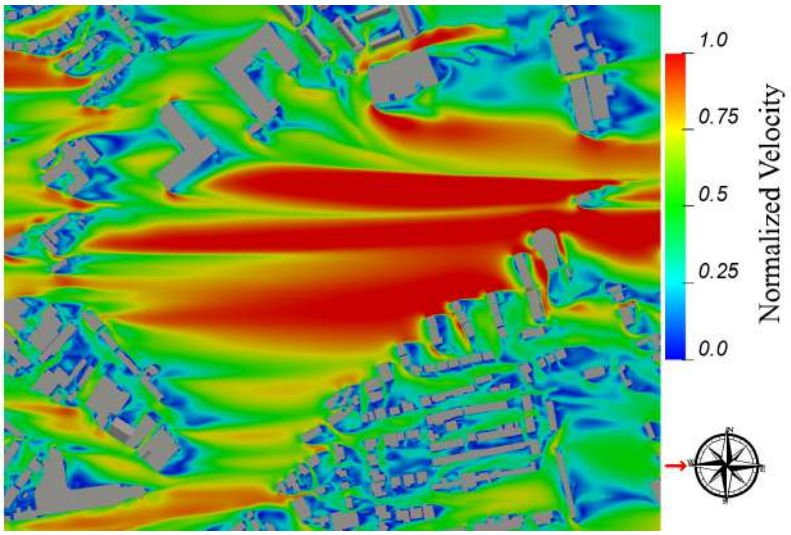


Figure 7.11: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 270°

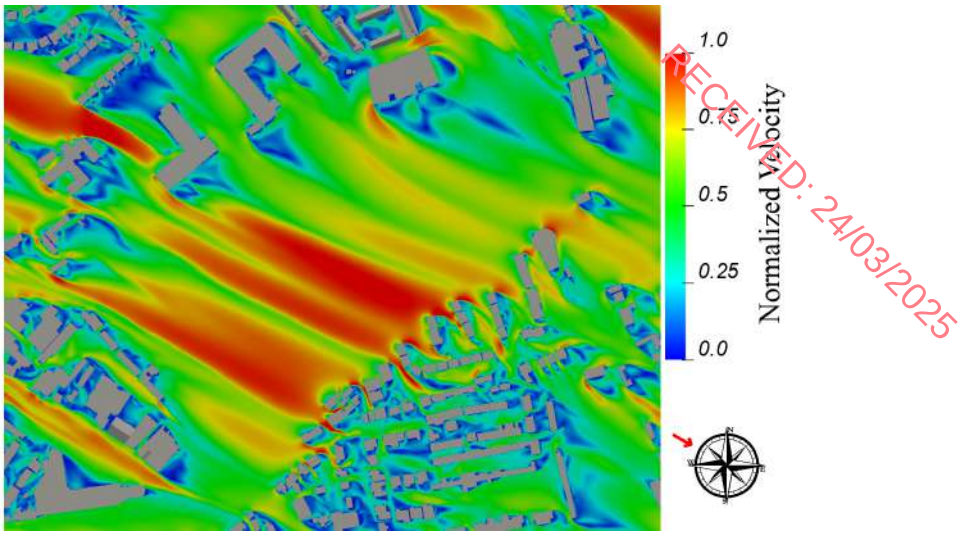


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Figure 7.12: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 300°

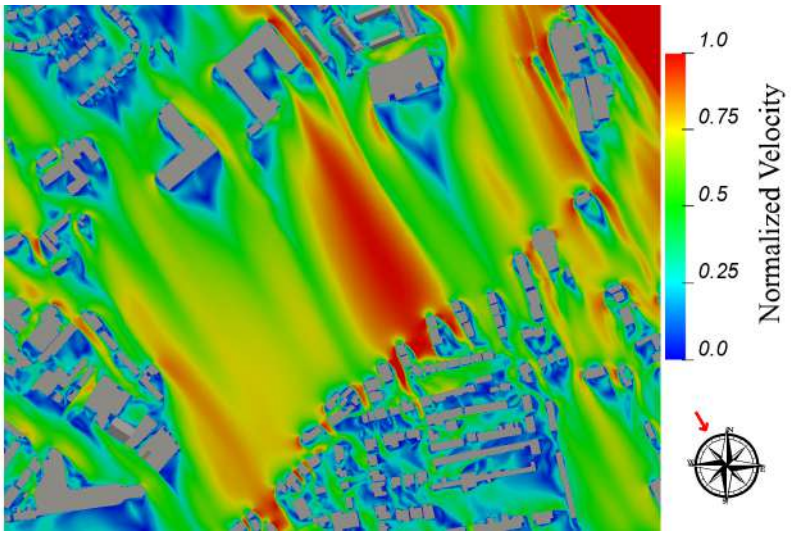


Figure 7.13: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 330°

### 7.1.2 BASELINE WIND MICROCLIMATE - Lawson Criteria

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The wind flow results obtained simulating the different direction and wind speeds, are combined with wind frequencies of occurrence to obtain comfort ratings at pedestrian level in all areas included within the model. The comparison of comfort ratings with intended pedestrian activities is shown in the Lawson Comfort and Distress Map that follows. The comfort/distress conditions are presented using a colour coded diagram formulated in accordance with the Lawson Criteria.

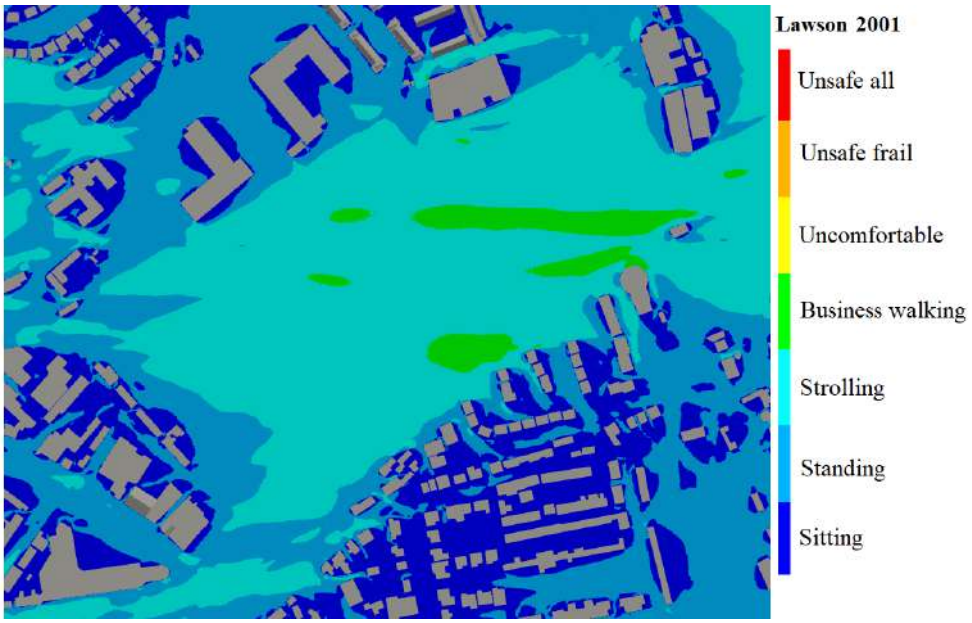


Figure 7.14: Ground Floor - Lawson Discomfort Map - Top View

From the simulation results the following observations are pointed out:

- The assessment of the baseline scenario has shown that no area is unsafe and no conditions of distress are created in the existing environment under the local wind climate.

- The site is usable for walking, strolling and standing, the roads in the surrounding are usable for their intended scope.

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# 8. IMPACT OF THE PROPOSED DEVELOPMENT

This section assessed the potential impact of the proposed development on the already existing environment, and the suitability of the proposed development to create and maintain a suitable and comfortable environment for different pedestrian activities.

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## 8.1 CONSTRUCTION PHASE

As the finalization of the development proceeds, the wind setting at the site would progressively conform to those of the completed development. Due to the fact that windier conditions are acceptable within a construction area (not accessible to the public), and the proposed development would not be the reason for critical wind conditions on-Site (and are slightly calmer when the development is in site), the impacts evaluated on-Site are considered to be insignificant. Thus, the predicted impacts during construction phase are identified as not significant or negligible.

In summary, as construction of the Sea Gardens (Phase 2) Development progresses, the wind conditions at the site would gradually adjust to those of the completed development. During the construction phase, predicted impacts are classified as negligible.

## 8.2 OPERATIONAL PHASE

This section shows CFD results of wind microclimate assessment carried out considering the "Operational Phase" of Sea Gardens (Phase 2) Development. In this case the assessment has considered the impact of wind on the existing area including the proposed Sea Gardens (Phase 2) Development. Wind simulations have been carried out on all the various directions for which the development could show critical areas in terms of pedestrian comfort and safety.

Results of wind microclimate at pedestrian level (1.5m height - flow speeds) are collected throughout the modelled site (potential receptors). These flow velocities identify if locally, wind speeds at pedestrian-level are accelerated or decelerated in relation to the undisturbed reference wind speed due to the presence of the existing baseline environment.

The impact of these speeds are then combined with their specific frequency of occurrence and presented in the maps that show the area of comfort and distress in accordance with Lawson Criteria, these maps are produced at pedestrian level on the ground identify the suitability of each areas to its prescribed level of usage and activity.

Figure 8.1: CFD Model of Proposed Scenario

### 8.2.1 WIND SPEEDS - Pedestrian Level

Results of wind speeds and their circulations at pedestrian level of 1.5m above the development ground are presented in Figures 8.2 to 8.13 in order to assess wind flows at ground floor level of Sea Gardens (Phase 2) Development.

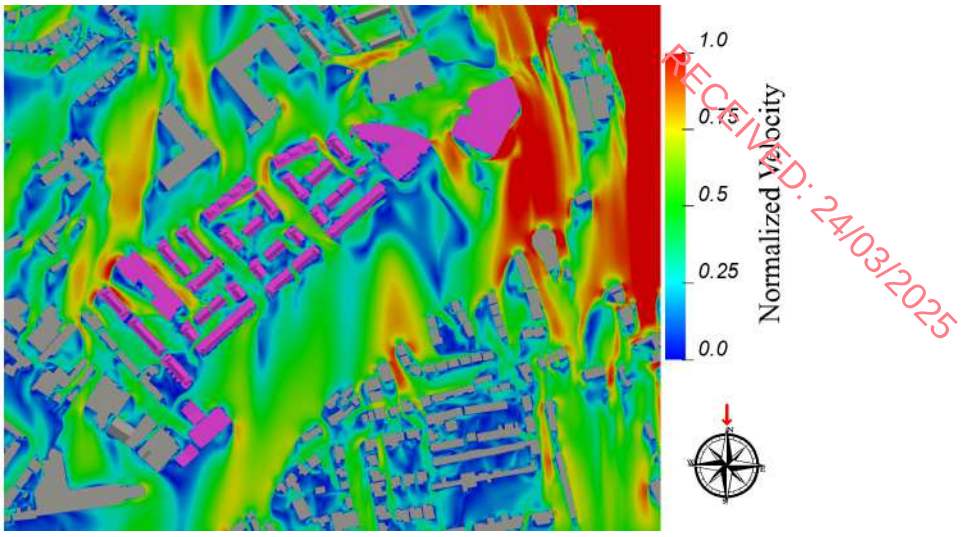


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Figure 8.2: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 0°

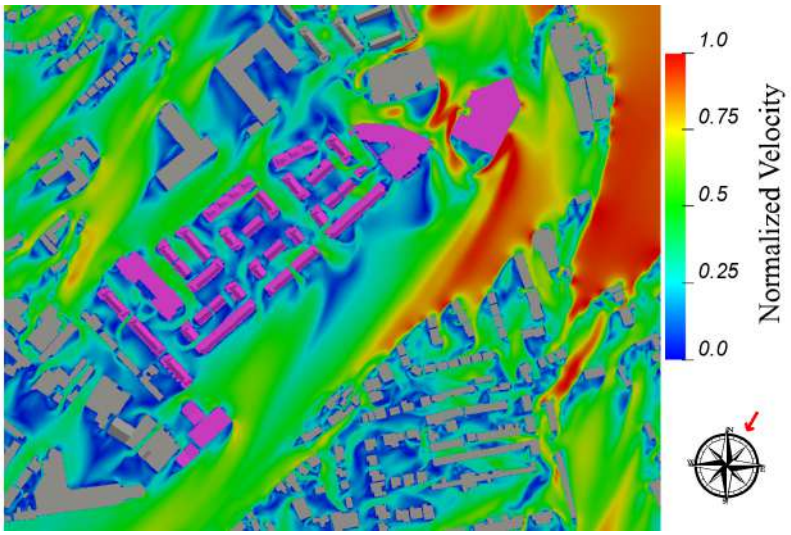


Figure 8.3: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 30°

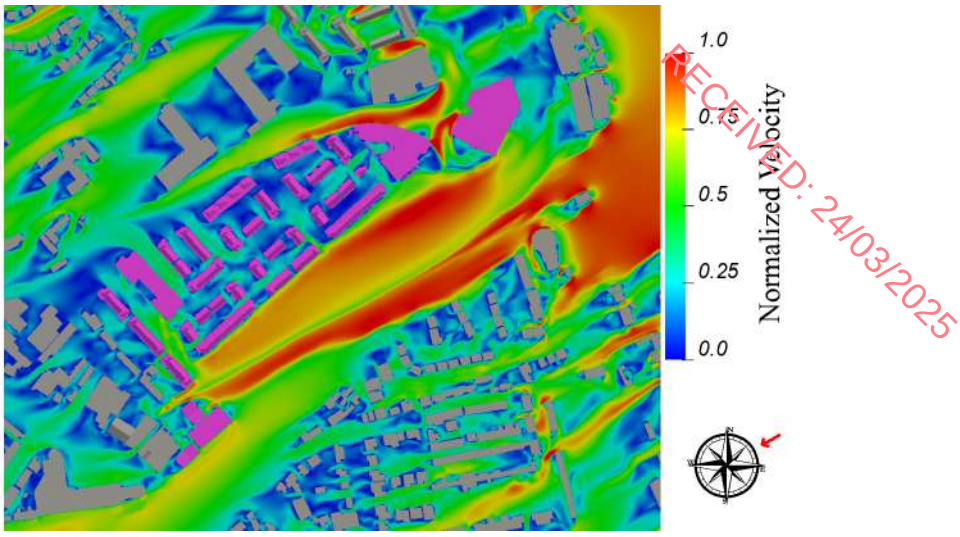


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Figure 8.4: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 60°

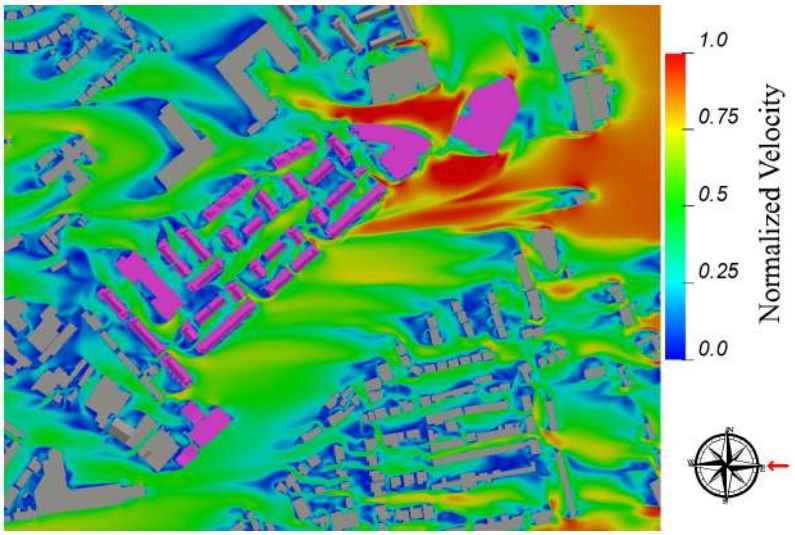


Figure 8.5: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 90°

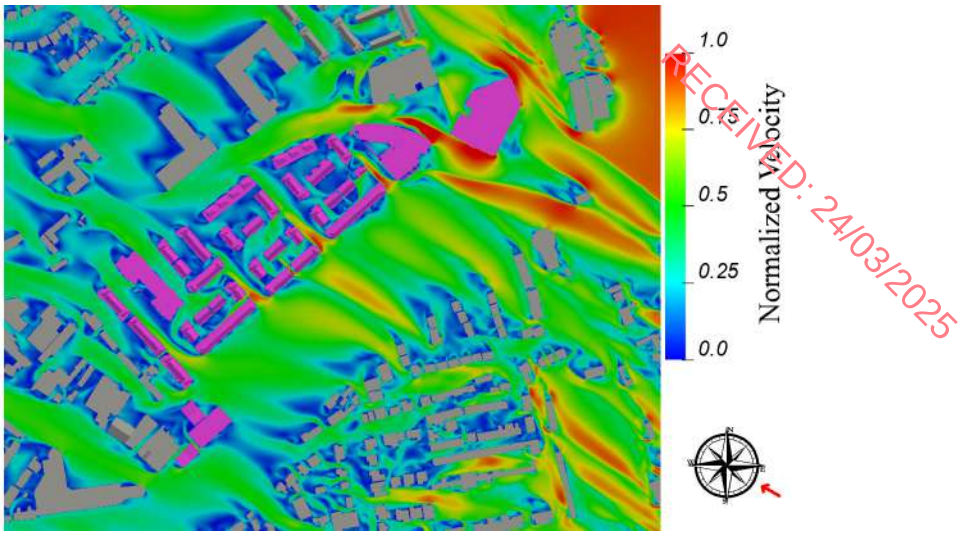


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Figure 8.6: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 120°

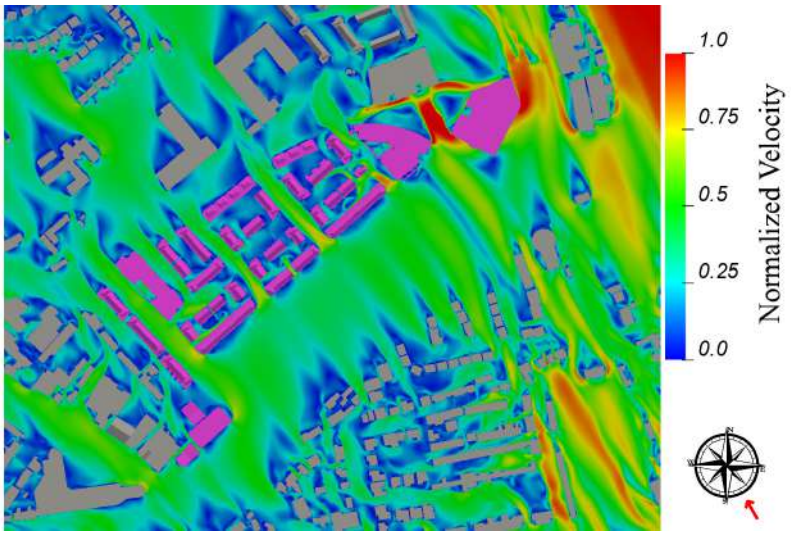


Figure 8.7: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 150°

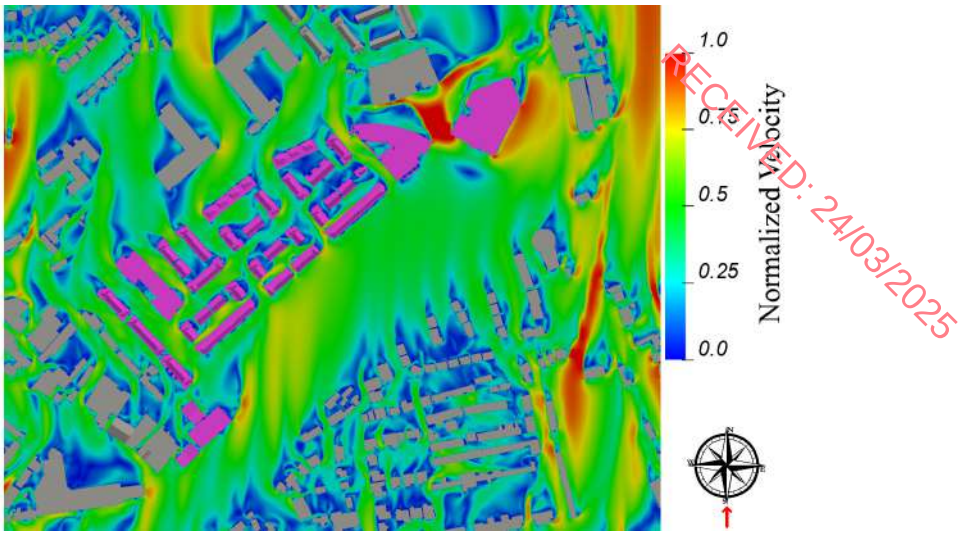


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Figure 8.8: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 180°

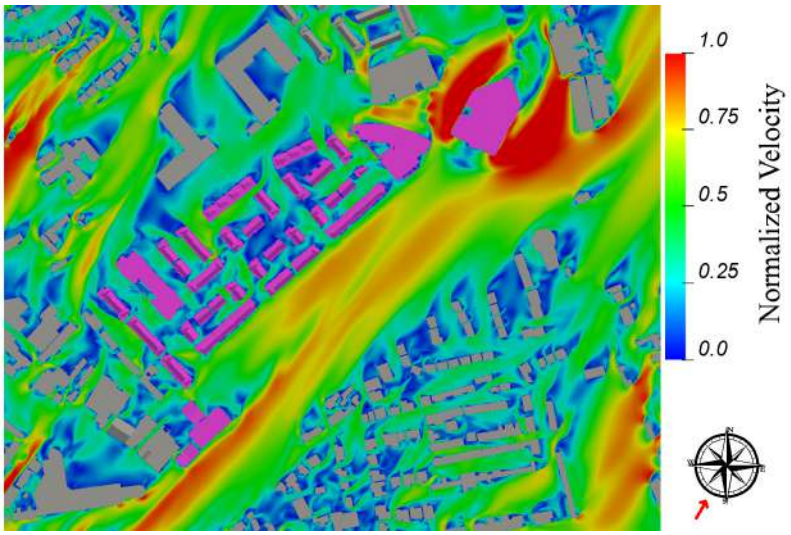


Figure 8.9: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 210°

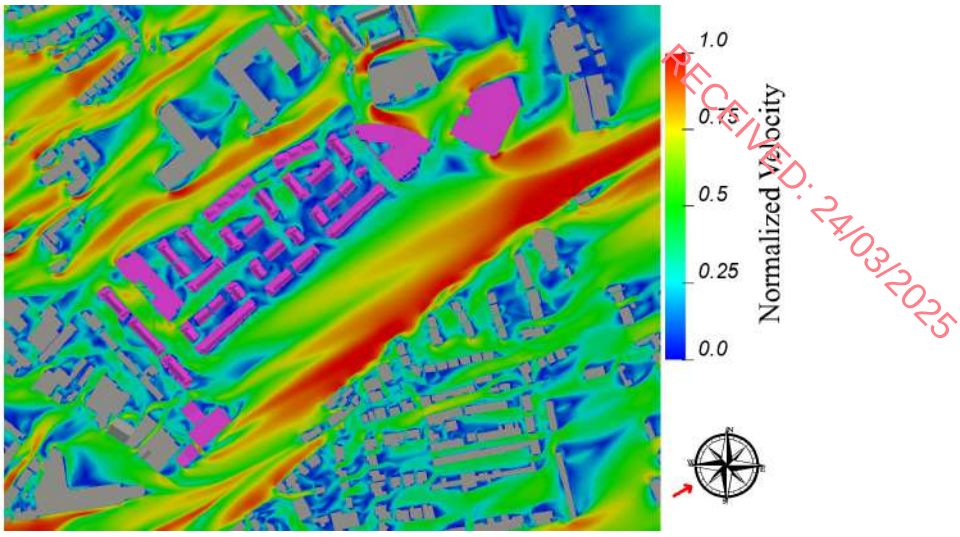


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Figure 8.10: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 240°

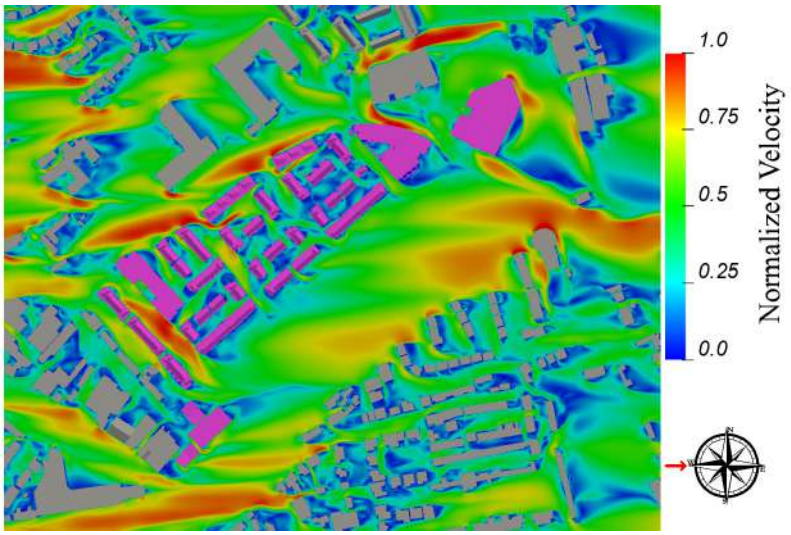


Figure 8.11: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 270°

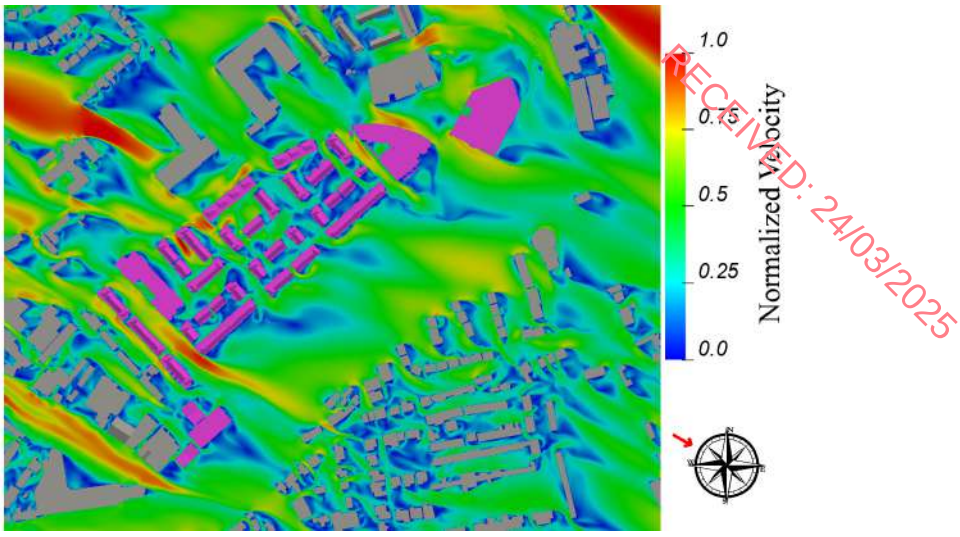


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Figure 8.12: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 300°

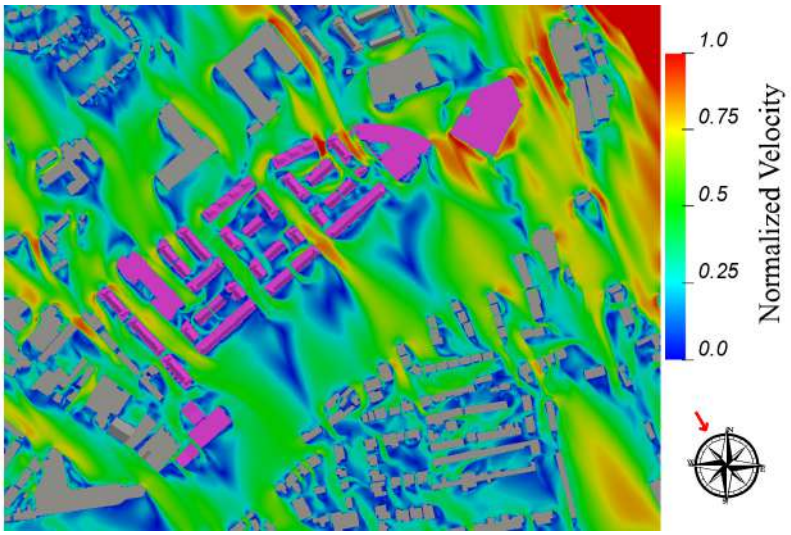


Figure 8.13: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 330°

### 8.2.2 PROPOSED DEVELOPMENT WIND MICROCLIMATE - Lawson Criteria

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The wind flow results obtained simulating the different direction and wind speeds, are combined with wind frequencies of occurrence to obtain comfort ratings at pedestrian level in all areas included within the model. The comparison of comfort ratings with intended pedestrian activities is shown in the Lawson Comfort and Distress Map that follows.

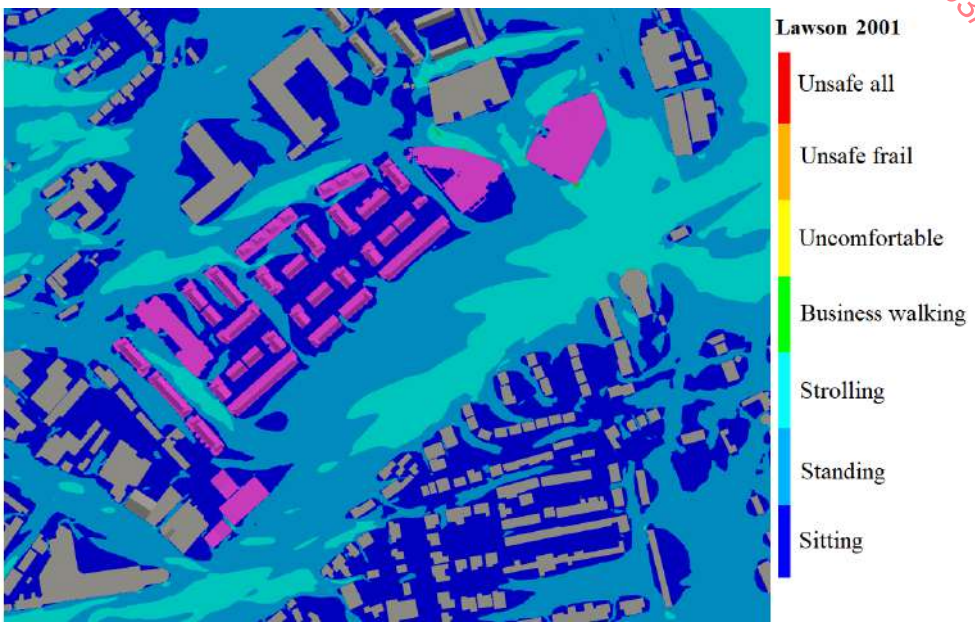
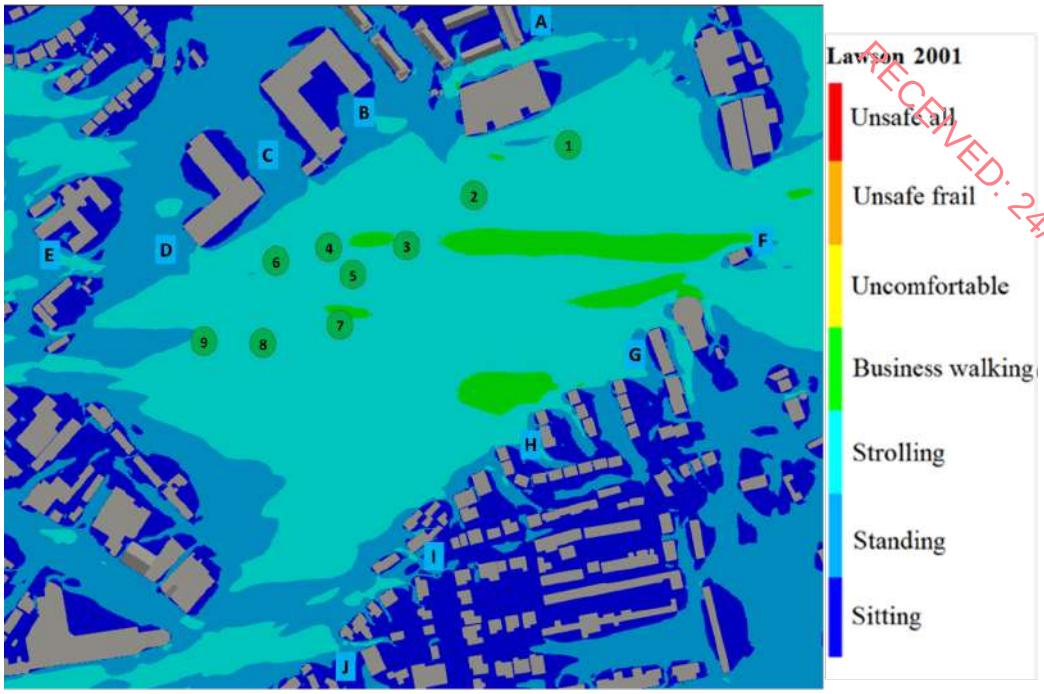



Figure 8.14: Ground Floor - Lawson Discomfort Map - Top View

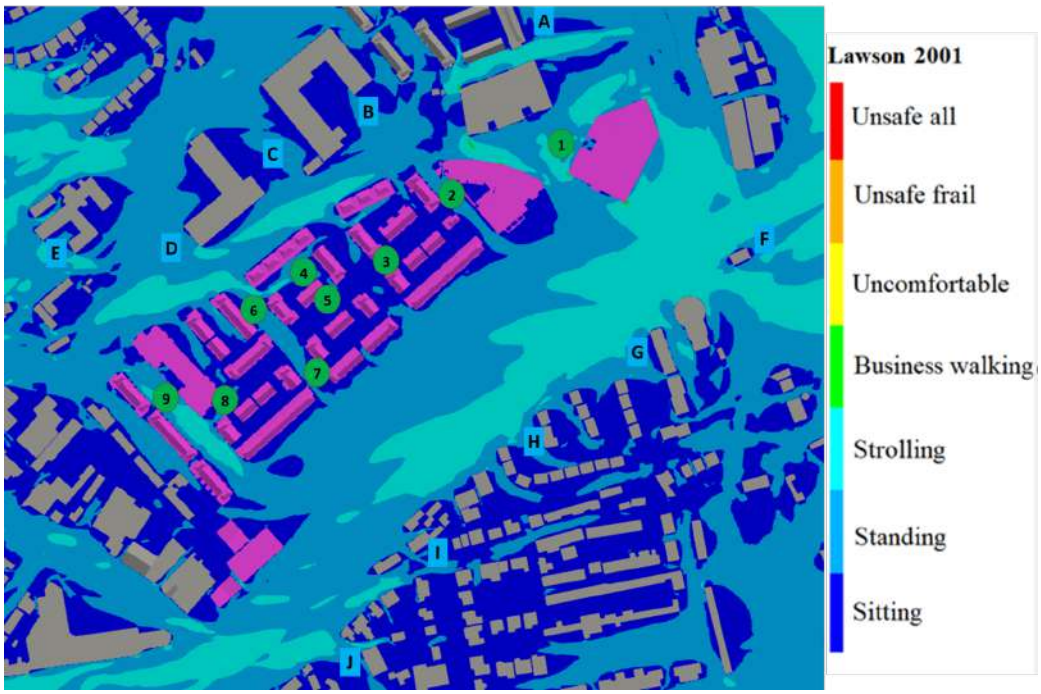
In summary, the following conclusions can be made observing the results of the wind microclimate analysis and comparing the results obtained, under the same wind conditions for the baseline scenario versus the proposed development scenario:

- The assessment of the proposed scenario has shown that no area is unsafe, and no conditions of distress are created by the proposed development.
- All the roads proposed can be used for their intended scope.
- The wind microclimate of the proposed development is comfortable and usable for pedestrians.
- The assessment of the proposed scenario has shown that the proposed development meets the Lawson Comfort Criteria where no area is unsafe, and no conditions of distress are created by the proposed development. All the ground amenities proposed can be used for their intended scope. The wind microclimate of the proposed development is comfortable and usable for pedestrians.

As a result of the proposed development construction, the wind on the surrounding urban context remains suitable for the intended use when compared with the baseline situation.




Baseline Scenario




Proposed Development Scenario

Figure 8.15: Comparison Wind Microclimate Conditions (Lawson Comfort/Distress Map)

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Table 8.1: Significance Impact of the Proposed Development Versus Baseline Conditions for Comfort - On Site Receptors

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| On-Site Potential Receptors | Baseline Conditions | Proposed Development Conditions | Impact Significance |
|---|---|---|---|
| On-site receptor 1 | Suitable for Strolling/Standing | Suitable for Strolling/Standing (Safe/No distress) | Negligible |
| On-site receptor 2 | Suitable for Strolling/Standing | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 3 | Suitable for Walking/Strolling/ Standing | Suitable for Sitting/Standing (Safe/No distress) | Improved/ Negligible |
| On-site receptor 4 | Suitable for Strolling/Standing | Suitable for Sitting/Standing (Safe/No distress) | Improved/ Negligible |
| On-site receptor 5 | Suitable for Strolling/Standing | Suitable for Sitting/Standing (Safe/No distress) | Improved/ Negligible |
| On-site receptor 6 | Suitable for Strolling/Standing | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 7 | Suitable for Walking/Strolling/ Standing | Suitable for Sitting/Standing (Safe/No distress) | Improved/ Negligible |
| On-site receptor 8 | Suitable for Strolling/Standing | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 9 | Suitable for Strolling/Standing | Suitable for the intended use (Safe/No distress) | Negligible |

Table 8.2: Significance Impact of the Proposed Development Versus Baseline Conditions for Comfort - Off Site Receptros

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| Off-Site Potential Receptors | Baseline Conditions | Proposed Development Conditions | Impact Significance |
|---|---|---|---|
| Off-site receptor A | Suitable for Standing/Strolling | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor B | Suitable for Standing/Strolling | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor C | Suitable for Standing/Strolling | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor D | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor E | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor F | Suitable for Walking/Sitting/ Standing | Suitable for Sitting/Standing (Safe/No distress) | Negligible |
| Off-site receptor G | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor H | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor I | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |
| Off-site receptor J | Suitable for Sitting/Standing | Condition remains the same as in the baseline condition (Safe/No distress) | Negligible |

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# 9. CUMULATIVE IMPACT

This section assesses the impact of buildings that have been granted planning permission but not yet built on the proposed development as well as the suitability of these cumulative buildings to create and maintain a suitable and comfortable environment for various pedestrian activities.

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## 9.1 OPERATIONAL PHASE

This section shows CFD results of wind microclimate assessment carried out considering the "Operational Phase" of Sea Gardens (Phase 2) Development. In this case the assessment has considered the impact of wind on the existing area including the proposed Sea Gardens (Phase 2) Development and the cumulative buildings. Wind simulations have been carried out on all the various directions for which the development could show critical areas in terms of pedestrian comfort and safety.

Results of wind microclimate at pedestrian level (1.5m height - flow speeds) are collected throughout the modelled site. These flow velocities identify if locally, wind speeds at pedestrian-level are accelerated or decelerated in relation to the undisturbed reference wind speed due to the presence of the existing baseline environment and permitted buildings (but not built yet).

The impact of these speeds are then combined with their specific frequency of occurrence and presented in the maps that show the area of comfort and distress in accordance with Lawson Criteria, these maps are produced at pedestrian level on the ground and identify the suitability of each areas to its prescribed level of usage and activity.

Figure 9.1: A 3D View of the Proposed Development Buildings (Colored in Orange) and the Cumulative Buildings (Colored in Blue)

### 9.1.1 WIND SPEEDS - Pedestrian Level

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Results of wind speeds and their circulations at pedestrian level of 1.5m above the ground are presented in Figures 9.2 to 9.13 in order to assess wind flows at ground floor level of Sea Gardens (Phase 2) Development.

Wind flow speeds are shown to be within tenable conditions.

It can be concluded that the wind speeds do not attain critical levels around the development.

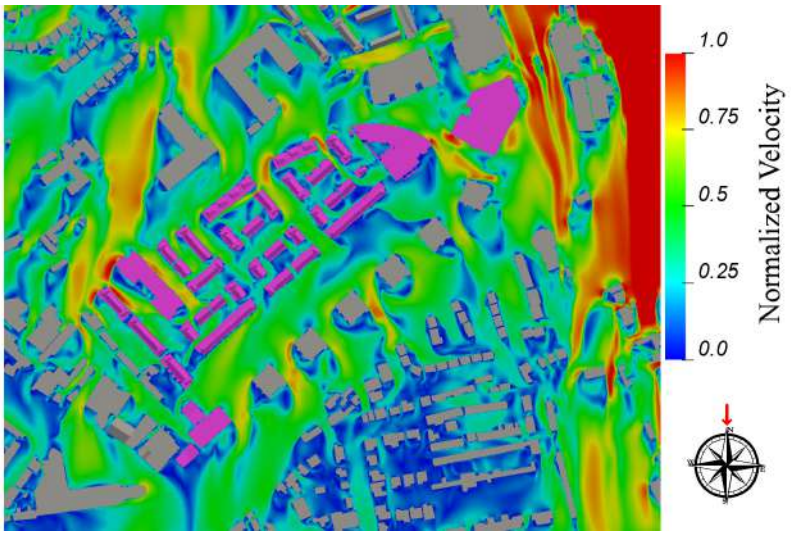


Figure 9.2: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 0°

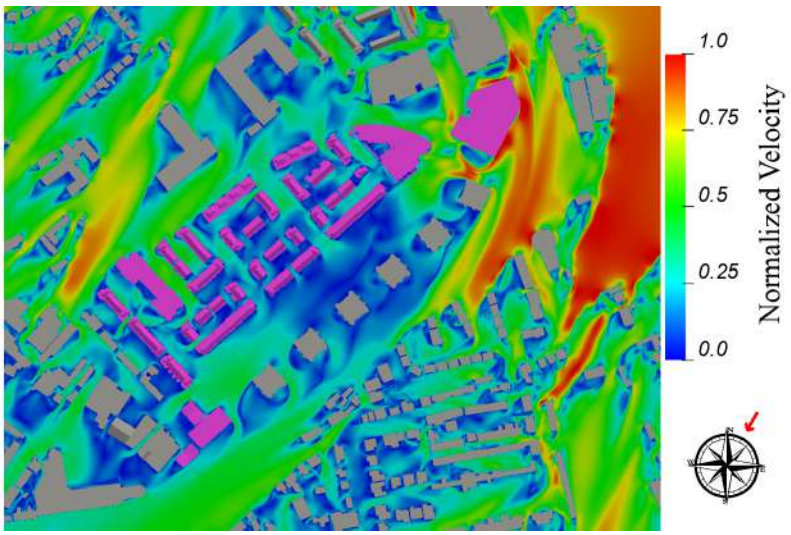


Figure 9.3: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 30°

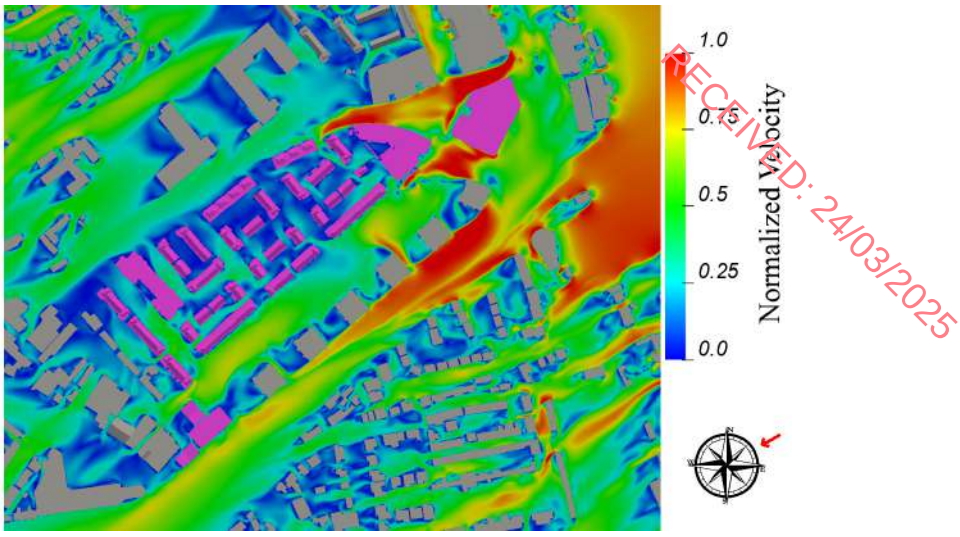


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Figure 9.4: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 60°

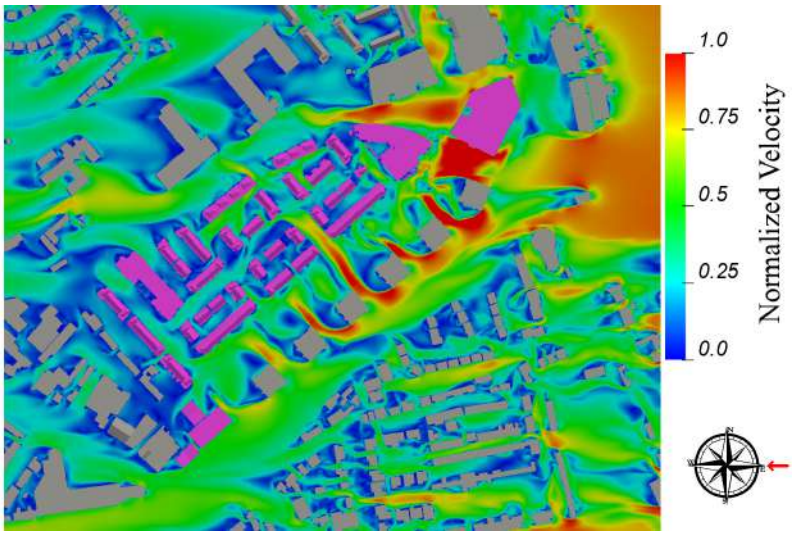


Figure 9.5: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 90°

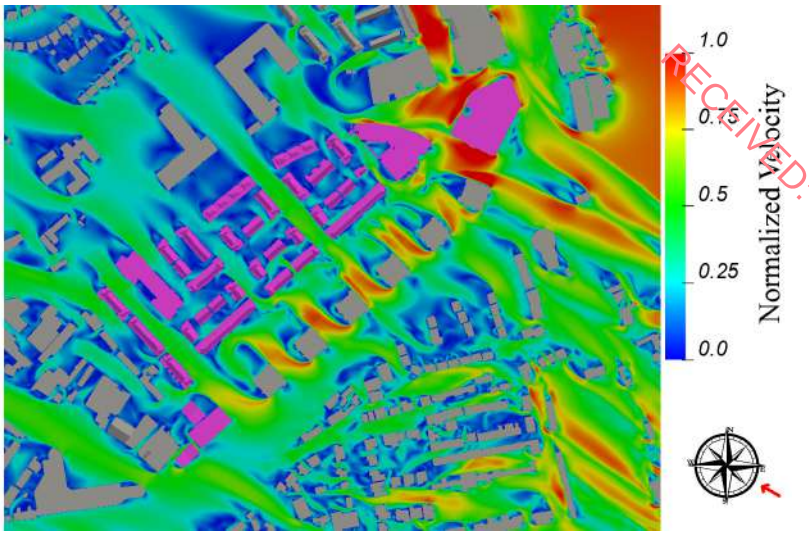


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Figure 9.6: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 120°

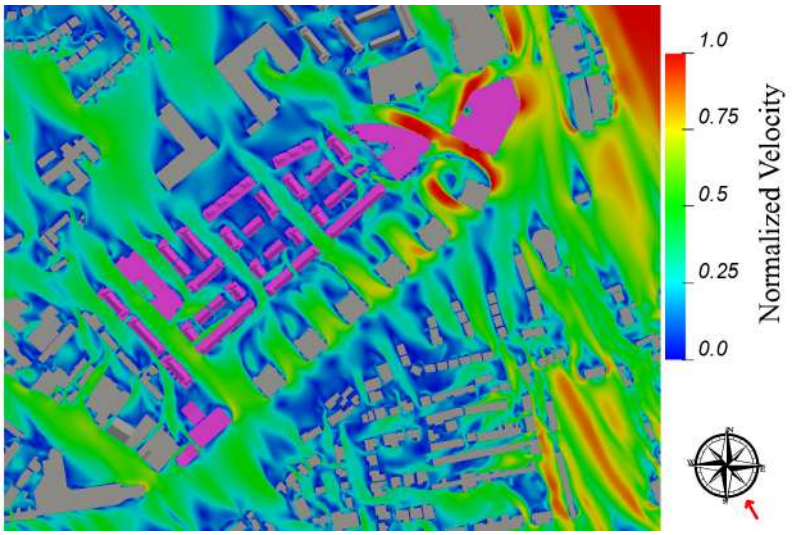


Figure 9.7: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 150°

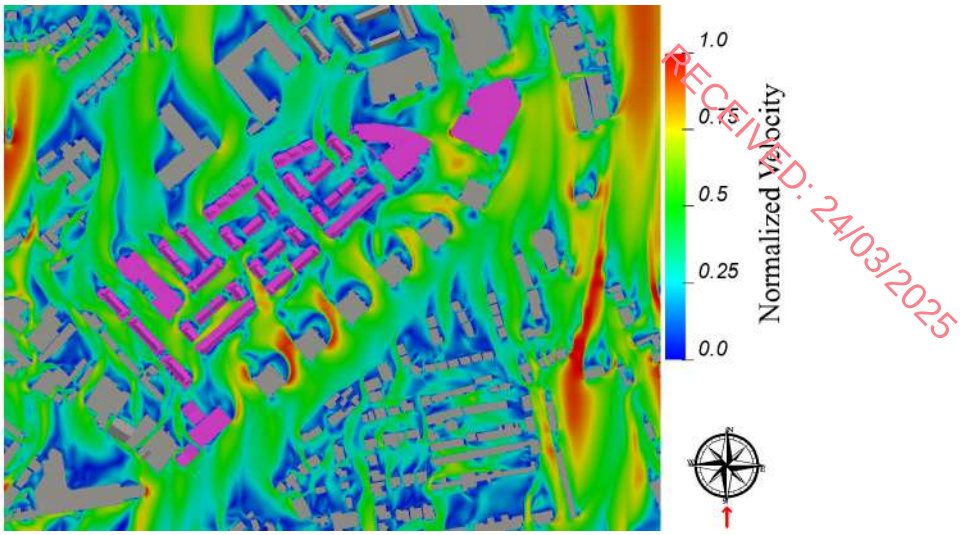


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Figure 9.8: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 180°

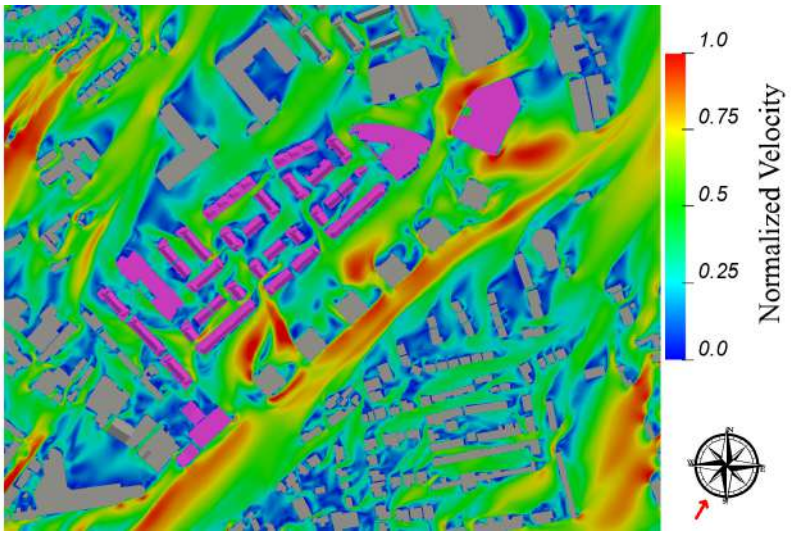


Figure 9.9: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 210°

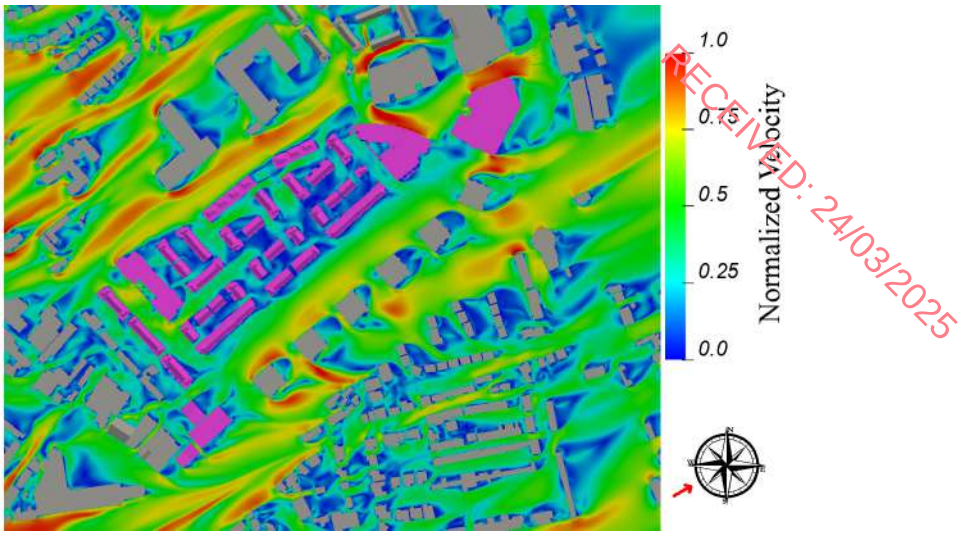


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Figure 9.10: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 240°

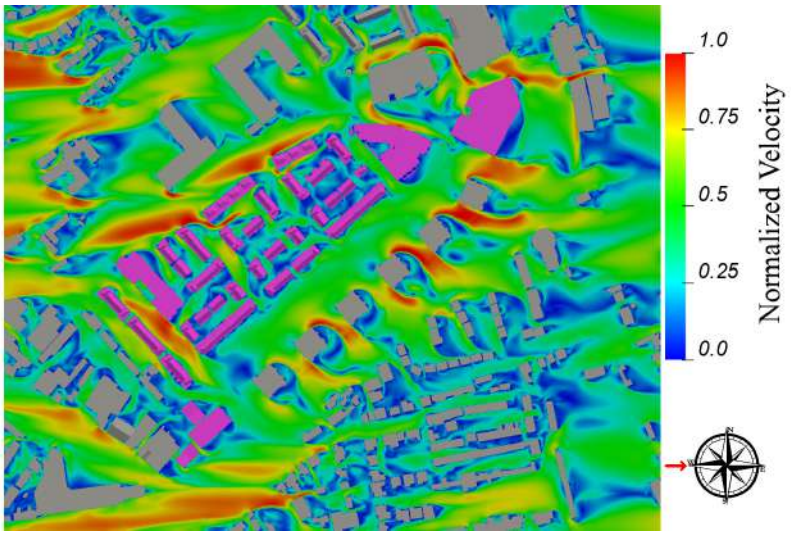


Figure 9.11: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 270°

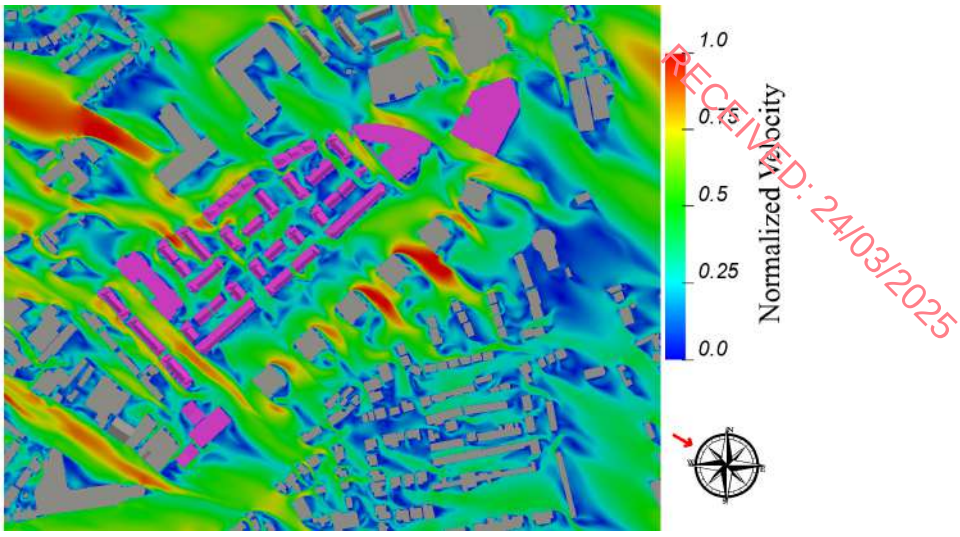


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Figure 9.12: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 300°

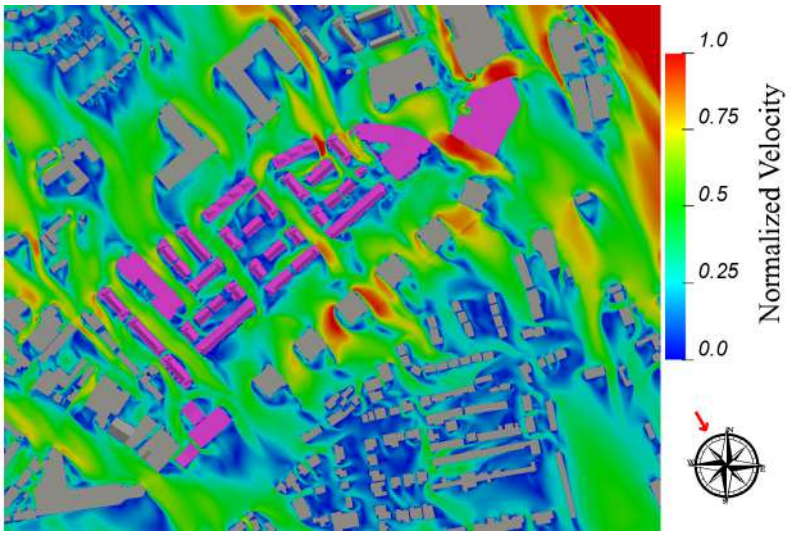


Figure 9.13: Ground Floor Level - Flow Velocity Results at Z=1.5m above the ground - Wind Direction: 330°

### 9.1.2 CUMULATIVE IMPACT - Lawson Criteria

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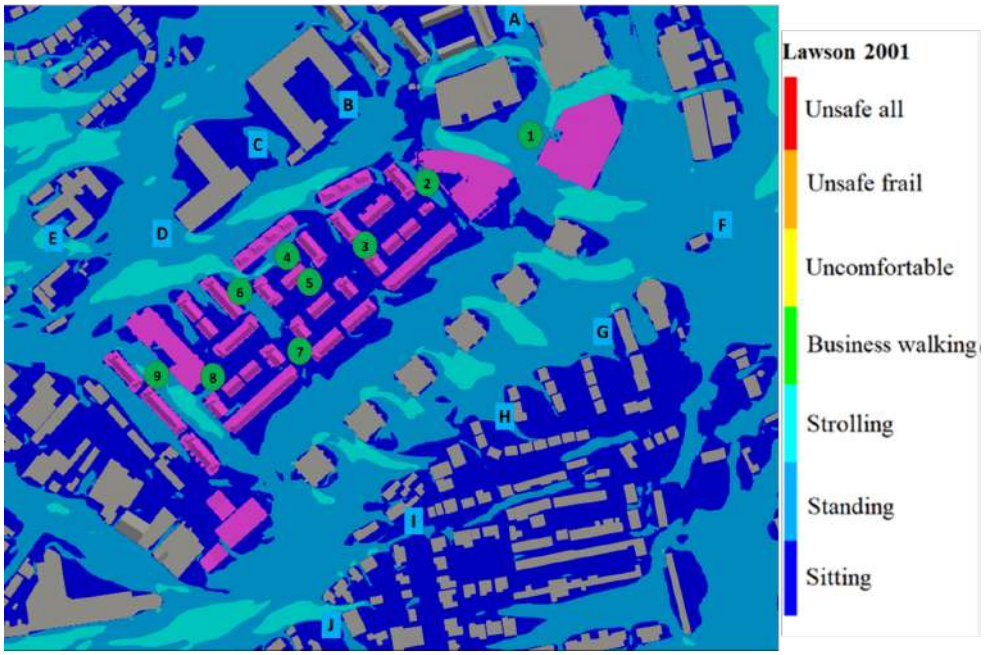
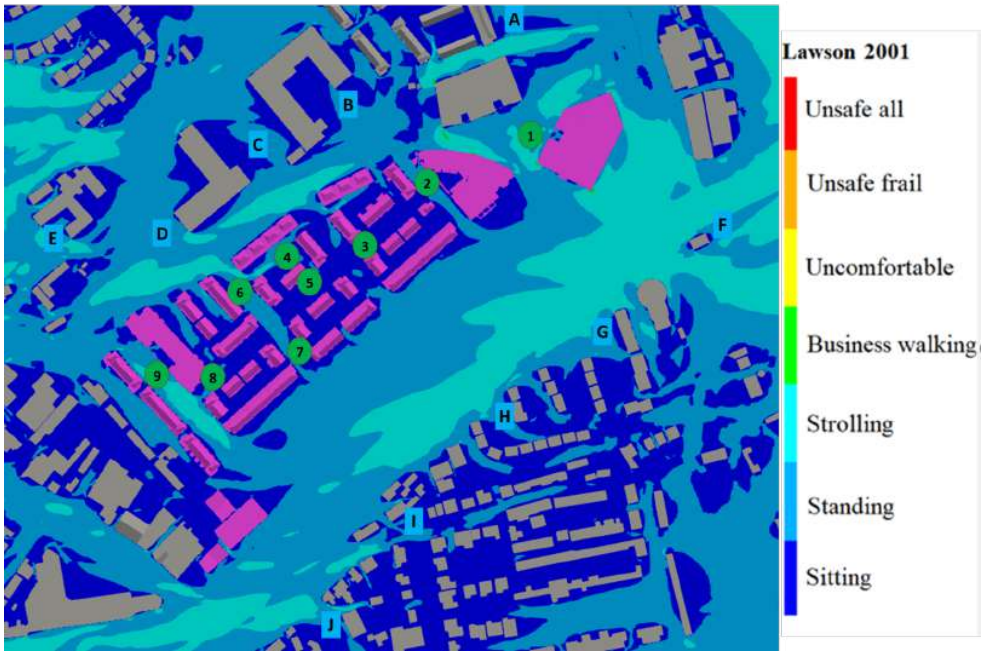
A comparison of Lawson Comfort and Distress Maps for proposed development scenario and the cumulative scenario is presented in Figure 9.14




Cumulative Scenario




Proposed Development Scenario

Figure 9.14: Comparison Wind Microclimate Conditions (Lawson Comfort/Distress Map)

Table 9.1: Significance Impact of the Cumulative Scenario Versus Proposed Conditions for Comfort - Potential Receptors

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| Potential Receptors | Proposed Conditions | Cumulative Conditions | Impact Significance |
|---|---|---|---|
| On-site receptor 1 | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |
| On-site receptor 2 | Suitable for intended use (Safe/No distress) | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 3 | Suitable for intended use (Safe/No distress) | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 4 | Suitable for intended use (Safe/No distress) | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 5 | Suitable for intended use (Safe/No distress) | Suitable for the intended use (Safe/No distress) | Negligible |
| On-site receptor 6 | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |
| On-site receptor 7 | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |
| On-site receptor 8 | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |
| On-site receptor 9 | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |
| Off-site receptor A<br>to<br>Off-site receptor J | Suitable for intended use (Safe/No distress) | Suitable for intended use (Safe/No distress) | Negligible |

As shown in Tables 9.1, there are no distress areas for pedestrians including frail users and cyclist. furthermore, the site and surrounding urban areas are safe for all users.

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# 10. CONCLUSIONS

## CONCLUSIONS and COMMENTS ON MICROCLIMATE STUDY

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This report presents the CFD modelling assumptions and results of Wind and Microclimate Modelling of Sea Gardens (Phase 2) Development, Bray.

This study has been carried out to identify the possible wind patterns around the area proposed, under mean and peak wind conditions typically occurring in Dublin, and also to assess impacts of the wind on pedestrian levels of comfort/distress.

The results of this wind microclimate study are utilized by Shankill Property Investments Limited to configure the optimal layout for Sea Gardens (Phase 2) Development for the aim of achieving a high-quality environment for the scope of use intended of each areas/building (i.e. comfortable and pleasant for potential pedestrian) and not to introduce any critical wind impact on the surrounding areas and on the existing buildings.

- The wind profile was built using the annual average of meteorology data collected at Dublin Airport Weather Station purchased from Meteoblue. The local wind speed was determined from CFD simulations with combination of the parameters inside Weibull probability distribution function, which obtained form historical meteorological data recorded 10m above ground level at Dublin Airport.
- A 12-discrete set of wind direction is used in order to evaluate the probability of exceedance at any given threshold speed. It is found that the prevailing wind direction in the west has the largest contribution of the discomfort exceedance probability.
- Microclimate Assessment of Sea Gardens (Phase 2) Development and it's environment was performed utilizing a CFD (Computational Fluid Dynamics) methodology.
- The assessment of the proposed scenario has shown that the proposed development meets the Lawson Comfort Criteria where no area is unsafe, and no conditions of distress are created by the proposed development. All the ground amenities proposed can be used for their intended scope. The wind microclimate of the proposed development is comfortable and usable for pedestrians.
- As a result of the proposed development construction, the wind on the surrounding urban context remains suitable for the intended use when compared with the baseline situation.
- The proposed development does not impact or give rise to negative or critical wind speed profiles at the nearby adjacent roads, or nearby buildings. Moreover, in terms of distress, no critical conditions were found for "Frail persons or cyclists" and for members of the "General Public" in the surrounding of the development.
- As a result of the construction of cumulative buildings in the future, the wind conditions on the surrounding urban context remains the same when compared with the proposed development situation. The cumulative buildings will have a negligible effect on the surrounding wind microclimate.

Therefore, the CFD study carried out has shown that under the assumed wind conditions typically occurring within Dublin for the past 15 years:

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- **The development is designed to be a high-quality environment for the scope of use intended of each areas/building (i.e. comfortable and pleasant for potential pedestrian), and,**
- **The development does not introduce any critical impact on the surrounding buildings, or nearby adjacent roads.**

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# 11. REFERENCES


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