Building Life Cycle Report

White Pines East

Project No. A610

29th March 2021

OCSC

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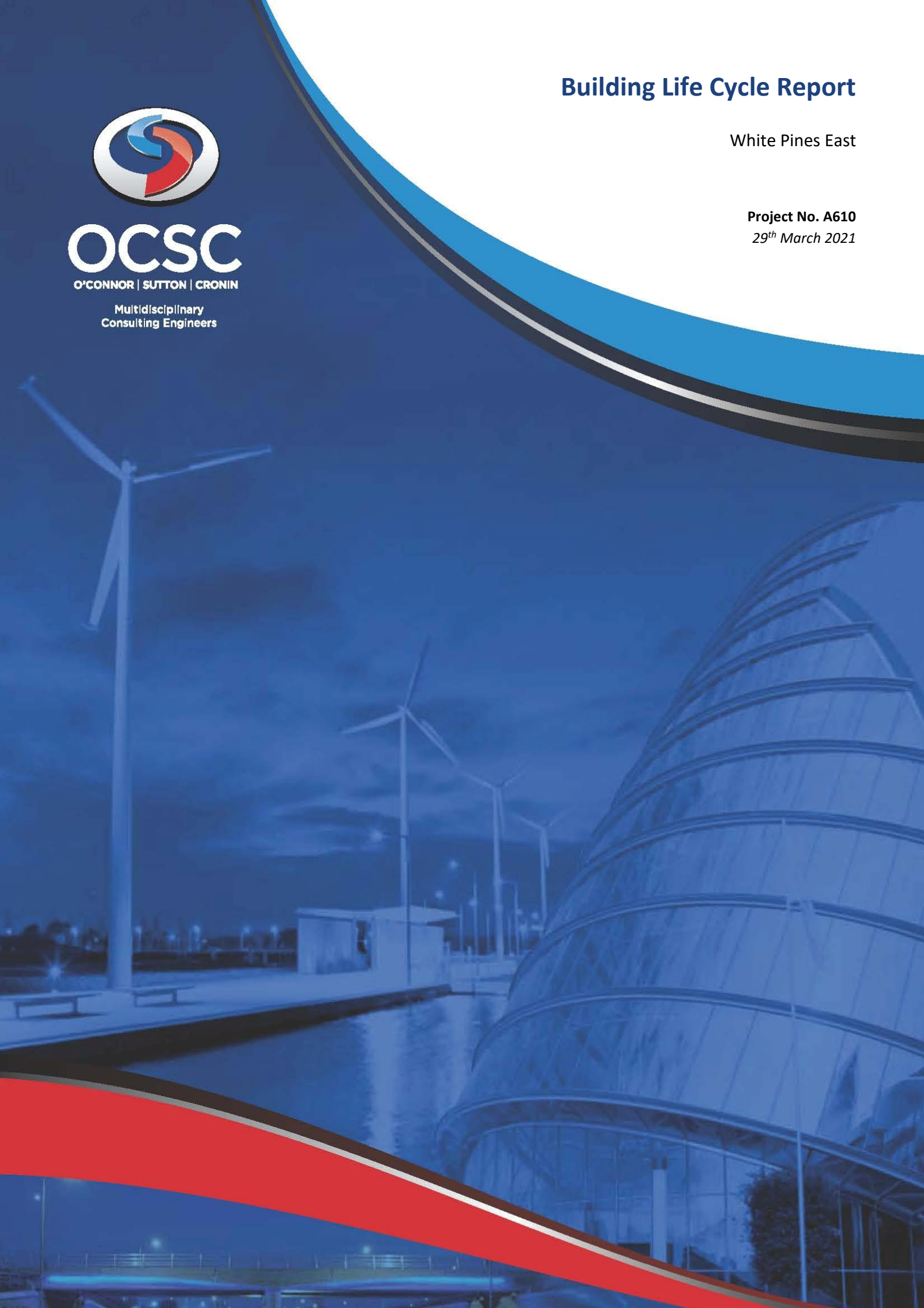
Multidisciplinary
Consulting Engineers



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NOTICE

DOCUMENT CONTROL & HISTORY

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1. INTRODUCTION

The Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018) have outlined the requirement for a building lifecycle report to be produced with the intent to clearly outline the future operation and management of apartment developments and the long-term management and maintenance structures.

Section 6.13 of the Apartment Guidelines 2018 requires that apartment applications shall:

"include a building lifecycle report which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents."

This Building Lifecycle Report document sets out to address the requirements outlined above for the White Pines East development.

As part of Ardstone's commitment to sustainability, this development will be included in their overall Global Real Estate Sustainability Benchmark (GRESB) assessment which will provide further details on the embodied carbon and lifecycle of the development. GRESB assesses and benchmarks the Environmental, Social and Governance (ESG) performance of real assets, providing standardised and validated data to the capital markets.

2. DEVELOPMENT DESCRIPTION

The development will consist of:

- The construction of 241 no. residential units, in 5 no. apartment blocks, ranging in height from 4-6 storeys, and 3 no. three storey duplex block. The development will provide 93 no. 1 Bed and 148 no. 2 bed units, as follows;
    - Block A is a 5 storey block comprising 40 units (20 no. 1 bed units; and 20 no. 2 bed units). Block A includes balconies on southern, northern and western elevations. A dedicated community building space comprising 552sq.m will also be provided on the ground floor of Block A.
    - Block B is a 4 storey block comprising 34 units (18 no. 1 bed units; and 16 no. 2 bed units). Block B includes balconies on southern, southern, western and eastern elevations;
    - Block C is a Part 4 Part 5 storey block comprising 43 units (21 no. 1 bed units; 22 no. 2 bed units) Block C includes balconies on southern, eastern and western elevations. Residential Tenant Amenities comprising c.171sq.m is provided at ground floor level of Block C to serve all residential units, comprising; a reception area, games space, residents lounge and gym space.
    - Block D is a 5 storey block comprising 49 no units (21 no. 1 bed units and 28 no. 2 bed units). Block D includes balconies on southern, western and eastern elevations;
    - Block E is a 6 storey block comprising 47 no units (13 no. 1 bed units and 34 no. 2 bed units). Block E includes balconies on southern, western, eastern and northern elevations;
    - 3 no. 3 storey duplex blocks are provided to the western boundary of the site, comprising 28 no. 2 bed units. Balconies and terrace space is provided to the eastern elevation.
- Provision of 204 no. on street car parking spaces
- Omission of crèche as approved under SDCC Ref. SD14A/0222;
- The main vehicular access to the scheme will be from Stocking Avenue. A second new vehicular access is proposed from White Pines North to the east.
- Provision of 401 no. bicycle parking spaces;
- All other ancillary site development works to facilitate construction, site services, piped infrastructure, ESB sub-stations, plant, public lighting, bin stores, bike stores, boundary treatments and provision of public and private open space including hard and soft landscaping, plant, provision of public and private open space areas comprising hard and

soft landscaping, site services all other associated site excavation, infrastructural and site development works above and below ground.

Figure 1 - Proposed Site Plan

3. ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS

The Client considered the long term running and maintenance costs for future residents from the outset of the design process with a view to managing and minimising unreasonable expenditure on a per residential unit basis. This exercise was informed by, and took account of, learning outcomes from previous residential projects together with a consideration of the changes in standards arising from the new apartment guidelines.

3.1. PROPERTY MANAGEMENT COMPANY AND OWNERS MANAGEMENT COMPANY

As noted within The Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018);

'The Multi-Unit Developments Act, 2011 (MUD Act) sets out the legal requirements regarding the management of apartment developments. In this regard it is advised that when granting permission for such developments planning authorities attach appropriate planning conditions that require:

- *Compliance with the MUD Act,*
- *Establishment of an Owners Management Company (OMC) and:*
- *Establishment and ongoing maintenance of a sinking fund commensurate with the facilities in a development that require ongoing maintenance and renewal.'*

A Property Management Company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the maintenance and running costs of the development's common areas are kept within the agreed annual operational budget. The Property Management Company will enter into a contract directly with the Owner's Management Company for the ongoing management of the completed development (it is intended that this contract will be for a maximum period of c.3 years and in the form prescribed by the PSRA).

The Property Management Company will also have the following responsibilities for the development once completed:

- Timely formation of an Owners Management Company – which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members;
- Preparation of annual service charge budget for the development's common areas;

- Apportioning of the annual operational charges in line with the MUD Act (equitable division);
- Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act - including completion of Developer OMC Agreement and transfer of the common areas;
- Transfer of documentation in line with Schedule 3 of the MUD Act;
- Estate Management / Third Party Contractors Procurement and Management;
- OMC Reporting / Accounting Services /Corporate Services /Insurance Management;
- After Hours Services and Staff Administration.

3.1.1 Service Charge Budget

The Property Management Company will have a number of key responsibilities most notably, the compiling of the service charge budget for the development for agreement with the Owners Management Company.

In accordance with the Multi Unit Developments Act 2011 ("MUD" Act), the service charge budget typically covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/electrical lifts/ life safety systems, security, property management fee, etc, to the development common areas.

This service charge budget also includes an allowance for a Sinking Fund and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared by for the OMC.

The BIF report once adopted by the Owners Management Company, determines an adequate estimated annual cost provision requirement based on the needs of the development over a 30-year cycle period. The BIF report will identify those works which are necessary to maintain, repair, and enhance the premises over the 30-year life cycle period, as required by the Multi Unit Development Act 2011. In line with the requirements of the MUD Act, the members of the OMC will determine and agree each year at a General Meeting of the members, the contribution to be made to the Sinking Fund, having regard to the BIF report produced.

Appendix A outlines what items would typically be included in the Building Investment Fund calculation.

4. MEASURES TO MANAGE AND REDUCE COSTS

4.1. BUILDING DESIGN

The proposed residential buildings are designed in accordance with the Building Regulations, in particular Part D 'Materials and Workmanship', which includes all elements of the construction. The Design Principles and Specification are applied to both the residential units and the communal / amenity parts of the development.

As outlined in 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018)' to have regard for quantitative performance approaches to daylight provisions 'outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision'

Careful consideration was given to the provision of natural daylight within the units. Daylight analysis undertaken by OCSC confirms that the majority of all units exceed the recommendations outlined within the BRE Guide in respect to internal daylight levels, thus reducing the reliance on artificial lighting.

Figure 2 – Proposed Building Design

4.2. TREATMENTS, MATERIALS AND FINISHES

In selecting the materials to be used for the development consideration has been given to Building Regulations and includes reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'. The materials proposed by JFA Architects are modest, considerate and robust and are in keeping with the surrounding environment. The materials have been selected on the basis of durability, resilience, longevity, and low maintenance.

Figure 3 – Durable Building Materials with Low Maintenance Requirements

The following table outlines the proposed treatments, materials and finishes to be used across the White Pines East development.

Item	Description	Benefit
External Walls	Brick/sand and cement render on block outer leaf, 50mm cavity, Tyvek FireCurb breather membrane, 110mm Rockwool Duo Slab, Wraptite external weathering membrane, 12.5mm cement particle board, 100mm SFS system inner leaf with full fill Rockwool RWA 45 insulation, VCL, 15mm Gypsum plasterboard.	Brickwork finishes require low maintenance and have a long lifespan.
Windows & Doors	Powder coated aluclad window and door systems. PPC aluminium curtain wall, all window/door inserts to be PPC aluminium.	Aluminium is a durable and low maintenance material with a long lifespan.
Floors	Timber laminate to the entire apartment, bar bathroom pods. Floor tile to the bathrooms/ensuites. Floor tile to the staircore and common corridor from ground to first floor. Carpet tile to the staircore and common corridors from first floor up.	Floor finishes selected require low maintenance with more resilient materials selected for high traffic areas.
Roof	Roof to contain a mixture of traditional roof coverings and green roof system. Green roof system to consist of a vegetation layer, suitable substrate, filtration, drainage channels and barrier sheets on top of a concrete deck.	A green roof provides attenuation to storm water run-off, increased bio-diversity as well as increased thermal performance.
Balconies & Balustrades	Cantilevered steel frame balconies fixed on thermally broken connecter. 20mm Duradeck Resist decking boards PPC aluminium soffit and fascia. Balustrades to be 50mm x 10mm painted mild steel flats. Handrails to be 50mm Dia. solid timber American Red Oak.	Thermally broken connector reduces heat loss at the balcony. Materials selected require low maintenance.
Internal Finishes	Internal walls to be 12.5mm gypsum plasterboard either side of steel stud. Standard gypsum-based ceiling to the apartments. Gypsum based moisture board to the bathroom and kitchen ceilings. Internal doors to be flush panel sold core timber doors with hardwood lippings. Hardwood timber skirting to communal areas, softwood timber skirting to apartments.	Internal finishes selected require low maintenance and do not require regular replacement.

4.3. LANDSCAPING

Throughout the design process Mitchell + Associates Landscape Architects have ensured that preservation and robustness were key considerations when selecting materials for the landscaped elements of the development. For landscaped areas to remain inviting and utilised by occupants throughout the life expectancy of the development, durability and low maintenance are key criteria.

Item	Measure Description	Benefit
Paving and Decking Materials	Use of robust, high quality paving and decking materials, with robust and proven details to be durable for bikes, play etc.	Ensure longevity and require no / low on-going maintenance.
Site Layout & Landscaping Design	High quality landscaping both hard surface (for the cycle /car parking and pavements) and soft landscaping with planting and trees. Where applicable existing landscaping features to be retained.	Ample room for cycles and pedestrians to promote forms of transport other than by car.
Materials	Sustainable, robust materials, with high slip resistance to be used for paving. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.	Robust materials and elements reduce the frequency of required repair and maintenance.
Selective plant and tree species	The shrubs and tree species selected will be native and adaptive and suitable to the Irish climate.	Reduced requirement for irrigation. The plants and trees will thrive in windy and dry conditions and will look well all year round. No need for continuous replacements of the planting and trees. The plant and tree species are pollinator friendly and chosen in line with the All-Ireland Pollinator Plan 2015-2020.

4.4. WASTE MANAGEMENT

AWN Consulting have set out the following measures in relation to waste management which will be utilised within the scheme and will benefit the future residents.

Measure	Description	Benefit
Construction & Demolition Waste Management Plan	This application is accompanied by a Construction & Demolition Waste Management Plan prepared by AWN Consulting.	The Plan demonstrates how the scheme will comply with national, regional, and local waste legislation along with best practice.
Operational Waste Management Plan	This application is accompanied by an Operational Waste Management Plan prepared by AWN Consulting.	The Plan demonstrates how the scheme has been designed to comply with national regional, and local waste legislation, waste bye-laws, along with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Inclusion of centralised communal waste storage areas for apartments and individual waste storage areas for the mews, with enough space to accommodate weekly storage of bins for dry mixed recyclable, organic waste and mixed non-recyclable waste. Glass will also be provided for in shared WSAs.	Easily accessible by all residents, facilities management personnel and the waste contractor(s), minimises potential littering of the scheme, reduce potential waste charges and does not limit waste contractor selection.
	Domestic waste management strategy will consist of: dry mixed recyclable, glass, mixed non-recyclable waste and organic waste segregation.	Helps reduce potential waste charges and does not limit waste contractor selection.
	Security restricted waste storage rooms (Apartments).	Reduce potential for fly tipping by residents and non-residents.
	Well signed waste storage rooms and waste receptacles.	Help reduce potential cross contamination of waste and reduce waste charges.
Composting	Organic waste receptacles to be provided in the communal waste storage areas. Residents will provide their own organic waste receptacles.	Helps reduce potential waste charges and compliance with national policy and legislation regarding segregation of biodegradable waste.

4.5. HUMAN HEALTH AND WELLBEING

The development has been designed with the health and wellbeing of the user in mind. The design team considered the quality of the shared living spaces and the importance of natural daylight by providing large glazed windows.

Special emphasis will be placed on materials finishes with a low VOC content further enhancing the indoor air quality of the units.

In addition, all units will comply with the accessibility requirements as required building regulations and the scheme is designed to incorporate passive surveillance of communal areas.

Another positive factor in the health and wellbeing of the scheme are the communal amenity spaces. These areas will provide spaces for residents to gather, to relax, to work and to exercise which will foster a sense of community.

Figure 4 – Proposed Communal Amenity Spaces

4.6. ENERGY AND CARBON EMISSIONS

This section sets out various energy conservation measures which have been incorporated into the design of the development to reduce both the maintenance requirements and operational costs for future residents of the scheme.

The proposed development will comply with Part L 2019 (NZEB). As part of the development's efforts to further reduce energy consumption, the project is targeting an A2/A3 BER (Building Energy Rating) throughout. Extensive work has been carried out to develop a balanced design approach to achieve these onerous targets with a number of energy efficient features being incorporated into the design from the early stages.

4.6.1. ENERGY EFFICIENT DESIGN

The design of the development follows the Energy Hierarchy Plan which aims to:

- First, reduce energy demand by improving the building's thermal envelope, increasing air tightness, improving thermal transmittance and applying passive design techniques.
- The second step is to utilise energy in the most efficient way through the selection and installation of energy efficient plant and equipment.
- The final step is to introduce energy from renewable sources to reduce the burden on fossil fuels.

The table below outlines the elements (based on passive and active measures) that aid in the reduction of energy consumption, carbon emissions and cost throughout the building lifecycle. The table also provides information to be used in the Dwelling Energy Assessment Procedure (DEAP) assessment for each unit in the development to show compliance with the Nearly Zero Energy Building (NZEB) criteria.

Measures	Description	Benefit
High Performance Construction Fabric	The construction U-values being analysed for each unit within the development is outlined in the building regulations Technical Guidance Document – Part L (2019). Current U-value Targets: (W/m².k) • Window: 1.40 (g-value ≥0.63) • Door: 1.40 • External Wall: 0.18 • Roof: 0.18 • Ground Contact/ Exposed Floor: 0.18 High-performance building fabric elements have been selected in order to minimise unnecessary heat loss from the internal environment. During design, a number of passive designs solutions have been considered for implementation throughout. The size of the windows have been optimised to maximise daylight in order to reduce dependence on artificial lighting while selecting the most appropriate glazing G-value to minimise unnecessary solar gains during the summer months and reduce the risk of dwelling overheating issues in accordance with CIBSE TM59 criteria. The window design has also been carefully designed to provide adequate openings to reduce the risk of overheating during the warm summer months. In addition to the reduction in energy consumption and associated carbon emissions for space heating and ventilation through a high-performance fabric, high efficiency heating systems are being proposed for use throughout the development. This has a net effect of further reducing embodied energy consumption associated with the wasteful use of fossil fuels, as well as the reduced input now required from the national electricity grid and from fossil fuel sources.	Minimising heat losses through the buildings fabric as well as a lower then required air permeability rate, helps to ensure lower energy consumption rates and associated carbon emissions are achieved throughout the year. Reduces overall cost of heating for the end user.

Air Tightness Construction	The building will be designed to ensure it will achieve compliance and also exceed the air tightness requirements outlined in the Part L (2019) TGD document. The current proposal for air tightness in the Part L document is set to a maximum value of 5.0 $m^3/hr/m^2$ @50Pa. The development will aim to achieve a minimum air tightness rate of 3.0 $m^3/hr/m^2$ @ 50Pa (or 0.15 ach infiltration equivalent) per dwelling.	Minimising heat losses through the building fabric, in addition to an increased air tightness level, will reduce space heating requirements. This reduces emitter sizes and inevitably the energy and carbon footprint of the development.
Thermal Bridging	The limitation of thermal bridging will be achieved in accordance with guidance under Section 1.3.3 and Appendix D within the Technical Guidance Document Part L (2019) regulations. After the key junctions are identified, the transmission heat loss coefficient (Y factor) can be calculated using Psi values which are based on as-built construction details as well as confirming no risk of surface condensation. In accordance with Part L (2019), the façade junctions will be designed to achieve a Y factor less than 0.05 $W/m^2.K$.	A good thermal bridging factor will aid in minimising heat losses at junctions between construction elements, thus further lowering energy consumption and carbon emission rates. Good thermal bridging design will also eliminate the risk of surface condensation, contributing to a healthy internal environment.
Natural Daylight & Artificial Lighting	Provision for natural daylight in modern buildings helps to create a better internal environment for occupants helping to assist in the well-being of the inhabitants. Daylight can also represent an energy source through the reduction in the reliance on artificial lighting. The provision of higher levels of glazing maximises the use of natural daylight to help further enhance visual comfort, without compromising thermal performance. This will require further analysis to ensure the requirements of CIBSE TM59 are also adhered to in relation to overheating criteria. All light fittings are to be based on LED type (A+ Rated bulb) located throughout each space, such as bedroom, lobby, living/dining etc. A significant reduction in electrical energy usage will be achievable through the use of high efficiency fixtures.	Enhance indoor environment quality through the maximisation of natural daylight. Reducing electrical load whilst also maximising internal comfort will aid in reducing the overall energy usage and carbon footprint of the development.

Exhaust Air Heat Pump (EAHP) System	Exhaust air heat pumps collect warm air as it leaves a building via the ventilation system and then reuses the heat that would otherwise be lost to the outside environment to heat water stored in a cylinder. Exhaust air heat pumps operate on a similar basis to other heat pumps, such as air source heat pumps and are also suitable for providing the space heating and hot water requirements for residential dwellings. EAHPs are also highly efficient systems with efficiencies ≥500% often achievable.	The use of heat pump technology allows for the use of a highly efficient system which can generate both space heating and DHW for use within each dwelling. No central energy centre required with this option as each apartment contains all necessary equipment.
Mechanical Ventilation	Each apartment is to be fitted with a high efficiency balanced mechanical ventilation system in order to sufficiently ventilate each dwelling space. A 'whole house extract ventilation system' (MEV), operates by extracting warm, stale air from dwelling wet-rooms, and re-directs the embodied energy to produce hot water for both space heating and DHW production. The specific fan power of the mechanical ventilation system is to be selected upon achieving a SFP rating of 0.7 (W/l/s) or better.	Heat recovered via exhaust air from wet rooms allow for a greater reduction in energy requirements, thus reducing the space heating requirements. This in turn increases overall heating plant performance. The proposed system increases occupancy satisfaction rates by ensuring fresh, clean air is introduced at a steady rate and minimises dust/pollutants.
Hot Water System & Appliances	Low flow sanitary fixtures (≤6 ltrs/min) to be specified throughout. All hot water taps, including the shower head fittings, are to reach a maximum flow of 6 litres per minute, to allow for the conservation of water use as well as reducing energy used to heat hot water.	Through the restriction of hot water usage, demands on the heating plant (EAHP) are reduced. As a result, equipment size can also reduce. This reduces the cost of utility bills to the tenant by also reducing equipment operating hours.
Renewable Obligations	The Exhaust Air Heat Pumps (EAHP) are being utilised as part of the development's strategy to achieve compliance with Part L (2019) renewable obligations. The building regulations state that 20% of the primary energy delivered to a dwelling must be obtained from renewable energy technologies. EAHP systems are classified as renewable technologies under Part L (2019).	EAHP reduces the reliance on on-grid electricity as well as resulting in lower running costs for the end user. A reduction in energy requirements as well as the development's carbon footprint will be achieved.

4.6.2. NEARLY ZERO ENERGY BUILDING STANDARD (NZEB)

The NZEB method of assessment is based on the Technical Guidance Document (TGD) Part L (2019) – Conservative of Fuel and Energy. This document sets out the minimum energy performance requirement for buildings required to achieve the Nearly Zero Energy Buildings standard.

The Part L (2019) document states that:
"*Any new residential new building should be designed and constructed so as to ensure that the energy performance of the building is such as to limit the amount of energy required for the operation of the building and the amount of carbon dioxide (CO_2) emissions associated with this energy use insofar as is reasonably practicable*".

The Energy Performance of Buildings Directive (EPBD) set out targets to be achieved by European countries in relation to energy conservation. For new dwellings, the requirements of the above should be met by:
"*providing that, the nearly zero or very low amount of energy required is covered to a very significant extent by energy from renewable sources including energy from renewable sources produced on-site or nearby*"

As a result of the analysis carried out on the proposed development, it can be concluded that, all units within the proposed development has been shown to achieved Part L (2019) compliance with respect to Energy, Carbon and Renewable performance requirements.

4.7. TRANSPORT AND ACCESSIBILITY

4.7.1. ACCESS TO PUBLIC TRANSPORT

As identified in the "Existing Public Transportation Linkages" diagram below, it is evident the location of the proposed development benefits from the provision of local bus services.

In terms of local bus services, both the 15 and 15b Dublin bus routes operate daily and offer frequent services (i.e. every 10-15 minutes at peak times) along Stocking Avenue (c.50m from the subject site).

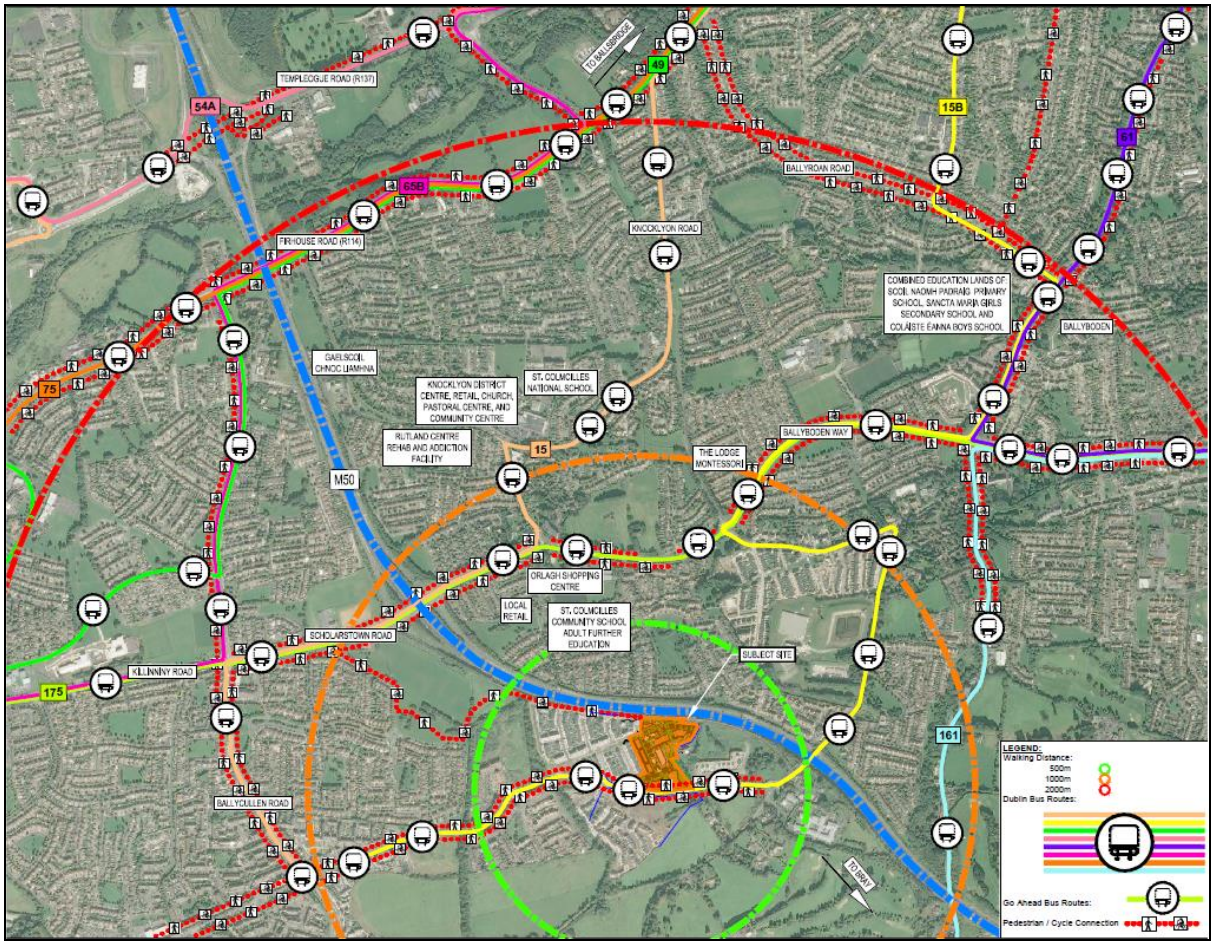

Figure 5 – Existing Public Transport Linkages
(source: DBFL Existing Public Transport Linkage Drawing)

It is anticipated the NTA's emerging BusConnects proposals offer the opportunity to further enhance the accessibility to public transport in the area. Under the BusConnects proposals, the following routes will serve Ballycullen and the proposed development as illustrated in the figure below.

Figure 6 – Proposed BusConnects Routes
(source: DBFL Traffic and Transport Assessment Report)

4.7.2. CYCLE PARKING, CAR SHARING AND E-CHARGE FACILITIES

The subject development proposes a total of 204 no. car parking spaces;

- 10 no. car parking spaces for the community centre.
- 194 no. car parking spaces for the apartment units (241 Build to Rent units).
    - [Including 3 no. car parking spaces will be provided for car-share, and 11 no. will be provided as mobility impaired parking spaces.]

The development will also provide 422 no. cycle parking spaces, 362 of these proposed as long term parking for the residents and an additional 60 proposed as short term stay on the surface.

5. CONCLUSION

The proposed development will be constructed to the highest standards and in compliance with all relevant guidelines and policies which seek to provide for energy efficient and liveable multi-unit developments that will reduce maintenance costs for residents over time.

In consideration of the above we trust that South Dublin County Council and An Bord Pleanála will be satisfied with the details of this Report in accordance with Section 6.13 of the Apartment Guidelines, 2018.

6. APPENDIX A – ITEMS INCLUDED IN TYPICAL BIF CALCULATION

The table below outlines what items would typically be included in the Building Investment Fund calculation.

Ref	Element	Life Expectancy
1.00	**Roof**	
1.01	Roof covering incl. insulation to main roofs/overhaul to green roofs	18
1.02	Parapets	18
1.03	Fascia/Soffits	18
1.04	Roof access hatches	25
1.05	Specialist roof systems - fall arrest, etc.	25
1.06	Waterproofing details to paved areas	12
2.00	**Elevations**	
2.01	Decorate rendered panels (TBC)	25
2.02	Exit/Entrance doors	25
2.03	Rainwater goods	20
2.04	External fixings	5
2.05	Balcony floor finishes	25
2.06	Balcony handrails	15
3.00	**Staircores & Lobbies**	
3.01	Ceilings	7
3.02	Walls	7
3.03	Joinery	7
3.04	Fire Doors	25
3.05	Carpet tile	15
3.06	Entrance mats	10
3.07	Nosings	12
3.08	Floor Tiles	20
3.09	Furniture & Equipment	18
4	**External & Car Parks**	
4.01	Parking spaces and numbering painting	7
4.02	Bin Store, Plant room doors, ironmongery etc	15
4.03	Bike Stands	12
5.00	**M&E Services**	
5.01	Relamping (common areas)	7
5.02	Internal light fittings	18
5.03	External light fittings	18

5.04	Smoke detector heads (common areas)	18
5.05	Manual break glass units	18
5.06	Fire alarm panel	18
5.07	Lift car and controls incl. lift equipment	25
5.08	AOVs	25
5.09	Security access controls	15
5.1	External mains water connection	20
5.11	Electrical mains and sub-mains distribution	20
5.12	Emergency lighting	20
5.13	Waste pipes, stacks, vents etc	20
6.00	**Exterior**	
6.01	External boundary treatments	60
6.02	External signage	18
6.03	Landscaping	18
6.04	CCTV provision	15
6.05	External handrails and balustrades	18

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