

## 3.0 PROJECT DESCRIPTION

### 3.1 Introduction

This chapter of the EIAR has been prepared by Golder Associates Ireland Ltd (Golder) on behalf of Atlas GP Ltd, as Developer and Applicant for the Carmanhall Road Strategic Housing Development (SHD), (the 'Proposed Development'), on lands located at the former Avid Technology International site on Carmanhall Road, Sandyford Industrial Estate, Dublin 18, (the 'Site' / 'Application Site'). It presents a description of the Site and Proposed Development, including their relationship with the wider area. Descriptions of the development herein should be considered in conjunction with the plans and particulars of the overall Carmanhall Road Strategic Housing Development (SHD) Application.

The chapter provides a description of the development proposals (construction and operational/occupational phases); and explains the assumptions that have formed the basis of the Environmental Impact Assessment (EIA) process.

The chapter also provides an outline of the alternatives studied in the progression of the proposed development's planning and design, and the consideration given to each.

This chapter also includes an assessment of the expected effects of the vulnerability of the project to the risks of major accidents and disasters which are relevant to the Proposed Development.

### 3.2 Site Location and Project Overview

The Site is located in south county Dublin, within the administrative area of Dún Laoghaire Rathdown County Council (DLRCC). The Proposed Development is located on the south-west corner of the Carmanhall Road and Blackthorn Road intersection, within the Sandyford Industrial Estate.

The total Site area is ca. 1.03 ha with ca. 0.73 ha owned by the Applicant. The ca. 0.3 ha of land outside the ownership line are intended to be developed as streetscape/public realm upgrades subject to consent of DLRCC.

#### 3.2.1 Proposed Development Description

The Proposed Development comprises the construction of a 'build-to-rent' housing development, accommodating a total of 428 no. residential apartments, in a six to seventeen storey apartment building with maximum height provided within the north-east of the site at furthest proximity from adjoining sites (Figure 3.1).

The proposed scheme has a housing density of 416 dwellings per hectare, a plot ratio of 3.97 and a site coverage of 56%. These figures are calculated based on the application site area of 1.03 ha. More specifically, the 'build-to-rent' housing development will comprise the following mix of units:

- Studio Apartment 41 No. Units;
- One-Bedroom Apartment 285 No. Units;
- Two-Bedroom Apartment 94 No. Units; and
- Three-Bedroom Apartment 8 No. Units.

Of these apartments 413 no. will have access to private amenity space, in the form of a balcony or lawn/terrace, and 15 no. apartments will have access to a shared private roof terrace (142 m<sup>2</sup>) at ninth floor level.



**Figure 3.1: Computer Generated View of the Proposed Development from the junction of Blackthorn Road and Carmanhall Road.**

All of the apartments will have access to 2,600 m<sup>2</sup> of communal amenity space, spread over a courtyard at first floor level and roof terraces at the sixth, eighth and ninth floor levels. A residents’ childcare facility, which will accord with the relevant guidelines and will meet all relevant safety/building standards and regulations will be located on the ground floor level. Further residents’ amenities will include concierge/meeting rooms, office/co-working space, cinema, gym, yoga studio, laundry and café/lounge at ground floor level. The café/lounge will primarily serve the residents of the development and will be open for community use on a weekly/sessional basis. In addition to the amenities provided on site, it is also worth noting that the subject development is in close proximity to the Dundrum Shopping Centre which also features a variety of amenities and services.

The internal communal amenity space comprises a mix of amenities at ground floor level as outlined in Table 3.1.

**Table 3.1: Carmanhall Road SHD Communal Areas and Uses.**

Communal Amenity	Area (m <sup>2</sup> )	Clarification of Use
Concierge & Meeting Rooms	159	For use by Residents only
Meeting / Games Room	66	For use by Residents only
Office Space (Co-Working)	167	For use by Residents only
Childcare Facility	142	For use by Residents only
Café/Lounge	278	For use by Residents (with Local Community Access provided on Weekly/Sessional Basis)
Cinema	105	For use by Residents and Local Community

Communal Amenity	Area (m <sup>2</sup> )	Clarification of Use
Gym	214	For use by Residents and Local Community
Yoga Studio	77	For use by Residents and Local Community
Laundrette	22	For use by Residents and Local Community

The Proposed Development is served by a ground floor level carpark, accessible via new vehicular entrance from Carmanhall Road, providing a total of 145 no. vehicular parking spaces (including 8 no. mobility parking spaces, 2 no. club-car spaces and 44 no. electric charging spaces) and 5 no. motorcycle parking spaces. Bicycle parking, plant and storage is accommodated at basement level, with 752 no. bicycle parking spaces. A further 22 no. residential short stay bicycle parking are provided at Ground Floor Level bringing the total bicycle parking provision for the development to 774 no. spaces..

The Proposed Development includes improvements to street frontages and the public realm of Carmanhall Road and Blackthorn Road comprising provision of an upgraded pedestrian footpath, an increased quantum of landscaping and street-planting, new cycling infrastructure, the provision of new street furniture comprising bins, benches and cycle parking spaces and the upgrading of the existing Carmanhall Road and Blackthorn Road junction through provision of a new uncontrolled pedestrian crossing.

A pocket park has been incorporated into the design of the principal entrance to the scheme, off Carmanhall Road, to provide a transitional area between the private and public areas of communal amenity. Such parks present an option for the provision of public spaces without large-scale redevelopment.

Other ancillary works include the provision of play equipment, boundary treatments, drainage works - including SuDS drainage, landscaping, lighting, rooftop telecommunications structure and all other associated site services, site infrastructure and site development works.

The former Avid Technology International buildings were demolished on foot of Reg. Ref. D16A/0158 which also permitted a part-five rising to eight storey apartment building. The development approved under Reg. Ref. D16A/0158, and a subsequent part-seven rising to nine storey student accommodation development permitted under Reg. Ref. PL06D.303467, will be superseded by the Proposed Development

### 3.2.2 Surrounding Environment

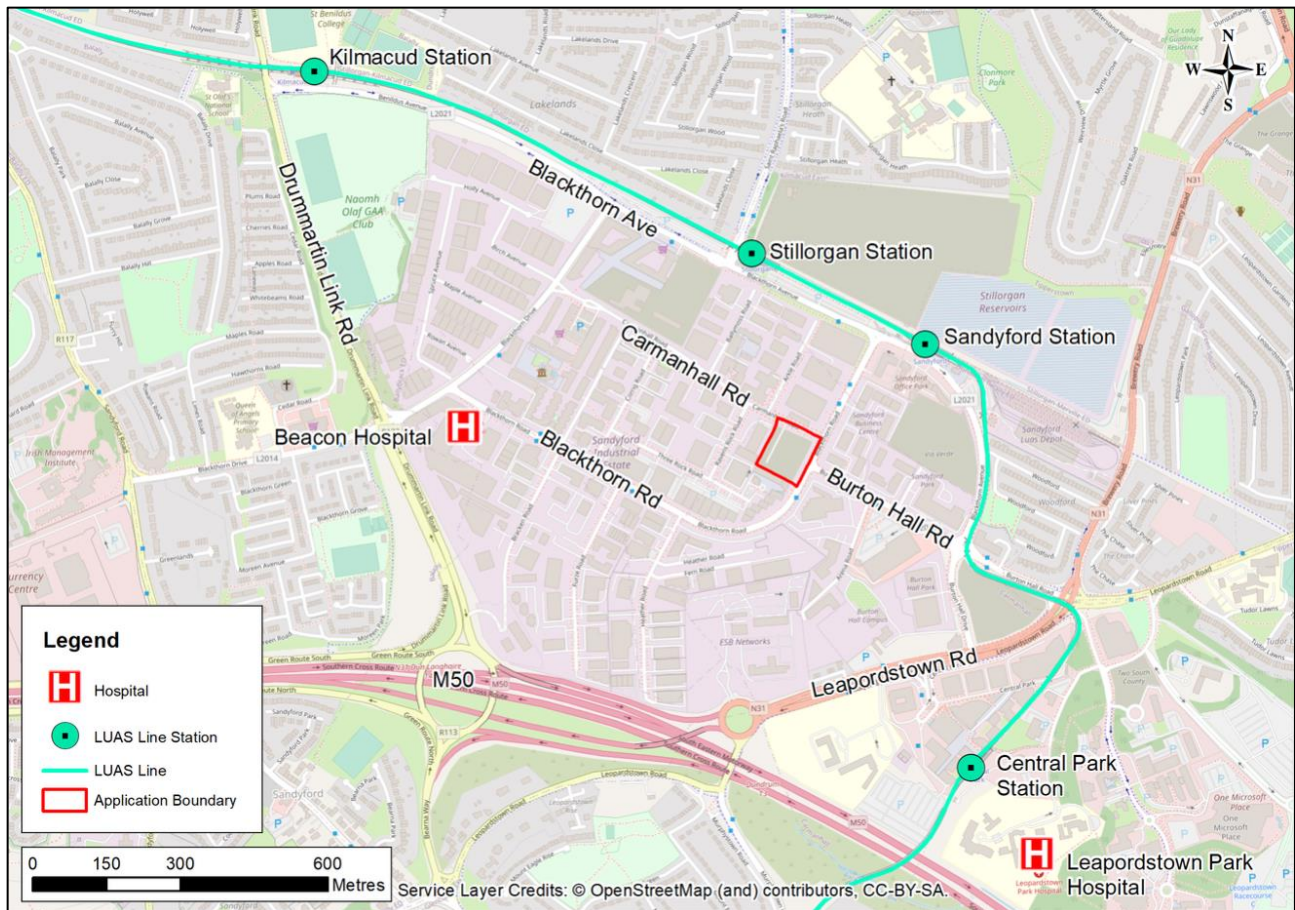
As noted, the Site is located on the south-west corner of the Carmanhall Road and Blackthorn Road intersection, within the Sandyford Industrial Estate (Figure 3.2). Specifically, the Proposed Development site is located on a brownfield site where a former commercial premise was recently demolished. The Sandyford Industrial Estate is primarily composed of retail, warehousing units, industrial uses and office buildings. The Beacon Hospital is located further to the west of the Site.

To the west of the Site is the Walls Construction offices and Mercury Engineering is located to the south west, Chill Insurance, Innopharma Education and Febvre are situated to the south. To the east of the Application Site is the Inverso offices and Medlab Pathology. The site directly north is occupied by a Londis Supermarket and Insomnia Coffee shop. Microsoft occupy a 6-storey block located beyond these shops. The Stillorgan Reservoir, dated from 1860, is located further to the north of the Site.

Carmanhall Road abuts the site's northern boundary and Blackthorn Road abuts the site's eastern boundary. Vehicular access is provided in the north-western corner of the site via a crossover to Carmanhall Road. The site slopes from south to north towards Carmanhall Road.

The site is connected to transport links such as the M50 motorway, the Luas (Stillorgan and Sandyford Luas stops located approximately 350 m north-east of the site), and a number of bus routes such as the No. 11, 47,

75, 114 and 116. The surrounding industrial estate has seen much redevelopment in recent years with a shift from the previous low-rise, low-density manufacturing sites to higher density medium and high residential, technology and office developments.



**Figure 3.2: Location of the Proposed Development within the surrounding lands.**

### 3.3 Detailed Description of the Proposed Development

#### 3.3.1 Architectural Design

A detailed account of the architectural design of the Proposed Development has been provided in the Architectural Design Statement accompanying this SHD Application, which has been prepared by Burke Kennedy-Doyle (BKD) Architects. The design of the development was prepared having regard to the feedback received from An Board Pleanála (The Board) and DLRCC during pre-planning consultations.

The Proposed Development has been designed having regard to the prominent central position of the subject site in the context of the wider Sandyford Industrial Estate and the vista which the site commands along Burton Hall Road.

The Proposed Development is designed to maximise the use of the land resource at the Site which is well serviced by public transport. Detailed consideration of daylight and sunlight studies and a wind analysis have also informed the design of the building configuration. Other key design strategies adopted by BKD include raising the residential units to the 1st floor, whilst designating the ground floor to support other uses, which creates areas where a range of activities can take place and increases the available public space area.

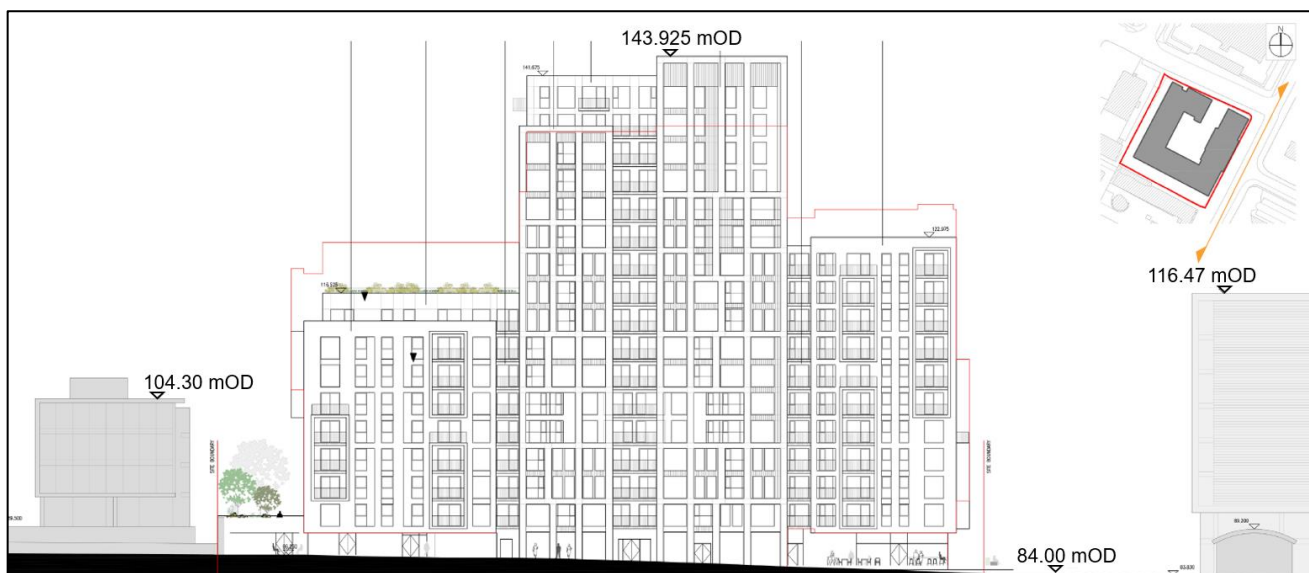
The layout of the Proposed Development has been designed to maximise the daylight levels. The analysis determined that 96% of rooms were in excess of the BRE guidelines for average daylight factors. This analysis has been prepared by IN2 in their Daylight Assessment submitted as part of this SHD application.

The landscape areas have been designed to provide a variety of flexible spaces (play, fitness, lounging, barbecue and dining areas). These areas are protected from the elements with high parapets, pergolas, and semi open covered spaces.

## Height

The building height of the Proposed Development ranges from six to seventeen storeys. The level of the proposed basement has been designed at ca. 80.3 mOD (meters above ordnance datum). The surface level at the Carmanhall Road and Blackthorn Road intersection will be ca. 84.0 mOD.

Roof, communal terraces and roof garden heights will vary depending on the number of storeys and location. The total height of the marker tower element at the Bruton Hall Road junction will be ca. 143.925 mOD, (Figure 3.3).



**Figure 3.3: Building and ground level heights. View from Burton Hall Road to the east. BKD Architects**

## Daylight / Sunlight

A Sunlight and Daylight Analysis has been performed for the Proposed Development by IN2, (2021).

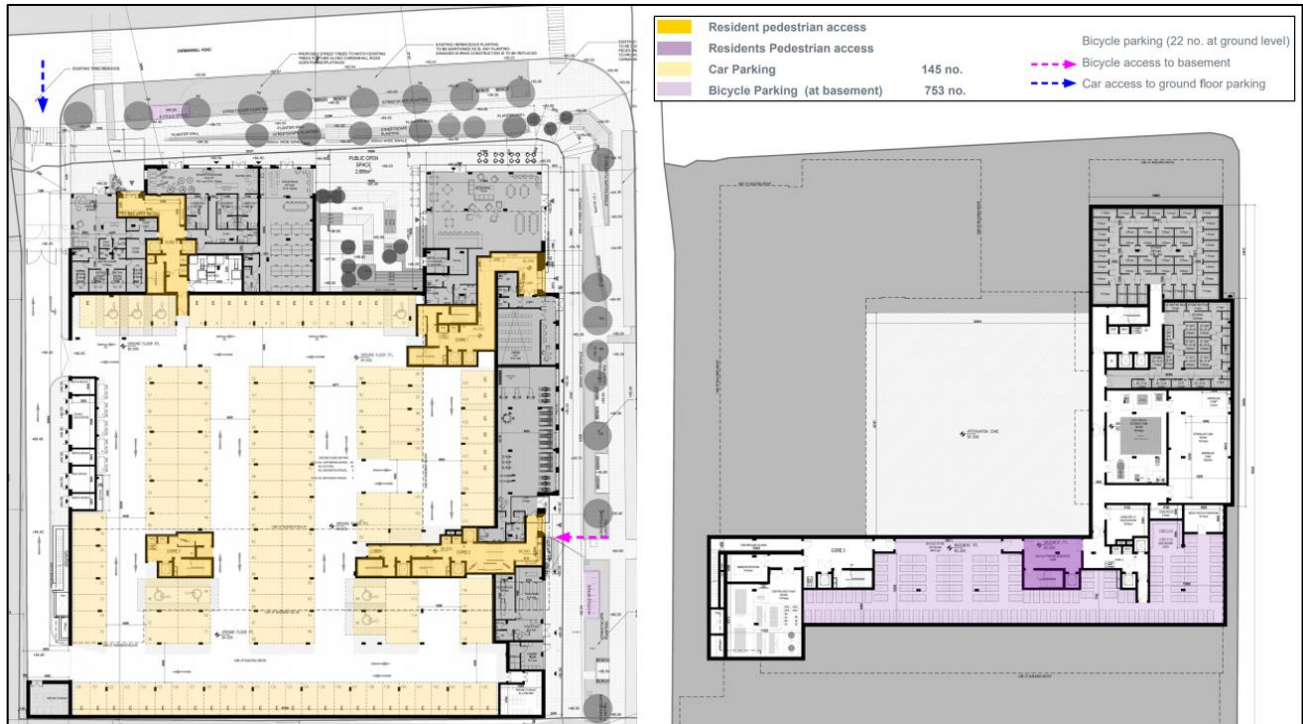
Sunlight availability to the Amenity spaces was assessed against the BRE.209 criterion of achieving at least 2 hours potential sunlight on March 21st to the majority of its area. Compliance was determined for the proposed amenity space with 79% of the proposed amenity space achieving compliance. The internal daylight analysis was undertaken for all units across the development. The analysis determined that 96% of rooms were in excess of the BRE guidelines for average daylight factors. Sunlight and shading analysis were also undertaken which demonstrated that the Proposed Development would not negatively impact on existing neighbouring buildings.

The overall assessment confirms that Best Practice Sunlight and Daylight Availability have been ensured for the Proposed Development, with no undue impact on existing neighbouring environment.

## Parking and Access

The Proposed Development will provide for a total of 145 no. vehicular parking spaces, which will include 8 no. mobility parking spaces, 2 no. club-car spaces and 44 no. electric charging spaces. The Site will also have 5

no. motorcycle parking spaces. Bicycle parking, plant and storage is accommodated at basement level with 752 no. bicycle parking spaces. A further 22 no. residential short stay bicycle parking are provided at Ground Floor Level bringing the total bicycle parking provision for the development to 774 no. spaces. The general locations of these parking facilities have been identified in Figure 3.4.



**Figure 3.4: Car and Bicycle parking layout. Ground floor (left) and Basement (right). BKD Architects.**

The vehicular circulation within the site will be limited. The proposed car parking on the site has been designed to have three main positive impacts:

- Increase in the usage of public transport;
- Minimal increase in traffic to the area; and
- Reduction of the size of the basement, making the construction process more sustainable.

The mix of uses on site in such a well-connected location, ensures the need for cars is minimised, allowing more space in the scheme for public space and residents’ amenities.

The internal roads through the car park are to be 6.0 m wide to ensure that there is sufficient aisle width to facilitate 90° parking and two-way traffic movements through the Site.

Car park entrances and exits and routes through it have been designed to cater for a 10.2 m bin lorry.

Access to the car park will be from Carmanhall Road, on the north west corner of the development. This is also the current access point to the existing Site. The car park entrance for the Proposed Development will be located adjacent to the manager’s office/security which will provide surveillance to the area. A vehicle gate and side pedestrian gate are to remain opened during the day and are to be closed at night only, for additional security.

In accordance with Design Manual for Urban Roads & Streets (DMURS), sightlines of 45m are required having regard to the speed limit along Carmanhall Road (50 km/hr). This visibility splay requirement will be achieved at the subject site access from a 2.4 m setback.

It is proposed that this access point is also used for the construction phase of the Proposed Development. Any amendments to this arrangement during that phase will be identified in the Main Contractor's Construction Management Plan and agreed with DLRCC.

## Materials

A design review process was carried out by BKD to review the materials and finishes of the Proposed Development.

The location of each of the selected materials of the proposed palette has been selected with the intention to create a hierarchy of architectural treatment to provide an intuitive way to navigate the scheme. The proposed use of stone is a response to the specific two marker elements that are proposed for the scheme to act as way finders.

Light brick is proposed to be used as a secondary material that complements the stone. Light brick facades fronting Carmanhall Road and Blackthorn Road, are sculpted with projected vertical elements.

The dark metallic cladding articulates stone and light brick volumes. The metallic cladding forms the articulations of the scheme, and it is high quality dark cladding. The external walls and roof will be so designed and constructed that they afford adequate resistance to the spread of fire to and from neighbouring buildings as per the external fire spread requirements of BRE 187

The light brick treatment will be sculpted fronting Carmanhall Road and Blackthorn Road with selected colour projecting balcony surrounds with contrasting timber patterned internal linings.



**Figure 3.5: Materials and finishes for the Proposed Development. BKD Architects.**

### 3.3.2 Landscape Design

The Site contains a number of existing trees along the boundary. A total of 18 trees were identified and assessed by Niall Montgomery and Partners (NMP; Figure 3.6). It is proposed that most of these trees will be retained or utilised within the Proposed Development's landscaping scheme. The levels along the road/ footpath interface, have been designed to maximise vegetation retention. This includes the existing planted verges and it is proposed to retain a significant proportion of this soft landscape.

The design of the Proposed Development intends to mitigate, in so far as possible, the loss of the existing trees by planting substantial new rows of semi-mature trees. Many of the chosen species reflect existing species on site and, in time, will reach the heights and cover provided by the current trees.



**Figure 3.6: Existing trees to be removed and retained, and proposed new street trees. Works and upgrades in the ca. 0.3 ha of land outside the ownership line are subject to consent of DLRCC. Niall Montgomery and Partners.**

Most of the roadside planting along the north boundary of the site will be retained in the proposed landscape plan, with the exception of the area where the vehicular access will be provided, (Figure 3.7). Along the south-west boundary of the Site, most of the planting that will be removed will be done so as to provide a cycle lane that runs along with the carriageway or to allow pedestrians to access the building from the street.

The planting in the streetscapes will be composed of wildflower and perennial planting, bulbs and native trees. Any public realm improvements outside of the application boundary are subject to appropriate consent from DLRCC.



**Figure 3.7: Meadows to be removed and retained. Works and upgrades in the ca. 0.3 ha of land outside the ownership line are subject to consent of DLRCC. Niall Montgomery and Partners.**

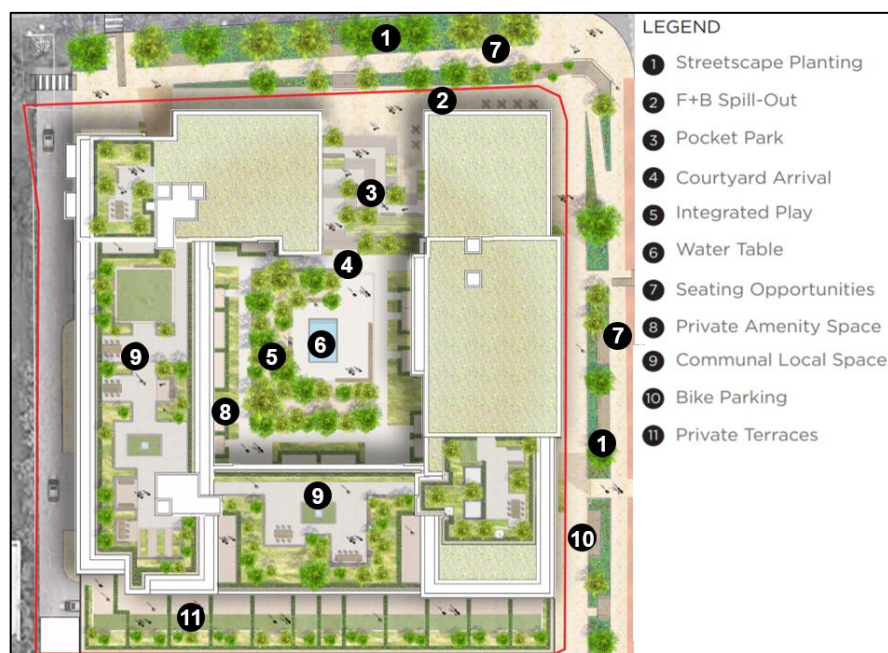


Landscape design principles which will enhance the scheme have been identified by NMP in their Landscape Design Statement (2021). These will have beneficial effects on the design, populations using the space and the biodiversity of the Site. These principles are;

- Pedestrian Orientated Scheme, which will assist access and mobility through the Site for impaired users, emergency and service vehicles;
- Creating spaces within landscape zones with ample seating opportunities. This enhances the spaces and can cater for activities such as play, seating and event opportunities.
- Additional tree planting and the development of roof gardens will result in a net gain for biodiversity.

The proposed landscape design will consist of a number of elements (Figure 3.8), which as a result of the architectural shape of the Proposed Development, will be spread across different levels. This design will provide for streetscape landscaping on Carmanhall Road and Blackthorn Road, pocket parks, courtyards, play areas, seating areas, private amenity spaces, communal spaces, bike parking and private terraces.

Controlled access will be located at the Courtyard Arrival point from the pocket park. There is a 4.5 m difference between the lowest and the highest point of the pocket park, which is spatially spread over 4 sets of steps. Seating pockets will be provided at the side of the landings and integrated with raised planters within the spaces. These planters act as a feature in the landscape of the park.



**Figure 3.8: Landscape Plan.** Works and upgrades in the ca. 0.3 ha of land outside the ownership line are subject to consent of DLRCC. Niall Montgomery and Partners.

### 3.3.3 Proposed Works to Communal Public Area

The proposed scheme includes new pedestrian ways to the north and east which connect Carmanhall and Burton Hall Roads. The proposed building will be set back from the corner to provide a new landscaped public open space which will extend along the building's frontages to the Carmanhall Road and Blackthorn Road.

The residential units are raised to the 1<sup>st</sup> floor, with the ground floor supporting mixed uses and providing a new frontage to the area. The development of new public spaces incorporates streetscape planting, a series of pocket seating areas, and two pedestrian walkways at different levels.

The mix of uses on site in such a well-connected location, ensures the need for cars is minimised, allowing more space in the scheme for public space and interaction of residents. The proposed design to the public areas provides security by the mix of uses along the two adjoining roads, a large proportion of active frontage and the passive supervision provided by the 1<sup>st</sup> floor residential units above.

The design of an enclosed communal amenity space within the Proposed Development and the public space associated with the adjacent roads provides the opportunity for passive supervision of the public realm and these shared spaces reduce the opportunities for unsupervised areas where anti-social behaviour could occur.

### 3.3.4 Proposed Works to Public Roads

It is proposed that the existing pedestrian crossing along the Carmanhall road will be moved approximately 10 m east of its current location to facilitate the construction of the new vehicular access point. It is envisaged that the crossing would be moved early in the construction stage of the Proposed Development to allow the new Site entrance to be created. Further to this it is proposed to upgrade the existing Carmanhall Road / Blackthorn Road junction by means of providing a new uncontrolled pedestrian crossing.

An off-road cycle lane is also proposed to be provided along the Blackthorn Road which will tie in with the existing cycle facilities to the north-east of the site.

### 3.3.5 Site Services and Connections

#### Utilities

New infrastructure connections have been considered in the design of the Proposed Development.

In terms of electrical supplies to the Site a new ESB double sub-station and a new ESB single sub-station have been proposed within the footprint of the development. These provisions will be sufficient to cater for the electrical supply required for the Proposed Development.

The utility strategy for the Proposed SHD at Carmanhall Road is a centralised heating plant option. Heat will be generated by Air Source Heat Pump, Cascade Boilers and CHP (Combined Heat and Power). A gas connection will be required for the Site, however the centralised system provides versatility to pursue other technologies so the building can meet future benchmarks or carbon target.

It is proposed to provide a new Landlord comms room in the basement where all incoming Telecoms providers will terminate their incoming cables. A new Virgin Media chamber will be required, which will be connected with a new duct to the basement for future incoming telecom services.

All existing Eir cable connections will be removed from the Site and a new fibre cable connection will be provided. Additionally, there is currently a Virgin Media connection to the Site that will be disconnected and removed prior to the commencement of the main construction phase.

#### Foul Water

The Proposed Development will require a foul water connection to the local network to service the 428 No. residential units and other communal facilities within the Development. A pre-connection enquiry was submitted to Irish Water (Reference No: CDS20000844; 06 February 2020) for the Proposed Development. Irish Water issued a Confirmation of Feasibility on 14 August 2020. This required the wastewater connection to be made to the foul sewer on Arkle Road (north of the Site). Surveys for this sewer found that the furthest upstream pipe was blocked/capped and it is now proposed to connect to the sewer at the next manhole downstream. Irish Water confirmed that a Statement of Design Acceptance had been issued for the updated development following the An Bord Pleanála opinion.

## Potable Water

The Proposed Development will also require a potable water supply connection to the local network to service the 428 No. residential units and other communal facilities within the Development. As per the foul water pre-connection enquiry submitted, Irish Water issued a Confirmation of Feasibility for the Proposed Development. Irish Water identified additional requirements with The Board subsequent to the Confirmation of Feasibility where further submissions are to be agreed if the Proposed Development includes proposals to build over or divert existing water or wastewater services. A Diversion Confirmation of Feasibility has now been obtained from Irish Water.

## Surface Water

It is proposed that surface water discharge from the Proposed Development will be to the existing surface water sewer on Carmanhall Road. This will be facilitated by a new connection to the existing manhole. It is also proposed to decommission the existing connection. The proposed storage network to serve the Proposed Development has been designed and modelled for the 1 in 100-year storm event, with an allowance of 20% for climate change, as required in the Greater Dublin Strategic Drainage Study.

The design of the Proposed Development will also incorporate two Stormtech attenuation tanks which will provide a storage volume of 286 m<sup>3</sup>. A proposed green roof system will provide additional storage volume throughout the Site; however, this storage was not included in the attenuation volume, thus providing further mitigation. All surface water from the Site will discharge to the public network after flowing through the proposed petrol interceptor, where hydrocarbons will be removed.

### 3.3.6 Operational Management of the Proposed Development

A Property Management Agent/Company would be appointed to manage the estate and common areas on behalf of the landlord. This will ensure that the Proposed Development is appropriately managed and maintained to a high level in line with the planning application for this scheme.

The Proposed Development will have a designated management / concierge office, which will focus on management of the residents as well as the overall estate.

It is proposed that there will be an on-site estate manager employed during 'normal' working hours 9am – 6.00pm weekdays to address issues which are escalated from the onsite staff / concierge daily. The onsite estate manager would ultimately be responsible for the standard of the development, the on-site staff and third-party contractors. The responsibilities of the management company will include:

- Site security;
- Cleaning of communal internal and external common areas;
- Waste management, which will encompass the management of waste contractors, inspection and upkeep of waste storage areas, and the monitoring of waste segregation.
- Health and safety, which includes the development of an occupier's handbook and general risk assessments and method statements to manage the Site's activities and hazards
- Maintenance of communal landscaped areas;
- Access control and security;
- Water management, including legionella risk assessments and testing;
- Management of fire risks, including documented risk assessments, prevention equipment and evacuations;  
and

- Parking and mobility management.

### 3.3.7 Operational Waste

An Operational Waste Management Plan (OWMP) has been prepared for the Proposed Development and has been submitted as part of this SHD application.

The OWMP details how waste will be managed during the operational phase so as to ensure that the development's waste is managed appropriately and in accordance with applicable legislation, DLRCC plans and policies and regional waste management targets.

This plan also specifies the waste infrastructure and storage areas required for effective waste management, segregation and collection services for the development. The Proposed Development's operational waste management practices will undergo periodic review by the management company. Such reviews will ensure that practices and systems undergo continual improvement and that the Proposed Development is assisting appropriate targets in accordance with further local and regional waste objectives.

## 3.4 Proposed Development Construction and Phasing

It is anticipated that the construction of the Proposed Development will be conducted in a single phase over a period of approximately 24 months, from the commencement of the construction works to final completion. It is expected that a detailed Construction Programme will be prepared by the main contractor for the works.

The proposed sequencing of the construction phase of the Proposed Development is as follows:

- Initial set-up of Site, including security and construction compound;
- Identifying and locating above and below ground utilities and services at the Site and its surroundings;
- Removing limited on site vegetation;
- Site preparation, including the stripping of soils, tarmac/asphalt surfaces, segregation, stockpiling and export from site;
- Development of the Proposed Development's foundations and substructure. Activities at this stage include the use of rebar, concrete formwork and pour;
- Development of the Proposed Development's superstructure. Activities at this stage include the use of rebar, concrete formwork, pour and blockwork;
- Construction of the superstructure's external envelope and façade;
- Internal finishing, including the mechanical and electrical fit out; and
- External landscaping, including roof top gardens and perimeter planting.

### 3.4.1 Construction Management and Plans

The construction phase activities and overall site responsibilities will be laid out in a Construction Management Plan (CMP). This will be developed and implemented by the appointed Main Contractor and agreed with DLRCC prior to the commencement of construction works.

A preliminary Construction Management Plan (pCMP) has been completed for this SHD application for the Proposed Development. Ultimately, this pCMP will evolve into the finalised Construction Management Plan (CMP) prepared by the Main Contractor.

Elements of this pCMP may vary depending on the methods of the appointed Main Contractor, markets and other considerations. The purpose of this pCMP is to outline the general activities required for the construction of the Proposed Development.

The CMP will contain other supplementary management plans to efficiently manage construction issues such as the environment, health and safety, traffic and waste.

### **Construction Environmental Management Plan**

A Construction and Environment Management Plan (CEMP) has been prepared to accompany this SHD Application. This will be a live document and will be further developed by the Main Contractor for the construction activities associated with the Proposed Development.

The aim of the CEMP is to define the organisation structure, responsibilities, practices, procedures, processes and resource to allow the management of the construction of the development in general accordance with the ISO14001 (EMS) Standard.

The CEMP outlines the developer's and the appointed Main Contractor's approach to avoid wherever practicable, environmental risk; to reduce consumption of resources; to restrict the production of waste; and to promote good relationships with interested parties and the general public.

The CEMP would be a living document that would be updated according to changing circumstances on the Project and to reflect current construction activities. The CEMP can be used to develop method statements for specific components of work.

The contractor will be responsible for ensuring that the contents of the CEMP are satisfactorily circulated and explained to relevant staff for implementation during construction.

### **Construction Health and Safety Management**

Works during the construction phase of the Proposed Development will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013), as amended.

A Construction Stage Health and Safety Plan will be developed by the Main Contractor's Project Supervisor Construction Stage (PSCS). This will be a live document for the management of health and safety at the development site. The document will evolve with the ongoing works at the Site and change depending on hazards and risks associated with the works.

The PSCS will be an appropriately qualified and competent person or organisation appointed by the developer and shall be responsible for conducting the relevant duties under the Safety, Health and Welfare at Work (Construction) Regulations. This will enable the developer to meet the relevant requirements of these Regulations.

### **Construction Traffic Management Plan**

The Main Contractor will develop a detailed Construction Traffic Management Plan (CTMP) for the Proposed Development. This will support the plans and provisions in the CMP where construction activities interact with public roads or have the potential to interact with public roads.

The CTMP will be developed in consultation with all relevant authorities and submitted to DLRC for approval prior to the commencement of the construction phase.

### **Construction and Demolition Waste Management Plan**

A Construction and Demolition Waste Management Plan (CDWMP) has been prepared to accompany this SHD Application. The Waste Management Act (1996, as amended) contains key legal obligations for the management of wastes and makes provisions in relation to the prevention and control of waste.

The Act also provides for a general duty on all parties not to hold, transport, recover or dispose of waste in a manner that causes or is likely to cause environmental pollution.

The CDWMP will be updated by the Main Contractor in accordance with their proposed construction methodology and will conform to the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (Department of Environment, Heritage and Local Government, July 2006; or as updated). This plan will be available on site for the relevant parties enacting the plan during the construction phase.

### 3.4.2 Construction Site Working Hours

In accordance with the DLRCC County Development Plan 2016-2022, the working hours of the construction site would be: 08:00 hours to 19:00 hours Monday to Friday; and 08:00 hours to 14:00 hours on Saturdays. No work will be carried out on Sundays or bank holidays and the Site will remain secure when construction is not taking place. No work, or other activity that could reasonably be expected to cause annoyance to residents in the vicinity (including deliveries), will take place on site between 19:00 hours and 08:00 hours.

Special construction operations may be identified by the Main Contractor as the Project progresses and may need to be carried out outside these hours to minimise disruption to the surrounding area. The Main Contractor will consult on and agree such construction operations with DLRCC in advance.

## 3.5 Planning Policy and Need for the Proposed Development

The Department of Public Expenditure and Reform's 2018, National Development Plan (NDP) 2018 - 2027 identifies that the population of Ireland is expected to grow by over 1 million to 5.7 million people by the year 2040. The NDP also recognises the urgent requirement for a major uplift of the delivery of housing within existing built-up areas of cities. The NDP notes there should be a particular focus on brownfield development which targets derelict and vacant sites that may have been developed before but have fallen into disuse.

The Department of Housing, Planning and Local Government published the 'Project Ireland 2040 - National Planning Framework' policy document in 2018. This Framework seeks a more balanced and concentrated growth, particularly within the five major cities in Ireland. Strategies included in Chapter 2.2 of the Framework seek to target a greater proportion (40%) of future housing development to be within and close to the existing 'footprint' of built-up areas.

This target is to be achieved by developing underutilised land and buildings, including 'brownfield' sites, with higher housing and jobs densities, better serviced by existing facilities and public transport; such as Sandyford as per the following commentary from the Project Ireland 2040 document.

*'A major new policy emphasis on renewing and developing existing settlements will be required, rather than continual expansion and sprawl of cities and towns out into the countryside, at the expense of town centres and smaller villages. The target is for at least 40% of all new housing to be delivered within the existing built up areas of cities, towns and villages on infill and/or brownfield sites. The rest of our homes will continue to be delivered at the edge of settlements and in rural areas'*

The DLRCC County Development Plan 2016-2022, (Section 1.2 of the Plan) identifies the DLRCC Core Strategies for the medium to long term for the various towns, villages and rural areas within the overall administrative area.

The central focus of the Core Strategy is on residential development and in ensuring that there is an acceptable balance between the supply of zoned, serviced land for residential development and the projected demand for new housing, over the lifetime of the Plan.

Appendix 15 of the DLRCC County Development Plan 2016-2022 is the Sandyford Urban Framework Plan, which was originally prepared in 2011 to respond to the fact that development in Sandyford had occurred in the prior years at an unprecedented pace and in an uncoordinated and piecemeal fashion. This Urban Framework Plan now provides for a coherent strategised development of the overall Sandyford Business District.

The Site is located within Zone 5 (Residential) of the Sandyford Urban Framework Plan (Figure 3.9). DLRCC have identified Specific objectives (A2 1 to A2 5) in relation to the creation of Sustainable Residential Neighbourhoods, that preserve and protect residential amenity in Zone 5 of the Sandyford Business District.

The purpose of the Proposed Development is to provide a high-density residential development with residential and local community amenity spaces within the environs of the Sandyford Industrial Estate. The subject site is designed to *‘provide for the creation of sustainable residential neighbourhoods and preserve and protect residential amenity’* which is the applicable A2 zoning objective for the lands. It is considered that the extent of Proposed Development allows for the efficient use of the site with the associated amenities provided at ground floor level, and providing an active frontage for the benefit of the adjoining public realm along Carmanhall Road and Blackthorn Avenue.



**Figure 3.9: Extract from Map 1 of Appendix 15 (Sandyford Urban Framework Plan) from the DLRCC County Development Plan 2016-2022. Application Site boundary indicated in Red.**

To ensure the appropriate provision of social and community infrastructure to serve the needs of the resident and employee population, a Specific Local Objective, SLO 113, has been included in the Plan, *‘To facilitate the provision of community infrastructure at ground floor along the eastern outer edge of the Carmanhall residential neighbourhood along Blackthorn Road, to create active street frontage and to ensure the appropriate provision of social and community infrastructure to serve the needs of the resident and employee population’*. The range of uses provided in the Proposed Development has been considered appropriate in the context of SLO113 in that it provides a definitive range of active uses at ground floor level such that the eastern elevation of the building along Blackthorn Road would be sufficiently animated.

Furthermore, the provisions within the NDP and National Planning Framework for the development on brownfield sites in close proximity to cities and urban centres, provides additional justification for the need for the Proposed Development. Further justification of this need and specific planning and policy objectives are

provided in the Hughes Planning and Development Consultants' 'Statement of Consistency & Planning Report', (2021), which has been prepared and submitted in the SHD Application for the Proposed Development.

### 3.6 Project Alternatives

Annex IV(2) of the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU), identifies that all Environmental Impact Assessment Reports should include:

*'A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'*

This section outlines the potential Project alternatives that have been considered in relation to environmental, planning and development factors of the Carmanhall Road SHD.

The principle alternatives assessed during the design and planning of the Proposed Development were alternative design layouts for a residential development at the Application Site.

#### 3.6.1 Previously Granted Alternative Development

There are two previously granted alternative developments which were consented for the Application Site since 2016. These are:

- **Reg. Ref. PL06D.303467** - Permission granted by An Bord Pleanála on 30 April 2019 for a student accommodation development comprising the construction of 122 no. apartments, providing 817 no. student bed spaces, with associated residents' facilities (inclusive of 101 m<sup>2</sup> entrance/reception; 297 m<sup>2</sup> gym; 119 m<sup>2</sup> café/lounge and 85 m<sup>2</sup> laundrette) in 1 no. block of 7-9 storey height with 57 no. vehicular and 586 no. cycle parking spaces.
- **Reg. Ref. D16A/0158** - Permission granted by Dun Laoghaire-Rathdown County Council on 01 September 2016 for a development comprising the demolition of existing buildings and the construction of 147 no. apartments with associated residents' facilities (inclusive of 216 m<sup>2</sup> crèche; 46 m<sup>2</sup> gymnasium; 93 m<sup>2</sup> media suite; and 141 m<sup>2</sup> café) in 2 no. blocks of 5-8 storey height with 151 no. vehicular and 158 no. cycle parking spaces.



Figure 3.10: Section and Layout of Reg. Ref. PL06D.303467, student accommodation consented in April 2019.





**Figure 3.11: Section and Layout of Reg. Ref. D16A/0158, residential development consented in September 2016.**

The current Proposed Development differs from the 2019 application in that private residential accommodation is now proposed in place of student accommodation. The current Proposed Development retains the provision of ancillary communal facilities, with an extent of shared communal/community infrastructure facilities, to present a range of active uses at ground floor level to the adjoining streets.

It is considered that the Proposed Development provides additional positive social effects in relation to the previous planning applications through its increased efficiency in use of the Site and its size and scale. Furthermore, the Proposed Development is designed to provide a high standard of accommodation and amenity for future occupants and the local community.

The current proposal comprises a 6-17 storey over basement building and is considered appropriate on the basis of the accessibility to high-quality public transport links. The building is to be sited within a prominent location in the context of Sandyford Industrial Estate and will contribute to the urban character and public realm quality of the immediate surrounds through attractive visual design and the creation of a pocket park.

A further development (Reg. Ref. D05A/0239) was consented on 28 July 2005 for a development comprising the demolition of existing buildings and the construction of 265 no. apartments and 2,175 m<sup>2</sup> of ground level retail/commercial floorspace in 4 blocks of 3-13 storey height with 337 no. vehicular and 348 no. cycle parking spaces. It is considered that there are significant changes in Irish society and national objectives since the consent of this Project in 2005; such as the economic downturn after 2008 and the more recent pressure on national housing stock.

### 3.6.2 Alternative Location

Alternative locations for the Proposed Development were not considered during the development stage of this Project. The justification for this is owing to the zoning and residential objectives for the Site identified in the DLRCC Sandyford Urban Framework Plan 2016-2022 (Appendix 15 of the DLRCC County Development Plan 2016-2022) which align with the use of the Site for residential purposes and which at the time were informed by a Strategic Environmental Assessment.

Furthermore, there are positive environmental effects in the development of a brownfield site when compared to developing a greenfield site elsewhere. This rationale is mirrored in the focus of the Project Ireland 2040 - National Planning Framework, and NDP 2018 – 2027, as identified in Section 3.5 above.

Therefore, the scale and nature of the Proposed Development is considered appropriate for the Application Site and its regional and local location.

### 3.6.3 Alternative Technology/Processes

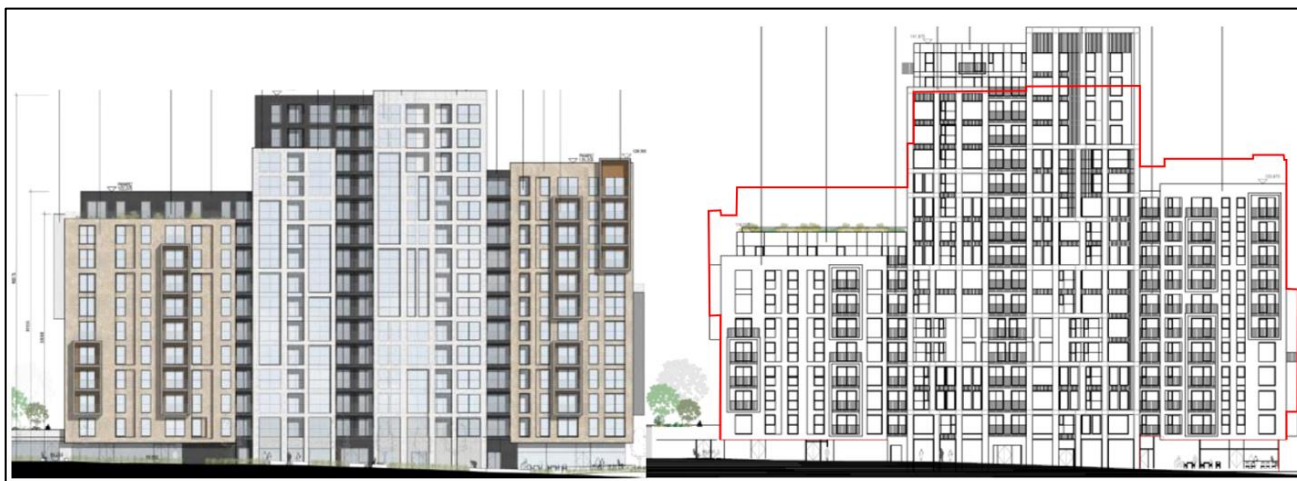
Given the nature of the Project (residential) and the rationale for the Proposed Development, reasonable alternative technologies or processes were not assessed.

However, an energy analysis was carried out as part of the development design and is submitted within the SHD Application (IN2, 2021).

Energy analysis was undertaken to demonstrate compliance to relevant building regulations, technical guidance, and the EU Directive for Near Zero Energy Buildings (NZEB). The report then examines the methodology in terms of Primary Energy, Renewable Technologies, and the alternatives between Centralised and Decentralised plant. The report illustrates how electrically based technologies (Air Source Heat Pumps, Photovoltaic panels etc.) are increasingly favoured options and that the centralised system provides versatility to pursue other technologies so the building can meet future benchmarks or carbon target.

### 3.6.4 Alternative Design of Development and Size and Scale

The design of the Proposed Development was revised and altered in response to the Section 5 Pre-Application Consultation with An Bord Pleanála. During this process it was considered that the originally presented elevations did not achieve a landmark building and it was suggested that this be achieved by increased height. The current Proposed Development design has thus been refined, through the dropping of the adjoining shoulders of the eastern elevation and the increased height of the central tower feature to provide a landmark tower element.



**Figure 3.12: Contextual south-east elevation of the alternative design as submitted for pre-application consultation (Left), and revised Proposed Development design for the current application (Right). The red line indicates the comparable outline of the pre-application consultation design.**



**Figure 3.13: Contextual north-east elevation of the alternative design as submitted for pre-application consultation (Left), and revised Proposed Development design for the current application (Right). The red line indicates the comparable outline of the pre-application consultation design.**

The rationale and planning justification for the alteration in height has been provided in the accompanying planning document (HPDC, 2021). In the context of location it has been considered that the subject site is appropriately located in a prominent position within a mature employment/residential area which is in close proximity to existing high-quality public transport services, as guided by national policy.

Potential environmental effects of the initial design were evaluated as part of the pre-application consultation process (including landscape and visual impact, and wind). These effects from the alternative higher design have again been evaluated as part of the EIA process in Chapter 12 Wind, and Chapter 13 Landscape and Visual.

### **3.6.5 Alternative Phasing of Current Development**

The Proposed Development is expected to be constructed in one phase over approximately 24 months.

Given the scale of the Application Site's area, completing the entire development in a number of phases would not be a practical alternative.

This approach to the development's construction provides benefits through efficient environmental management of the single construction phase.

### **3.6.6 Alternative Mitigation Measures**

The mitigation measures identified in the chapters of the EIAR and consolidated in Chapter 16 (Mitigation and Monitoring Measures) are deemed appropriate for the Proposed Development. Limited consideration to alternative mitigation was given as the measures represent commonly employed best-practice for similar developments.

### **3.6.7 'Do-Nothing' Alternative**

Given the specific local area objectives for the Site, if the Application Site was not developed (i.e. the 'Do-Nothing' Alternative), it is assumed that it would remain as an undeveloped vacant site. It is considered that the potential negative environmental impacts would be nil and the current baseline conditions would prevail. The socio-economic benefits of the Proposed Development, however, would not be realised and the need for this Project, in line with the requirements of the County Development Plan and the 'Sandyford Urban Framework Plan' (Appendix 15), would not be met.

Failure to develop the Application Site has a potential negative impact on the regional and local planning objectives, therefore a 'No Project' alternative is not considered to be a reasonable alternative.

Should the Site not be developed in this central location within the Sandyford Business Park it would likely result in residential units being located further from the Business District, and potentially on lands with fewer surrounding services and amenities. This would have negative impacts in terms of spatial pattern and distribution and may add to the exacerbation of traffic and transportation on key commuter routes to the area.

### **3.6.8 Current Design**

Through the design, planning and consultation process the Project team have examined various reasonable alternative designs to the Proposed Development. The current design, technology, location, size and scale of the Proposed Development represent the preferable alternative.

Further to this, the proposed scheme has been designed having regard to the amenities of adjoining sites, providing for appropriate setbacks and lower height built-form elements adjacent to the same with the higher built form elements being provided along the north-eastern site boundary to provide for maximum separation distance.

It is considered that the Proposed Development comprising 428 no. residential units at this application site within Sandyford Industrial Estate and within proximate distance of Dublin City Centre presents an appropriately scaled residential development on appropriately zoned land.

It is considered that the Application Site, being located within close proximity to an employment centre of significant scale and served by multiple public transport links to Dublin city centre, has the capacity to accommodate the residential accommodation and respond to the current housing shortage.

### 3.7 Major Accidents and Disasters

The EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires that an assessment is made to *'the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned'*.

The consideration of major accidents and disasters seeks to assess the relevant accidents and disasters which the Proposed Development is vulnerable to, and the relevant accidents and disasters that the Proposed Development could give rise to.

#### 3.7.1 Design of the Proposed Development

##### Fire

Maurice Johnson & Partners have been appointed as fire safety consultants to advise on the fire safety measures to be incorporated in the Carmanhall Road SHD scheme.

The uses in the development are considered normal hazard fire risks as would be encountered in most developments and do not include any hazards which would be regarded as presenting an exceptional environmental fire hazard.

The fire risk mitigation for the Project comprises all fire safety measures necessary to comply with the requirements of Part B (Fire) of the Second Schedule to the Building Regulations 1997-2018. It is noted that these measures will be validated under the Building Control Act 1990-2007 through the obtaining, in due course, of a statutory Fire Safety Certificate under Part III of the Building Control Regulations 1997-2018 from Dún Laoghaire Rathdown County Council. The safety measures include:

- Provision of fire rated walls and floors to restrict the spread of fire within and between buildings/cores in accordance with relevant design guidance, e.g. Technical Guidance Document B, BS9991 and BS9999. These measures will, in conjunction with the provision of automatic fire suppression, serve to control/limit the size of conflagrations;
- Provision of early warning fire detection and alarm systems to ensure the earliest possible intervention in the event of fire occurrence;
- Use of materials which do not support fire spread with particular reference, inter alia, to internal wall and ceiling linings and external wall cladding; and
- Facilities to assist the Fire Brigade including fire-fighting shafts, fire mains, and external fire hydrants. It is anticipated, having regard to the nature of the proposed uses and the extent of fire-sub-division/compartamentation which will be provided that the quantity of fire-fighting water which would be deployed would be in the lower end of the range of application rates i.e. of the order of 20-35 L/sec.

The design in accordance with the above criteria will ensure that the Proposed Development does not present a significant risk of major accidents and disasters in relation to fire.

### **3.7.2 Construction Phase**

#### **Spills and Potential Pollution Events**

The main potential risk of major accidents and disasters which could result from the Proposed Development during the construction phase has been identified to be pollution incidents (e.g. hydrocarbon spills) to ground and watercourses. Such events have been considered within the EIAR Chapters of 'Land, Soils and Geology' and 'Water' (Chapters 6 and 7, respectively), and appropriate mitigation has been identified, which includes the implementation of a Construction Environmental Management Plan. The assessments in these chapters has determined that with the implementation of appropriate mitigation, which includes best practice construction management, there will be a 'not significant' effect of activities on the surrounding environment.

#### **Fire**

During the construction phase there is potential for fire to occur from vehicle collisions on Site and from damage to or contact with unmapped underground services and utilities, such as the electricity and gas supply networks. Locations of these have been outlined in Chapter 14 Material Assets and the construction works around these services will be governed by relevant health and safety guidance and legislation and the appointed Main Contractor's Construction Management Plan. With this mitigation it is considered that there will therefore be an imperceptible impact to these services and a not significant risk of a major accident to occur as a result.

#### **Interaction with the Public and Roads**

Construction activities will be required, at times, to interact with the public domain and the adjacent road network. During these times there is potential for the activities to result in a road collision or incident with another on-motorised member of the public. These works are required to be carefully planned and appropriate provisions will be identified in the appointed Main Contractor's CMP. These provisions should ensure that potential impacts are imperceptible.

#### **Debris Falls**

The nature of the Proposed Development requires that construction activities are carried out at height, whether that is on scaffolding working platforms or by tower cranes. The Construction Management Plan and associated Construction Health and Safety Management Plan will identify such activities and plan accordingly to ensure that there are no adverse impacts from these works.

#### **Aircraft Collision**

There is an extremely unlikely risk of the structure or cranes colliding with aircraft during the construction phase. The Irish Aviation Authority (IAA) will be notified on the submission of the SHD application to The Board and consultation with the IAA will be carried out prior to construction. All requirements of the IAA will be fully complied with, including with regards to site/structure lighting, crane operation.

#### **Emergency Response**

Health and Safety provisions have been assessed in Chapter 4 (Population and Human Health) of this EIAR. The appointed Main Contractor will be responsible for maintaining an Emergency Response Plan (ERP); this will be documented in the site's Construction Health and Safety Management Plan. The ERP will provide for the foreseeable risks which may occur during the construction phase.

The Construction Health and Safety Management Plan will identify appropriate site personnel who will be qualified as first aiders and fire marshals. Furthermore, appropriate construction staff will be trained in environmental issues and spill response procedures.

### 3.7.3 Operational Phase

#### Fire

The Management Company will be responsible to maintain fire protection equipment and measures during the operational phase of the Proposed Development.

An Evacuation Strategy will be documented within the Residents' Guide which will be provided to all the residents of the Proposed Development. This will be a step-by-step guide of what should be done in the event of a fire. Appropriate safe passage and exit signage will be installed throughout the Proposed Development, and Fire Action Notices will be displayed in high traffic areas to advise on the fire action policy.

Fire Prevention Equipment will be maintained by the Management Company following recommendations of an independent survey. The fire alarm panel will be maintained and serviced in accordance with manufacturer guidelines. It is proposed that each unit will have its own fire alarm system. Dry and wet risers will be maintained in accordance with manufacturer guidelines. And the Proposed Development's sprinklers system will be maintained by a suitably qualified professional and also serviced in accordance with manufacturer guidelines.

Risk Assessment carried out by the Management Company will be carried out by an independent and comprehensive Fire Risk Assessor.

#### Industrial Activities / Seveso

There are no upper or lower tier Seveso establishments within 5 km of the Site. It is considered that there is an imperceptible effect on the Proposed Development from Seveso sites.

#### Flooding

Flooding has the potential to impact the Proposed Development during both the construction and operational phases of the Development. A Flood Risk Assessment (FRA) has been carried out to accompany the SHD application, (AECOM, 2021).

The FRA concludes that all existing information was reviewed regarding the flood risk in the area of the Site and that there was no recorded history of flood events. The Catchment Flood Risk Assessment and Management (CFRAM) fluvial flood risk mapping was considered in the FRA to have the most up to date and reliable estimates of extreme water levels. The risk mapping provides estimated water levels associated with a 1:10 year event (Flood Zone A), 1:100 year event (also Flood Zone A) and 1:1000 year event (Flood Zone B). This confirmed that the site is not currently at risk of fluvial flooding but the Blackthorn Road was predicted to flood during a 1:1000 year flood event.

The FRA notes that available future scenario models including climate change allowances, do not predict an increase in flood extent onto the site. From a review of the topography of Blackthorn Road, the gradient was found to slope away from the site, thereby reducing the potential impact to the site from the 1:1000 year fluvial flood event.

The proposed surface water drainage network (which restricts runoff to rates similar to what a greenfield site in the area would produce), reduces the risk of pluvial flooding on the site and surrounding area, as the current brownfield site does not restrict runoff.

The proposed attenuation storage was designed using a 1 in 100-year return period rainfall event, with a 10% increase in rainfall depth to allow for the impact of climate change. The proposed SUDS measures and restriction of run-off to greenfield run-off rates means there will not be an increase in flood risk as a result of the Proposed Development. In the event of a blockage at the flow control within the stormwater drainage network, flood water will flow away from the building, towards Carmanhall Road.

It is considered that there is an imperceptible impact of flooding during to the Proposed Development.

### **Aircraft Collision**

There is an extremely unlikely risk of the structure or cranes colliding with aircraft during the operational phase. However, similar to the construction phase, the IAA will be consulted on the Proposed Development and all requirements during the operational phase will be fully complied with, including with regards building lighting/beacons, as required.

#### **3.7.4 Do-Nothing Scenario**

If the Proposed Development were not to proceed, the subject site would remain in its existing vacant form and there would be no increase in the risk of major accidents occurring.

#### **3.7.5 Cumulative Effects**

There were no likely risks of a major accident or disaster identified in respect of the Proposed Development, and subsequently there were no cumulative effects identified either.

### **3.8 Decommissioning of the Proposed Development**

Given the permanent nature of the Proposed Development, no plans or provisions are proposed for the future decommissioning of the Site. The Proposed Development will provide for residential units which are envisaged to become permanent features of the Sandyford Business Park.

A Building Life-Cycle Assessment Report has been prepared by Aramark and included in the overall SHD Application. The report describes the building materials proposed for use in the construction of the Proposed Development which have been identified to achieve a durable standard of quality that will not require regular fabric replacement or maintenance outside general day to day care.

The choice of high quality and long-lasting materials, as well as both soft and hardscape in the public, semi-public and private realm will also contribute to lower maintenance costs for future residents and occupiers of the Proposed Development.

### 3.9 References

AECOM. 2021. Stage 3: Planning Application to An Bord Pleanála Flood Risk Assessment.

Aramark. 2021. Building Life-Cycle Assessment Report, Carmanhall Road SHD.

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