



BUILDING LIFECYCLE REPORT

Whitehaven, Northwood Avenue, Santry, Dublin 9

On behalf of

Cosgrave Developments Unlimited Company

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Grand Canal Street Lower, Dublin, D02 DK23

Ref: 14030.9

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INTRODUCTION

This Building Lifecycle Report has been prepared in support of a full planning application by Cosgrave Developments Unlimited Company (the applicant) submitted to An Bord Pleanála for a residential development at Whitehaven, Northwood Avenue, Santry, Dublin 9.

DESCRIPTION OF THE PROPOSED DEVELOPMENT-

A detailed development description is set out in the Planning Report and Statement of Consistency prepared by RPS accompanying this SHD application package. The proposed development will generally consist of a residential development consisting of 255 no. units and a childcare facility together with car and bicycle parking at basement and surface levels, open spaces, play areas, associated servicing arrangements and all site works

The site of the proposed development is located to the north of Northwood Avenue, the main road through "Santry Demesne". The demesne lands were developed over the last decades and now comprise residential, office, retail and recreation buildings, with large public spaces, parks and lakes, now generally known collectively as *Northwood*. The site is located towards the western side of the demesne lands between Swift Square office development and Sport Surgery Clinic.

The nearby apartment developments, "Bridgefield" and "Pappan Grove" and the housing development, "Cedarview", directly north, were recently constructed and completed by the Applicant. The "Blackwood Square" apartment development to the north-west of this proposed development is currently under construction, again by the Applicant.

The proposed development will comprise 255 apartments in 5 buildings, ranging from 1 storey through 5, 7, 8 and 9 storeys, arranged around a central courtyard, all over a large basement providing vehicle parking, cycle parking and various storage and ancillary facilities. The development also includes a childcare facility, a residents' gym and a concierge/multifunction area.

Sections 6.11 to 6.14 of the document *Sustainable Urban Housing; Design Standards for New Apartments-Guidelines for Planning Authorities* relate to the "Operation and Management" of Apartment developments.

Section 6.13 of the Guidelines 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 the costs for the benefit of residents"

- The report sets out to address the stated requirements in Section 6.13, and is divided into the following sections-
- Section 1- Assessment of Long Term Running and Maintenance Costs as they would apply on a per residential unit basis at the time of application
- Section 2- Measures specifically considered by the proposer to effectively manage and reduce the costs for the benefit of residents



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SECTION 1-

Assessment of Long Term Running and Maintenance Costs as they would apply on a per residential unit basis at the time of application

Property Management Company and Owner's Management Company (OMC)

1.1 Property Management of the Common Areas of the Development

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 running and maintenance costs of the common areas of the development are kept within the annual operational budget.

The property management company will enter into a contract directly with the OMC for the ongoing management of the built development.

The property management will also have the following responsibilities for the apartment development once completed-

- Timely formation of an Owners Management Company (OMC) – which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members of this OMC.
- Preparation of annual service charge budget for the development common areas.
- Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (MUD Act).
- 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 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.
- Staff Administration.

1.2 Service Charge Budget

The property management company has a number of key responsibilities most notably, the compiling of the service charge budget for the development for agreement with the OMC.

The service charge budget 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 in accordance with the Multi Unit Developments Act 2011 (MUD Act).

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 OMC, 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.

A sample format of the typical BIF report is set out in Appendix A.

Notwithstanding the above, it should be noted that the detail associated with each element heading, i.e., specification and estimate of the costs to maintain/ repair or replace, can only be determined after detailed design and the procurement/ construction of the development and therefore has not been included in this document.

Section 2-

Measures specifically considered by the proposer to effectively manage and reduce the costs for the benefit of residents

2.1 Energy and Carbon Emissions

The following are an illustration of the energy measured that are planned for the units to assist in reducing costs for the occupants-

Measure	Description	Benefit
BER Certificates	The building fabric, detailing and services/renewables requirements set out in Building Regulations Technical Guidance Document L 2019 Conservation of Fuel and Energy – Dwellings combine to deliver NZEB (Near Zero Energy Building) standards. The proposed buildings will be constructed to achieve these required standards and will therefore be NZEB. NZEB standard is equivalent to BER (Building Energy Rating) for each apartment of generally A2.	Higher BER ratings reduce energy consumption and running costs
Fabric Energy Efficiency	<p>The subject buildings will incorporate floor, wall and roof insulation to deliver U-values superior to the Maximum Fabric Insulation U-value performances set out in Building Regulations Technical Guidance Document L 2019 Conservation of Fuel and Energy – Dwellings (or updated/revised version that document if relevant at time of construction).</p> <p>Windows will be double or triple glazed to deliver insulation performance in accordance with that set out in the Technical Guidance Document. Glazing with solar resistance will be provided where required to control solar heat build-up.</p> <p>Construction detailing around window and door opes, at floor edges etc. will incorporate the provisions of the document “Limiting Thermal Bridging and Air Infiltration – Acceptable Construction Details”, published by Department of Environment, Heritage and Local Government. This detailing limits heat loss and also limits the air permeability of the envelope of the buildings.</p> <p>Building Services and Renewable Technologies The use of in-apartment Heat Pumps, designed to capture heat from external air, is included for consideration in the design of the subject buildings. Other energy efficient technologies will also be considered.</p> <p>Lighting points will be suitable for the use of low energy lighting.</p>	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, lower energy consumption and thus minimise carbon emissions to the environment.

Energy Labelled White Goods	<p>The white goods package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating. It is expected that the following appliance standards will be provided-</p> <ul style="list-style-type: none"> Oven- A+ Fridge Freezer- A+ Dishwasher- AAA Washer/ Dryer- B 	<p>The provision of high rated appliances in turn reduces the amount of electricity required for occupants.</p>
Internal Common Areas & External External lighting	<p>Low energy luminaires and automatic controls such as motion sensors are to be provided for electric lighting to maximize efficiency in use. LED lamps will be preferred as far as is practical. Lighting will be provided to ensure a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behavior and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.</p>	<p>Low energy lamps and automatic controls improve energy efficiency. Adequate lighting levels ensure safe environments.</p>

The following are **low energy technologies** that are being considered for the development and during the design stage of the development the specific combination from the list below will be decided upon and then implemented to achieve an A2/ A3 BER rating-

Measure	Description	Benefit
Air Source Heat Pump	As part of the overall energy strategy, the use of Air Source Heat Pumps will be assessed to determine their technical and commercial feasibility. These systems extract heat energy from the outside air and raise the temperature of the heat energy using a refrigerant vapour compression cycle.	Air source heat pumps use electrical energy from the grid to drive the refrigerant cycle but do so extremely efficiently. Modern heat pumps will typically provide 4 to 5 times more heat energy to the dwelling than the electrical energy they consume.
Combined Heat and Power	Combined Heat and Power, (CHP), is a technology being evaluated as part of a Community Heating System. This technology generates electricity and captures the waste heat from the generation unit that can be used within the heating systems in the development.	CHP can achieve energy efficiencies by reusing waste heat from the unit to meet the space heating and domestic hot water needs of the apartments. All electricity from CHP is both generated and consumed onsite (in common areas).
Condensing boilers	Condensing boilers are being investigated as they have a higher operating efficiency, typically over 90% than standard boilers and have the benefit of lower fuel consumption resulting from the higher operating efficiencies.	Condensing boiler have lower fuel consumption resulting from the higher operating efficiencies.
Mechanical Ventilation Heat Recovery	Mechanical ventilation will be provided to all apartments to ensure that the air quality within the units will be adequate. The inclusion of Heat Recovery Ventilation will be considered and assessed in order to minimise the energy usage within the dwelling.	Mechanical Heat Recovery Ventilation provides ventilation with low energy usage. The MVHR reduces overall energy and provides a continuous fresh clean air supply.
E-car Charging Points	Within the basement parking areas, provision will be made for charging points for parking spaces. Provision will also be made for charging at the surface parking spaces. This will enable the management company to offer the option to install a number of E-car charging points to cater for future E-car demand.	Providing the option of E-car charging points will allow occupants to avail of the ever-improving electric car technologies.
Car-sharing	2 no. car sharing spaces (Go-Car or similar) are proposed on street to the east of Block 1, as indicated on drawing no. 14030.9-PL200 Ground Floor Plan (Space numbers 11 and 12). Car-pooling spaces are already in operation in Gulliver's Retail Park directly west and in the recently constructed Bridgefield/Pappan Grove apartments scheme immediately north.	Reduces the reliance on the private motor vehicles in parallel with reducing oil dependency.
Solar Control Glazing	Will be considered in association with DEAP calculations findings relating to overheating risk	Can contribute to reduction in unwanted summer heat build-up and can improve comfort levels

2.2 Materials

The practical implementation of the Design and Material principles has informed the design of internal layouts, detailing of the proposed apartment buildings, and building facades. The façade materials will consist of clay brickwork, rendered concrete blockwork, generally uPVC framed external windows and doors, zinc and pressed metal with some stone cladding to feature areas.

2.2.1 Buildings

Apartment 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 apartment units and the common parts of the building and specific measures taken include-

Measure Description	Benefit
Natural/Passive smoke ventilation system to circulation areas. The requirements for AOV shafts adjoining circulation areas have been minimised in as much as possible.	Avoids costly mechanical ventilation systems and associated maintenance and future replacement.
It is proposed to naturally ventilate the carparks in order to minimize / eliminate the need for mechanical ventilation.	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
External paved and landscaped areas	All of these require low/minimal maintenance
Plant is located at ground floor level for ease for access.	Allows for easier maintenance and replacements as necessary

2.2.2 Material Specification

Measure Description	Benefit
<p>Consideration is given to the requirements of the building regulations and includes reference to BS 7543:2015, “Guide to Durability of Buildings and Building Elements, Products and Components”, which provides guidance on the durability, design life and predicted service life of buildings and their parts</p> <p>All common areas of the scheme, and their durability and performance are designed and specified in accordance with Figure 4: Phases of Life Cycle BS 7543:2015. The common parts are designed to incorporate the guidance, best practice, principles and mitigations of Annexes of BS 7543:2015 including-</p> <ul style="list-style-type: none"> • Annex A Climatic Agents affecting Durability • Annex B Guidance on materials and durability • Annex C Examples of UK material or component failures • Annex D Design Life Data sheets 	Ensures that the long-term durability and maintenance of materials is an integral part of the design and specification of the proposed development.
Use of clay brickwork generally, some areas of natural stone cladding, and local areas of profiled	Require minimal on-going maintenance.

<p>metal cladding to external wall envelope. While the embodied energy of clay brickwork and natural stone cladding might be considered greater than that of lightweight external cladding systems, the anticipated maintenance of these materials over the lifetime of the building is minimal.</p>	
<p>External windows and doors. Generally coloured upvc (limited areas of color-coated aluminium). The embodied energy of upvc frames is substantially less than aluminium. The embodied energy of upvc frames is greater than timber. Maintenance requirements attaching to timber frames are however considered too onerous, having regard to the scale, height, and part street-fronting location of the proposed development. These maintenance requirements would considerably outweigh supply stage embodied energy advantages of timber.</p> <p>Colour coatings on aluminium frames will require maintenance/restoration intervals. Aluminium framed areas are limited (staircores curtain walling etc.). UPVC frames will not require maintenance of this nature.</p>	<p>Installed upvc windows and installed aluminium windows are virtually indistinguishable in appearance. UPVC windows have embodied energy advantages (combined supply and lifetime) and require only minimal on-going maintenance.</p>

2.3 Landscaping

Element	Measure Description	Benefit
Site Layout and Design	Surface water attenuation provisions are included in the proposals	Attenuation reduces the burden on vulnerable rainwater goods, resulting in fewer elements that could require replacement or repair.
Hard Landscaping 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.
Soft Landscaping	A selection including native trees and planting is proposed. Hard and soft landscaped areas are balanced to ensure a quality public environment.	High quality soft landscaping improves the general quality of the environment for residents.

2.4 Waste Management

Measure	Description	Benefit
Construction and Operational Waste Management Plan	The application is accompanied by an Outline Construction and Demolition Waste Management Plan (Prepared by JB Barry & Partners) and an Operational Waste Management Plan (Prepared by Keywaste)	These reports demonstrate how the scheme complies with best practice
Storage of Non-Recyclable Waste and Recyclable Household Waste	<p>A Waste Management Plan by Keywaste is included in this application. This document deals in detail with storage capacity, management, renewables and collection</p> <p>The waste management strategy is generally as follows:</p> <p>Bin stores to serve the residential units and the Gym/Concierge/Multi-function spaces are located in the basement area. These bin stores are distributed evenly around the basement area, proximate to the lift cores serving the floors above. The filled bins will be taken via the vehicular ramp to the layby/bin collection area locating at the north of the proposed buildings for collection on designated days. Not all bins will be collected on a single day. The Waste Management Plan proposes collection staggered across a number of days to limit the bins volume on any particular day.</p> <p>Bins serving the childcare facility are to be located in a secured storage area adjacent to the entrance to the childcare facility. This ground level location is seen as that most convenient for the creche, avoiding the carrying of waste from these units down a level to the basement. The location minimises the distance bins will have to be rolled on bins' collection days</p>	<p>Easily accessed by all residents and users and minimises potential littering of the scheme.</p> <p>Bin store locations minimize associated nuisance or threat to amenity of residents.</p>
	<p>Domestic waste management strategy:</p> <ul style="list-style-type: none"> • Grey, Brown and Green bin distinction. • Competitive tender for waste management collection. 	Helps reduce potential waste charges.
Composting	Organic waste bins to be provided throughout	Helps reduce potential waste charges

2.5 Human Health and Wellbeing

Measure	Description	Benefit
Natural/ day light	The buildings have been favorably orientated. The design, separation distances and layout of the apartment blocks have been devised to optimize the ingress of natural daylight/sunlight to the proposed dwellings to provide good levels of natural light. In addition, the buildings are positioned to maintain appropriate levels of sunlighting and daylighting for the existing buildings to the north (Cedarview houses)	Reduces reliance on artificial lighting thereby reducing costs. Provides attractive indoor environments for residents.
Accessibility	All units will comply with the requirements of Part M fostering easy access and circulation through the proposed scheme.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
Security	The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: <ul style="list-style-type: none"> • CCTV monitoring details • Secure bicycle stands • Routine access fob audits 	Help to reduce potential security/management costs.
Natural Amenity	The primary Public Open spaces are provided at the west and north perimeters of the proposed apartment buildings. There are pathways and cycle routes that will connect/ link into a wider network facilitating access to the Santry River Amenity Walk and Santry Park. The central courtyard is a semi-private space for the use of residents of the scheme. Two large mature Sycamore trees sit centrally within the site. These are to be retained and incorporated into the final design, forming an integral part of the landscaped courtyard layout. These trees are identified in Table 1 of the Tree Survey and Report accompanying this application (prepared by The Tree File Ltd.) as numbers 1 and 2, both Sycamores, and are the only trees categorised "B- Typically including trees regarded as being of moderate <i>quality</i> ". Refer to the landscape design drawings for details of replacement tree planting for those existing trees being removed.	Facilitates community interaction, socialising and play – resulting in improved wellbeing. Improves vistas from the proposed apartments

2.6 Management

Consideration has been given to ensuring that homeowners have a clear understanding of their property-

Measure	Description	Benefit
Home User Guide	<p>Once a purchaser completes their sale, a homeowner pack will be provided which it is envisaged will include:</p> <ul style="list-style-type: none">• Homeowner manual – this will provide important information for the purchaser on details of their new property. It typically includes details of the property such as MPRN and GPRN, Information in relation to connect with utilities and communication providers, Contact details for all relevant suppliers and User Instructions for appliances and devices in the property.• A Residents Pack prepared by the OMC which will typically provide information on contact details for the Managing agent, emergency contact information, transport links in the area and a clear set of rules and regulations.	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

2.7 Transport

Measure	Description	Benefit
Access to Public Transport (Bus Services & future Metro)	The site is located within walking distance (approx. 700m) to the old Ballymun Road providing easy access to frequent bus routes (Nos. 4, 13, 42d, 155). These routes are to be enhanced as part of the Bus Connects scheme (Route E1- with a planned terminus near Gulliver's Retail Park. The site is also located within walking distance to an identified station (namely "Northwood") on the proposed MetroLink line.	The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Permeable Connections	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with adjoining third party lands and the off-site networks, providing convenient access to local services including shops, schools, restaurants etc.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
Bicycle Storage	There are 600 secure bicycle parking spaces proposed at basement level. A further 128 spaces are provided for at ground level distributed around the perimeter of the development (72 of these spaces are covered).	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
Motorcycle Parking	8 no. parking bays are provided at basement level for residents.	Reduces the reliance on the private motor vehicles in parallel with reducing oil dependency.
E-car Facilities	Provision will be made for charging points for basement parking spaces and for the proposed on-surface spaces. This will enable the management company to offer the option to install a number of charging points to cater for future demand.	To accommodate the growing demand for E-car which assist in decarbonising society and reducing oil dependency.
Metro station	The proposed development is located within a very short walking distance of the planned location of the future Metro Link station (Namely "Northwood").	Potential to reduce reliance on private motor vehicles. High speed metro link to wider hinterlands.
Car-sharing	Car sharing spaces (Go-Car or similar) are already in operation in Gulliver's Retail Park to the west and in the recently Bridgefield/Pappan Grove apartments which are convenient to the proposed scheme. There has been consistently strong use of this resource as people recognize the economic and environment benefit of relinquishing car ownership It is proposed to include space for the expansion of the car sharing facility in the proposed development. 2 no. car sharing spaces (Go-Car or similar) are proposed on street to the east of Block 1, as indicated on drawing no. 14030.9-PL200 Ground Floor Plan (Space nos. 11 and 12)	Reduces the reliance on the private motor vehicles ownership in parallel with reducing oil dependency.

APPENDIX A:

ITEMS INCLUDED IN A TYPICAL BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund.

BUILDING INVESTMENT FUND (SINKING FUND) CALCULATIONS			
Ref	Element	Life Expectancy	Amount
1.00	Roofs		
1.01	Replacement single ply roof covering incl. insulation to main roofs/ overhaul to green roofs.	18	
1.02	Replacement parapet details	18	
1.03	Replacement/ repairs to facias	18	
1.04	Replace roof access hatches / roof lights	25	
1.05	Overhaul waterproofing details to terraces / balconies	12	
2.00	Elevations		
2.01	Recoat zinc / metal panels	25	
2.02	Minor repairs and preparation for decorations of rendered areas	18	
2.03	Replace exit/ entrance doors	25	
2.04	Replace external windows	35	
2.05	Replace Rainwater goods	25	
2.06	Recoat powder coated Finishes to balconies / Grills to Basement vents / colour coated aluminium window frames (the majority of window frames will be coloured pvc, not requiring re-coating)	20	
3.00	Staircores & lobbies (8 No. Cores)		
3.01	Decorate Ceilings	7	
3.02	Decorate Walls	7	
3.03	Decorate Joinery	7	
3.04	Replace fire doors	25	
3.05	Replace carpets (stairwells & lobbies)	12	
3.06	Replace entrance mats	10	
3.07	Replace nosings	12	
3.08	Replace ceramic floors tiles Entrance lobbies	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	

4.00	Basement & Car Parking		
4.01	Remove/ Replace ceiling insulation	25	
4.02	Repaint parking spaces & Numbering	15	
4.03	Replace store doors, ironmongery & digi-locks	15	
4.04	Replace Bike stands	25	
4.05	Replace basement access control at entrance & core entrances	12	
5.00	M&E Services		
5.01	General - Internal relamping	7	
5.02	Replace Internal light fittings	18	
5.03	Replace External light fittings (lights at entrance lobbies)	18	
5.04	Replace smoke detector heads	18	
5.05	Replace manual break glass units/ disabled refuge call points	18	
5.06	Replace Fire alarm panel	18	
5.07	Replace lift car and controls	25	
5.08	Replace AOV's	25	
5.08	Replace security access control installation	15	
5.09	Sump pumps replacement	15	
5.10	External Mains Water connection	20	
5.12	Electrical Mains and Sub Mains distribution	20	
5.13	Emergency Lighting	20	
5.14	Overhaul and/or replace Waste Pipes, Stacks & Vents	20	
6.00	Exterior		
6.01	External boundary treatments - Recoat powder coated Finishes to railings	60	
6.02	Replace external signage	18	
6.03	Replace cobblelock areas	18	
6.04	15-year overhaul of soft landscaping generally	15	
6.05	Replace CCTV provision	12	
6.06	External Handrails and balustrade	18	

APPENDIX B:

Phases of the Life Cycle of BS7543; 2015

Figure 4 Phases of the life cycle

