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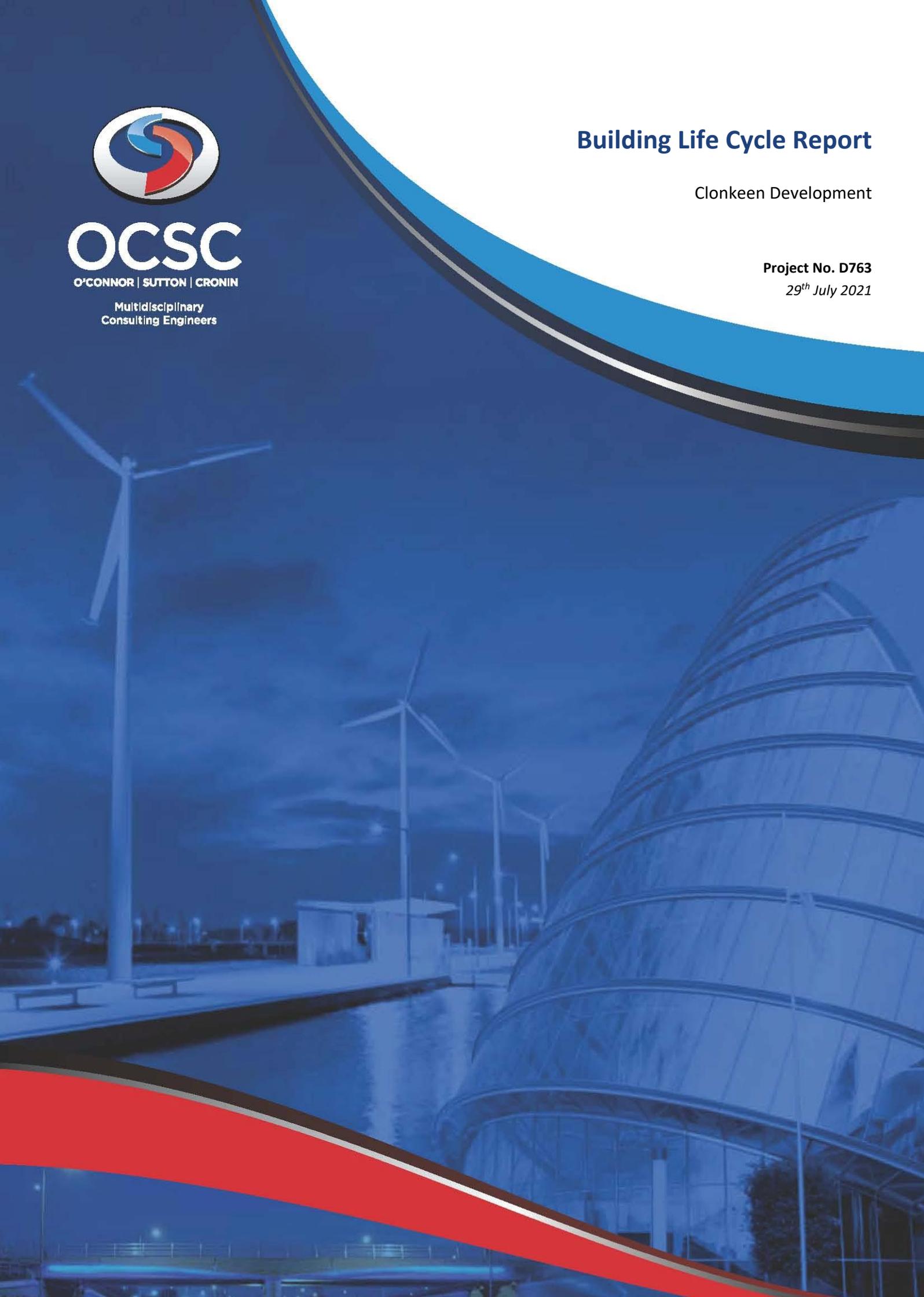
Multidisciplinary  
Consulting Engineers

# Building Life Cycle Report

Clonkeen Development

Project No. D763

29<sup>th</sup> July 2021



# Building Life Cycle Report



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## DOCUMENT CONTROL & HISTORY

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## 1. INTRODUCTION

The Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (December 2020) 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 2020 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 Clonkeen development.

As part of Clonkeen Investments DAC 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

Clonkeen Investments DAC intend to apply to An Bord Pleanála (the Board) for permission for a Strategic Housing Development with a total application site area of c. 3.3 ha, on a site located at Lands Adjoining Clonkeen College, Clonkeen Road, Blackrock, Co. Dublin. The development, with a total gross floor area of c 33,851 sq m, will provide 299 no. residential units and a 1 no. storey 353 sq m childcare facility with dedicated play area 231 sq m. The development will consist of 18 no. ground floor 3 bedroom duplex apartments and 18 no. 2 bedroom apartments above and 12 no. ground floor 2 bedroom apartments with 12 no. 3 bedroom duplex apartments above. The 60 no. duplex units are arranged in 6 no. three storey blocks. The development will also consist of 239 no. apartment units (111 no. 1 bedroom apartments, 120 no. 2 bedroom apartments and 8 no. 3 bed apartments) arranged in 4 no. 6 storey blocks over 1 no. storey basement; public open space, communal open space and private open space (including all balconies, terraces and individual unit gardens at all levels); 614 sq m communal resident facilities including concierge and welcome area (195 sq m), residents' flexible work facility (219 sq m), residents' lounge (100 sq m) and residents' gym area (100 sq m).

The development will also provide for the demolition of the 2 no. storey office building ('St. Helen's', Meadow Vale - 470 sq m) to facilitate new vehicular, pedestrian and cyclist access to the site, to the north of the proposed development via Meadow Vale.

The development will also include the provision of 2 no. designated play areas; internal roads and pathways; bin stores; 248 no. car parking spaces, including 167 no. at basement level and 2 no. shared vehicle (GoCar) spaces, 388 no. bicycle parking spaces, and 10 no. motorcycle parking spaces at basement and surface level; hard and soft landscaping; plant; boundary treatments including the repair and replacement of some existing boundary treatments; the provision of new surface water and foul drainage pipes and any required pipe diversion works or build over works; internal foul pumping station; a new internal access road and paths; changes in level; services provision and related pipework, ducting and cabling; electric vehicle charging points; 4 no. stormwater attenuation tanks; 1 no. ESB substation; photovoltaic panels; SUDS including green roof provision; signage; provision for future pedestrian access to Monaloe Park to the east of the development, including the provision of a pedestrian bridge, extending over the drainage ditch; public lighting and all site development and excavation works above and below ground. The application contains a statement setting out how the proposal will be consistent with the objectives of the Dún Laoghaire-Rathdown County Development Plan 2016-2022. The application contains a statement indicating why permission should be granted

for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act 2000, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land.

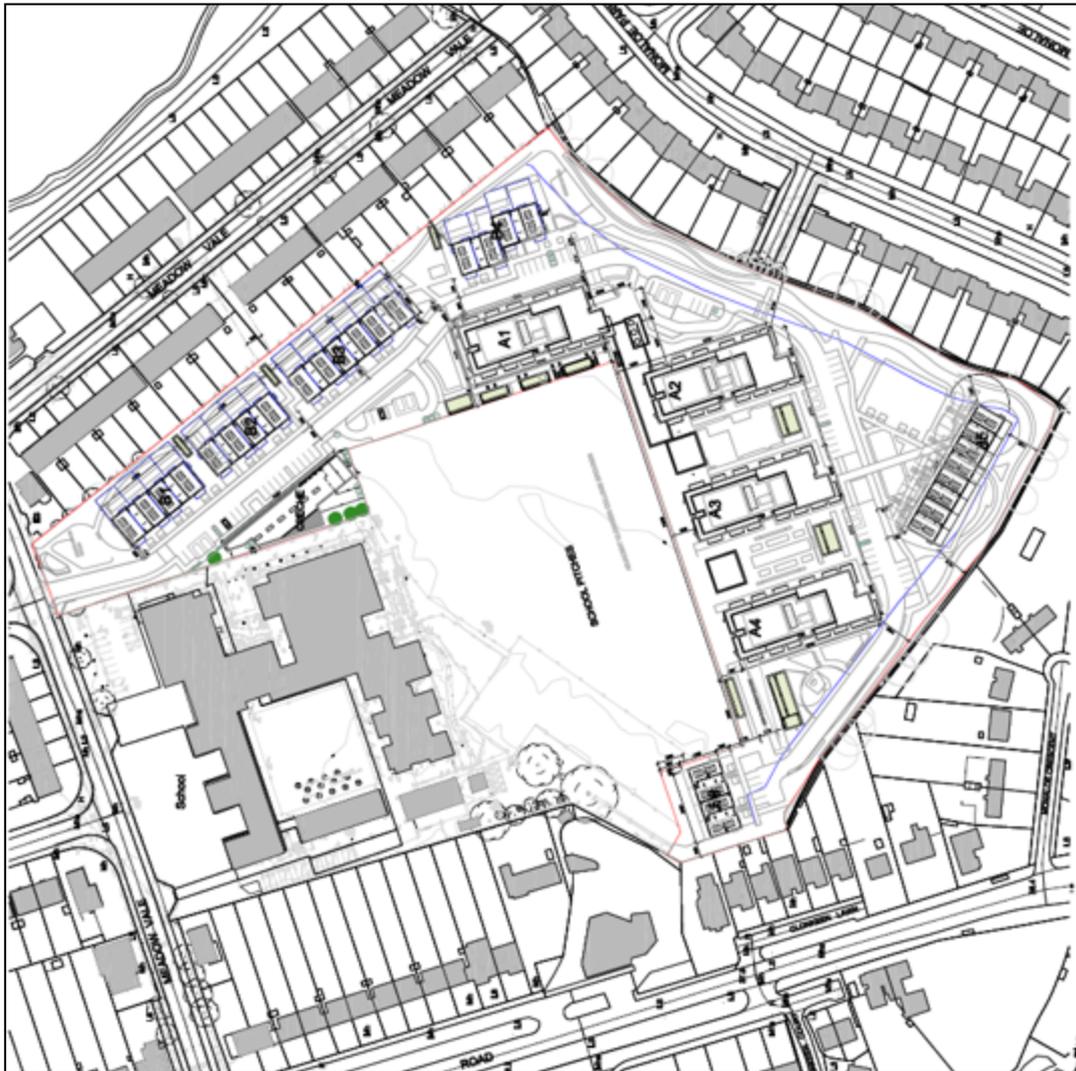


Figure 1 - Proposed Site Plan

### 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 (December 2020);

*'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 (December 2020)' 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 Scott Tallon Walker 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 Clonkeen development.

Item	Description	Benefit
<b>External Walls</b>	Type 01 - Krender Coloured Render on block outer leaf, 250mm cavity, with, 200mm Kingspan Insulation on block / concrete inner leaf with 12.5mm Gypsum plasterboard on dabs.  Type 02 -Brick outer leaf, 250mm cavity, with, 200mm Kingspan Insulation on block / concrete inner leaf with 12.5mm Gypsum plasterboard on dabs.	Self-Finished render finishes require low maintenance  Brickwork finishes require low maintenance and have a long lifespan.
<b>Windows &amp; Doors</b>	Powder coated Aluminium 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.
<b>Floors</b>	Timber laminate to the entire apartment, bar bathroom areas.  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.
<b>Roof</b>	Roof to contain a mixture of traditional roof coverings and green roof system.  Green roof system on apartment block 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.
<b>Balconies &amp; Balustrades</b>	Cantilevered steel frame powder coated balconies fixed on thermally broken connector.  20mm Duradeck Resist decking boards PPC aluminium soffit and fascia.  Balustrades to be 50mm x 10mm painted mild steel flats with 50x10mm handrail	Thermally broken connector reduces heat loss at the balcony.  Materials selected require low maintenance.
<b>Internal Finishes</b>	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 finishes selected require low maintenance and do not require regular replacement.

	Internal doors to be flush panel solid core timber doors with hardwood lippings. Hardwood timber skirting to communal areas, softwood timber skirting to apartments.	
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#### 4.3. LANDSCAPING

Throughout the design process Doyle & O'Troithigh 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
<b>Paving and Decking Materials</b>	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.
<b>Site Layout &amp; Landscaping Design</b>	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 sustainable mobility.
<b>Materials</b>	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.
<b>Selective plant and tree species</b>	The shrubs and tree species selected will be native/naturalised and adaptive and suitable to the Irish climate and site environs.	Through the selections of native and naturalised species which are suitable to the site environs this allows for greater establishment and development reducing failures and the requirement for replacements it also helps to reduce maintenance. The plants and tree species selected 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
<b>Construction &amp; Demolition Waste Management Plan</b>	This application is accompanied by a Construction & Demolition Waste Management Plan prepared by AWN Consulting.	The Plan demonstrates how the scheme will comply with EU, national, and local waste legislation along with best practice.
<b>Operational Waste Management Plan</b>	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 EU, national, and local waste legislation, waste bye-laws, along with best practice.
<b>Storage of Non-Recyclable Waste and Recyclable Household Waste</b>	Inclusion of centralised communal waste storage areas (WSA) for apartments and duplex units (Block B1-B4) and individual waste storage areas for the duplex units in Block B5 & B6 and the Childcare Facility, 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 and childcare facility staff, 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.
	Commercial (Childcare Facility) waste management strategy will consist of: dry mixed recyclable, glass, mixed non-recyclable waste and organic waste segregation.	
	Security restricted shared WSAs	Reduce potential for fly tipping by residents and non-residents.
	Well signed shared WSAs and waste receptacles.	Help reduce potential cross contamination of waste and reduce waste charges.
<b>Composting</b>	Organic waste receptacles to be provided in the shared WSAs. Residents and Childcare Facility 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
<p><b>High Performance Construction Fabric</b></p>	<p>The construction U-values being analysed for each unit within the development is outlined in the building regulations Technical Guidance Document – Part L (2019).</p> <p>Current U-value Targets: (W/m<sup>2</sup>.k)</p> <ul style="list-style-type: none"> <li>• Window: 1.40 (g-value ≥0.63)</li> <li>• Door: 1.40</li> <li>• External Wall: 0.18</li> <li>• Roof: 0.18</li> <li>• Ground Contact/ Exposed Floor: 0.18</li> </ul> <p>High-performance building fabric elements have been selected in order to minimise unnecessary heat loss from the internal environment.</p> <p>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.</p> <p>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.</p>	<p>Minimising heat losses through the buildings fabric as well as a lower than required air permeability rate, helps to ensure lower energy consumption rates and associated carbon emissions are achieved throughout the year.</p> <p>Reduces overall cost of heating for the end user.</p>

<p><b>Air Tightness Construction</b></p>	<p>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.</p> <p>The current proposal for air tightness in the Part L document is set to a maximum value of 5.0 m<sup>3</sup>/hr/m<sup>2</sup> @50Pa. The development will aim to achieve a minimum air tightness rate of 3.0 m<sup>3</sup>/hr/m<sup>2</sup> @ 50Pa (or 0.15 ach infiltration equivalent) per dwelling.</p>	<p>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.</p>
<p><b>Thermal Bridging</b></p>	<p>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.</p> <p>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.</p> <p>In accordance with Part L (2019), the façade junctions will be designed to achieve a Y factor less than or equal to 0.08 W/m<sup>2</sup>.K.</p>	<p>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.</p> <p>Good thermal bridging design will also eliminate the risk of surface condensation, contributing to a healthy internal environment.</p>
<p><b>Natural Daylight &amp; Artificial Lighting</b></p>	<p>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.</p> <p>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.</p> <p>All light fittings are to be based on LED type (A+ Rated lamp) 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.</p>	<p>Enhance indoor environment quality through the maximisation of natural daylight.</p> <p>Reducing electrical load whilst also maximising internal comfort will aid in reducing the overall energy usage and carbon footprint of the development.</p>

<p><b>Exhaust Air Heat Pump (EAHP) System or Air Source Heat Pump (ASHP)</b></p>	<p>The proposed development will utilise Exhaust air heat pumps or air source heat pumps to provide space heating and domestic hot water requirements. EAHPs 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 air source heat pumps which collect outside air as opposed to exhaust air. Both are suitable for providing the space heating and hot water requirements for residential dwellings. EAHPs are also highly efficient systems with efficiencies <math>\geq 500\%</math> often achievable. Whilst an ASHP will have efficiencies of <math>\geq 300-500\%</math>.</p>	<p>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.</p>
<p><b>Mechanical Ventilation</b></p>	<p>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.</p>	<p>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.</p>
<p><b>Hot Water System &amp; Appliances</b></p>	<p>Low flow sanitary fixtures (<math>\leq 6</math> 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.</p>	<p>Through the restriction of hot water usage, demands on the heating plant 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.</p>
<p><b>Renewable Obligations</b></p>	<p>The Exhaust Air Heat Pumps (EAHP) and/or Air Source Heat Pumps 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).</p>	<p>EAHP/ASHP 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.</p>

#### **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<sub>2</sub>) 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.



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, a new local bus route L26 will operate within the proximity of the subject development, and high frequency spine routes E1 and E2 will also be available within a 15 minute walk.

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

The proposed development provides 388 no. bicycle parking spaces which will encourage sustainable travel to and from the site.

The proposed development will provide 2 no. car parking spaces designated for car-share (Go Car), as well as 6 no. mobility impaired spaces. Furthermore, 25 no. parking spaces will be provided with e-charging points.

## 5. CONCLUSION

The proposed Clonkeen 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 Dun Laoghaire Rathdown 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, 2020.

## 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
<b>1.00</b>	<b>Roof</b>	
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
<b>2.00</b>	<b>Elevations</b>	
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
<b>3.00</b>	<b>Staircores &amp; Lobbies</b>	
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
<b>4</b>	<b>External &amp; Car Parks</b>	
4.01	Parking spaces and numbering painting	18
4.02	Bin Store, Plant room doors, ironmongery etc	15
4.03	Bike Stands	12
<b>5.00</b>	<b>M&amp;E Services</b>	
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
<b>6.00</b>	<b>Exterior</b>	
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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