

THE HAVEN SHD

BUILDING LIFECYCLE REPORT

PROPOSED BUILD TO RENT MIXED USE DEVELOPMENT

BELGARD SQUARE EAST, BELGARD ROAD AND
BLESSINGTON ROAD, TALLAGHT, DUBLIN 24



May 2022

HENRY J LYONS
BUILDING LIFECYCLE REPORT

Revision	Description	Date
01	Stage 3 Submission	31/05/22

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THE HAVEN

Belgard Square East, Belgard Road and Blessington Road,
Tallaght, Dublin 24.

Building Lifecycle Report & Schedule of Areas

Ravensbrook Limited

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00 INTRODUCTION

INTRODUCTION

This report relates to the proposed development on lands at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

The Sustainable Urban Housing; Design Standards for New Apartments - Guidelines for Planning Authorities were published in December 2020 (hereafter referred to as the Apartment Guidelines). The Apartment Guidelines introduced a requirement to include details on the management and maintenance of apartment schemes. This is set out in Section 6.11 to 6.14 - 'Operation & Management of Apartment Developments'.

Section 6.13 of the Apartment Guidelines requires that residential applications, including shared accommodation proposals:

'include a building life cycle 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'

'demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.'

This Building Life Cycle report sets out to address the requirements of Section 6.13 of the Apartment Guidelines. The report is broken into two sections as follows:

Section 1:

An assessment of long term running and maintenance costs as they would apply on a per residential unit basis, per bedspace in this instance, at the time of application;

Section 2:

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

This report has been prepared in association with the following consultants:

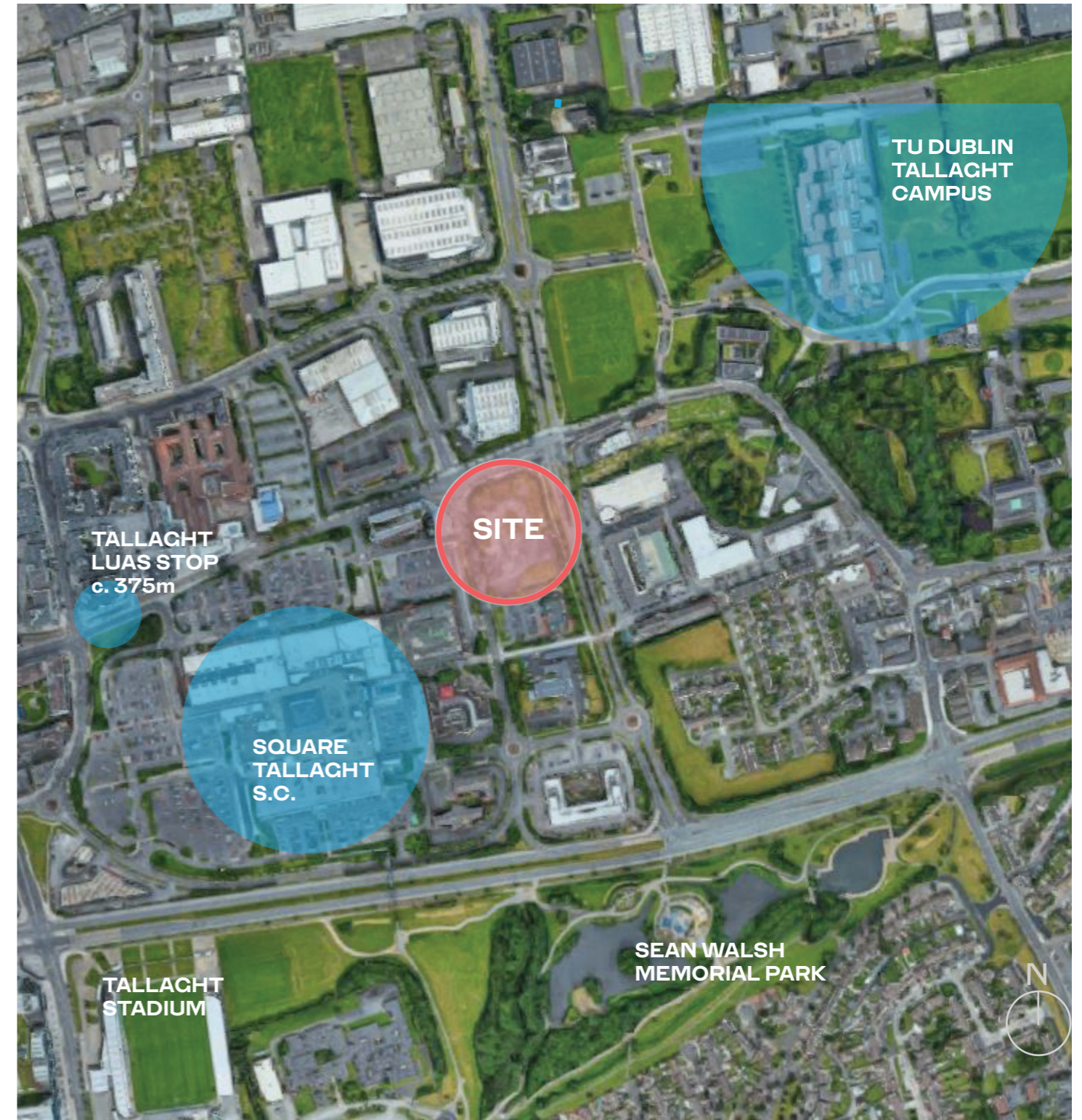
- Henry J Lyons Architects
- CS Consulting Engineers
- Axiseng Consulting Engineers
- John Spain Associates
- Park Hood Landscape Architects
- BPG3.
- AWN Consulting

02. 00.1 PROJECT DESCRIPTION

The proposed strategic housing development comprises a mixed-use development including 310 no. “Build-to-Rent” residential apartments, a creche and commercial units (c. 2,289 sqm) on a c. 1.26 ha site at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24.

The proposed development will consist of the demolition of existing boundary wall and construction of:

1. c. 2,289sqm of retail/commercial floor space across 10 no. units including retail, restaurant/café and Class 2 financial/professional services and office use, and a crèche (257sqm) at ground and first floor levels;
2. 310 no. build to rent residential apartments including 99 no. one bedroom units, 203 no. 2 bedroom units and 8 no. three bedroom units within a part 6 to part 12 no. storey development across 3 blocks over partial basement;
3. c. 2,223sqm of communal external amenity space provided in the form of a ground floor garden and external terraces at fifth, sixth, seventh and eighth floor levels; c. 1,026sqm of public open space provided in the form of a central courtyard with landscaped areas at site perimeters;
4. c. 1,785 sqm of resident support facilities and services and amenities provided at basement, ground and first floor levels;
5. Vehicular access to the basement development from a new access point at Belgard Square East;
6. A new tertiary route will be provided in the southern part of the site linking Belgard Square East and Belgard Road;
7. Provision of 130 no. car parking spaces (including 8 no. club car spaces and 6 no. disabled access spaces) at basement level in addition to 5 no. set down spaces (4 no. serving creche) and 1 no. disabled access space at ground level, layby on Belgard Square East, 6 no. motorcycle spaces and a total of 763 no. bicycle parking spaces;
8. Provision of 4 no. Ø0.3m microwave link dishes to be mounted on 2 no. steel support pole affixed to lift shaft overrun, all enclosed in radio friendly GRP shrouds, together with associated equipment at roof level at Block B;
9. Provision of 3 no. ESB substations with switch rooms and plant rooms at basement level, hard and soft landscaped areas, bin and bicycle stores, public lighting, attenuation, green roof, plant at roof level, service connections and all ancillary site development works.



 SITE LOCATION

01 SECTION 1

PROPERTY MANAGEMENT OF COMMON AREAS

Long Term Running Costs

From the outset of this project, care has been taken by the applicant to ensure that long-term running costs for residents and maintenance costs for the operators are reasonable. The aim of Applicant is to manage and minimise potential unnecessarily high running costs.

Running costs are calculated on a per bedspace basis.

Property Management of the Common Areas of the Proposed Development

The applicant has considered the long term running costs for residents and maintenance costs for the operators from the commencement of the design process, with the aim to manage and minimise potential unnecessarily high running

Costs for expenditure on a per residential unit basis.

Bringing forward the proposals for the subject site, the design team have a proven track record in the delivery of residential projects, and the applicant is a client of Hooke & MacDonald, a well-established property and asset manager with a hands-on operational team. hooke & MacDonald are preparing an Operational Management Plan to accompany this application.

The design team have applied lessons from permitted shared accommodation schemes and the application of standards from the new apartment guidelines. Therefore, ensuring the provision of an excellent end product which will be well managed and easily maintained for the foreseeable future.

For this report '*the Residence*' will be considered as per a Build to Rent Development, where there is a commercial entity owning or operating and maintaining the development. 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 the following:

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

Shared accommodation schemes, where there is a commercial entity owning, or operating and maintaining the development, may by their nature have different arrangements and obligations. Planning authorities should provide planning conditions for such developments which ensure the provision of appropriate management and maintenance structures including for the scenario where the shared Accommodation nature of a development is altered following specified period under SPPR 7(a) above.

Service Charge Budget

The property management company (PMC) has several key responsibilities for the development for agreement with the development owners.

There would typically be a service charge budget in multi unit developments to cover 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); with shared accommodation, this is undertaken by management instead.

Sinking Fund

It is expected that a sinking fund allowance will account for future major maintenance and upgrade costs. A 10 year Planned Preventative Maintenance (PPM) strategy will determine the level of sinking fund required.

02 SECTION 2

ENERGY & CARBON EMISSIONS

Measures	Description	Outcome																											
High Performance Construction Fabric	<p>The construction u-values are being considered and designed to meet or are lower than those required by Building Regulation Technical Guidance Documents Part L for Dwelling and Buildings other than Dwellings applied to residential and non-residential building blocks.</p> <p>See below TGD L 2021 Table 1 list U-value set out for building:</p> <table border="1"> <caption>Table 1 Maximum elemental U-value (W/m²K)^{1, 2}</caption> <thead> <tr> <th>Column 1 Fabric Elements</th> <th>Column 2 Area-weighted Average Elemental U-value (U_m)</th> <th>Column 3 Average Elemental U-value - Individual element or section of element</th> </tr> </thead> <tbody> <tr> <td>Roofs</td> <td></td> <td></td> </tr> <tr> <td>Pitched roof - Insulation at ceiling</td> <td>0.16</td> <td>0.3</td> </tr> <tr> <td>Insulation on slope</td> <td>0.16</td> <td></td> </tr> <tr> <td>Flat roof</td> <td>0.20</td> <td></td> </tr> <tr> <td>Walls</td> <td>0.18</td> <td>0.6</td> </tr> <tr> <td>Ground floors³</td> <td>0.18</td> <td>0.6</td> </tr> <tr> <td>Other exposed floors</td> <td>0.18</td> <td>0.6</td> </tr> <tr> <td>External doors, windows and rooflights</td> <td>1.4^{4, 5}</td> <td>3.0</td> </tr> </tbody> </table> <p>The U-value requirement set out for buildings set out in the building regulation technical guidance Document L 2021.</p> <p>A number of passive solar designs have been considered including the window design option to maximising daylight and solar heat gains during winter to reduce the artificial lighting and space heating load, whilst minimising summer gains to reduce the cooling load.</p> <p>The high-performance wall, roof and glazing is being considered and selected to minimise the heat transfer into the internal spaces. Aside from the reduction in heating and cooling energy consumption and carbon emissions, the reduction in loads results in reduced plant capacity and size. This has the net effect of reducing embodied energy consumption associated with manufacture and transportation associated with the plant, as well as the reduced input from the national electricity grid (for cooling & for heating)).</p>	Column 1 Fabric Elements	Column 2 Area-weighted Average Elemental U-value (U _m)	Column 3 Average Elemental U-value - Individual element or section of element	Roofs			Pitched roof - Insulation at ceiling	0.16	0.3	Insulation on slope	0.16		Flat roof	0.20		Walls	0.18	0.6	Ground floors ³	0.18	0.6	Other exposed floors	0.18	0.6	External doors, windows and rooflights	1.4 ^{4, 5}	3.0	<p>Minimise heat losses through the building fabric thus lowering energy consumption and carbon emission⁷</p> <p>Minimise heat loss and gain impact on heating and cooling load requirement all-time during year, thus lowering energy and carbon footprint impact.</p>
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Air Tightness Construction	<p>Air tightness construction, the building will be designed to ensure it is in compliance with the building regulation and achieving air tightness of minimum 4.0 m³/(h.m²). It is technically feasible to reduce the air permeability between 2.5 to 1.5 m³/(h.m²), this can be achieved if the on-site inspection and quality control is in place to ensure the design intention is achieve in the place.</p>	<p>Minimise heat losses through the building fabric thus lowering energy consumption and carbon emission.</p>																											
Thermal Bridging	<p>The limitation of thermal bridging will be achieved in according with guidance under section 1.5 within technical guidance Part L regulation.</p> <p>See below TGD L 2021 Diagram 1 showing Average Area Weighted Elemental - Values.</p> <p>On-site inspection and quality control will be carried to ensure continuity of insulation and to limit local thermal bridging at junction between construction element and other locations e.g. around windows, door and other wall openings.</p>	<p>Minimise heat losses at junctions between construction element, thus lowering energy consumption and carbon emission.</p>																											

Measures	Description	Outcome
Daylight & Lighting	<p>Provision of natural daylight in buildings creates a positive environment by providing connectivity with the outside world, and assisting in the well being of the building inhabitants. Daylight also represents an energy source - reducing the reliance on artificial lighting. The provision of full-height glazing on the elevations maximise the use of natural daylight to enhance visual comfort, without compromising thermal performance.</p> <p>Figure 6 Daylight factor distribution diagram for rooms assessed at Level 05</p> <p>Image extract from BPG3. Report: Assessment of Daylight Adequacy within a Proposed Development on Belgard Square East, Dublin 24. (Traditional Testing)</p> <p>Majority of lamps selection will be based on LED type located externally and internally in circulation spaces, bedroom, lobby, basement car-park, cores and reception. LED technology results in 30-35% reduction in electrical energy usage.</p> <p>Expected lamp life is 50,000 hours, compared to T5 lamps that require replacement and disposal (WEEE Directive 2006) after 12,000 hours. Automatic daylight lighting control (automatic dimming) complete with combined PIR detection. Intelligent lighting controls in co-working and common areas allow electrical energy savings up to 40%, as well as increasing the occupant exposure to natural daylight - thereby promoting a healthier work environment.</p>	<p>Reducing lighting electricity energy consumption, thus reducing carbon emission footprint overall.</p> <p>Enhance healthier working and leisure environment through the use of natural daylight.</p> <p>Minimise the personnel resource and time in controlling the lighting system, thus reducing cost.</p>
HVAC System	<p>Hot Water appliances - Flow restrictor</p> <p>All hot water taps including the shower hear fitting in the residential apartment are to be fitted with flow restrictors, to allow for the conservation of water uses well as energy used to heat hot water.</p>	<p>Minimise to water usage, thus reducing heating energy load and increasing heat pump operating performance and reducing cost.</p>

ENERGY & CARBON EMISSIONS

Measures	Description	Outcome
HVAC System / Integration into future District Heating (DH) System	Heat Recovery in mechanical ventilation system The inclusion of heat recovery unit into the ventilation system allows for heat transfer between exhaust and supply air before the heating and cooling coils thus reducing heating and cooling load.	Reduction in energy consumption and carbon emission.
	Heating systems have been designed to facilitate integration of a future District Heating (DH) system. District heating offers many benefits and real cost-saving advantages. It will allow users to decide when, where and how much energy they need, ensuing maximum comfort, whilst providing how water on demand.	A future district heading system comes from a sustainable and efficient process and eliminates any carbon emissions produced on site for heating.

Measures	Description	Outcome
HVAC System	<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 of buildings and their parts. All common parts of the proposed apartment buildings and the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015. The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543; 2015 including:</p> <p>Annex A - Climatic Agents affecting durability Annex B - Guidance on materials and durability Annex C - Examples of material or component failures Annex D - Design Life data sheets.</p>	Ensures the long term durability and maintenance of materials is an integral part of the design and specification of the proposed development.
Cladding materials	Use of brickwork and solid metal panels are used throughout. Metal work is to have marine grade PPC finish.	Choosing robust materials reduces ongoing maintenance and repairs.
Windows	Use of factory finished aluclad windows and doors.	Requires no ongoing maintenance.

LANDSCAPE

Measures	Description	Outcome
Site Layout & Design	Generous and high quality landscaped areas have been designed within the proposed development. This includes soft and hard landscaping. Refer to landscape documentation as well as architectural design statement.	An improved environment and access to natural elements within the development.
Green Roofs	Use of green roofs throughout the development.	Attenuation provided by the green roof reduces the burden on rainwater goods, resulting in fewer elements that could require repair.

MANAGEMENT

Measures	Description	Outcome
Resident's User Guide	Residents Pack – This is prepared by the Operator Management team, and would typically provide information on contact details for the managing agent, emergency contact information, transport links in the area, and a clear set of the rules and regulations.	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

HEALTH & WELL BEING

Measures	Description	Outcome
Daylight & Sunlight	The design, separation distances and layout of the apartment blocks have been designed to optimise the ingress of natural daylight & sunlight to the proposed apartments to provide good levels of natural light.	Reduces the reliance on artificial lighting thereby reducing running costs. Improved mental health
Accessibility	All units will comply with the requirements of TGD Part M and Part K.	Reduces the level of adaption and associated costs potentially necessitated by resident's future circumstances.
Security	The scheme is designed to incorporate natural surveillance wherever possible and supplemented by the following strategies: - CCTV monitoring - Access control to the Basement Level - Secure bicycle stands covered by CCTV - Routine access fob audits.	Help to reduce potential security & management costs.
Passive Surveillance	Combination of commercial, amenity and residential access at street level, including own door apartments. With a variety of access points with different uses, there will be increased activity providing passive surveillance. Apartments and amenity have access to, and views of the communal open spaces.	Help to reduce anti social behaviour, reduce cost of remedial works to vandalism, and improve sense of security for residents
Natural Amenity	Communal open spaces provided at multiple levels for the enjoyment of residents; public open space to the perimeter of the site provides a visual amenity, and possible link to future parkland.	Facilitates community interaction, socialising and play resulting in improved well being.
Central Location	The site is located in a very central location with good access to public transport, parks and public spaces	Encourages interaction with the city and the outdoors to promote a healthy lifestyle.
Reduced car parking Provision + Transport Links	Provision of a reduced number of car parking spaces and immediate proximity to cycle lanes and close proximity to public transport links that connect with national routes	Discourages individual car ownership, encourages uptake of cycling, walking, and increased use of public transport. Reduced emissions & improved physical health & well being.

WASTE MANAGEMENT

As part of this application a Waste Management Strategies for the Development & Construction and Operational phases of the development were submitted by the Developer for the development. The documents illustrate how, at all times, industry best practices will be employed during the life cycle of the Development. Mitigation measures proposed during the Construction phase include:

1. On-site segregation of all waste materials where possible into appropriate categories including: -made ground, soil, subsoil, bedrock concrete, bricks, tiles, ceramics, plasterboard metals - dry recyclables e.g. cardboard, plastic, timber;
2. All waste materials will be stored in skips or other suitable receptacles in a designated area of the site;
3. Wherever possible, left over materials (e.g. timber of cuts) materials shall be re-used on-site;
4. Any potentially contaminated soil to be removed from site will be tested to confirm its contamination status and subsequent management requirements;
5. All waste leaving site will be recycled, recovered or disposed of at an appropriately licensed waste facility;
6. All waste leaving the site will be transported by suitable permitted contractors and taken to suitably licensed or permitted facilities;
7. All waste leaving the site will be recorded and copies of relevant documentation maintained.

During the operational phase, in order to minimise the disposal of waste material to landfill, the mantra of “reduce, reuse, recycle” will be promoted throughout the development. In addition, the following mitigation measures will be employed:

1. Suitable waste materials will be stored in bins or other receptacles in designated, easily accessible locations;
2. Waste leaving the site will be transported by suitable permitted contractors and taken to suitably permitted/licensed facilities;
3. Waste from the development will be segregated and stored in designated centralised waste storage areas at Ground and Basement floor levels;

These mitigation measures will ensure the waste arising from the Development is dealt with in compliance with the provisions of the Waste Management Act 1996-2011 (as amended), and associated Regulations, the Litter Pollution Act 2003 as amended, Eastern - Midlands Region (EMR) Waste Management Plan 2015-2021 and the South Dublin County Council Household & Commercial Waste Bye-Laws 2018, and achieve optimum levels of waste education, re-use and recycling.

AWN Consulting Ltd. (AWN) has prepared an Operational Waste Management Plan (OWMP). The OWMP proposes a strategy for segregation (at source), storage and collection of all wastes generated within the buildings during the operational phase including dry mixed recyclables, cardboard and plastic packaging, organic waste, glass and mixed non-recyclable waste.

A communal Waste Storage Area (WSA) has been allocated within the development design to accommodate waste arising from the shared living residents. The WSA is located on the ground floor with both internal and external access. All residents will have access to the WSA, but it is envisaged that they will empty their waste into the Area Waste Stations (AWS) located on each floor. Space will be required to be allocated internally by building management for the storage of Waste Electrical and Electronic Equipment (WEEE), lightbulbs and waste cooking oil. The WSA location can be viewed on the drawings submitted with the application.

TRANSPORT

Measures	Description	Outcome
Access to Public Transport	The site is conveniently located within circa 375m of the Tallaght Luas stop, and less than 130m to the nearest Dublin Bus stop along Belgard Road & Blessington Road. The vicinity is served by the following bus routes: 27, 54A, 65, 75, 75A, 77A, 175.	The availability, proximity and ease of access to high quality public transport services contribute to reducing the reliance on the private motor vehicle for all journey types. In addition, provision of a viable and practical sustainable alternative to journeys undertaken by the private motor car.
Access to Public Transport (Luas)	The Tallaght Terminus is within circa 375m of the proposed development.	The proximity, frequency and range of additional destinations served by Luas services enhance the accessibility levels of the proposed residential development.
Set down car parking	There is set down car parking available on the site for access to the crèche, and other retail units outside of crèche operating hours; Set down car parking includes a disabled accessible space.	There is car parking provided for residents at basement level. This will be maintained under the Hooke & MacDonald BTR Operational Management Plan.
Road Links	Road links include access to the R113, N81 and the M50, via the proposed vehicular access points on Belgard Square, giving access to all major national road links, and with access to the airport.	
Bicycle Storage	There is provision of high-quality secure bicycle parking facilities, for both short term and long-term parking requirements for residents, visitors and retail / commercial units. Bicycle parking is located to the site perimeter, and within the courtyard to ensure it is conveniently located near to the access points, and public open space.	Convenient and secure bicycle parking to increase the uptake of bicycle ownership and day to day use. Decreased emissions, and increased health and well being. In addition, provision of a viable and practical sustainable alternative to journeys undertaken by the private motor car.
Proximity to Shops & Places of Employment	site is within walking distance of local neighbourhood shops, amenity areas, and areas of high intensity employment, notably, areas in Tallaght, including retail, hospital, educational and office and industrial parks.	

TRANSPORT LINKS






The proposed development has excellent site connectivity. The site is within walking distance of local neighbourhood shops, amenity areas, and areas of high Intensity employment, notably, areas in Tallaght, including retail, hospital, educational and office and industrial parks.

The site is conveniently located within circa 375m of the Tallaght Luas stop, and less than 130m to Dublin Bus stop no. 4436, which serves the following bus routes: 27, 54A, 65, 75, 75A, 77A, 175.

Road links include access to the R113, N81 and the M50, giving access to all major national road links, and with access to the airport.



AERIAL VIEW SHOWING MAIN TRANSPORT LINKS

- | | | | | | |
|---|---------------|---|--|---|-----------|
|  | SITE LOCATION |  | M50 |  | LUAS STOP |
|  | LUAS LINE |  | REGIONAL ROAD LINKS TO NATIONAL + MOTORWAY |  | BUS STOP |
|  | NATIONAL ROAD | | | | |

