Building Lifecycle Report

Former Dulux factory Site,
at Davitt Road,
Dublin 12
D12 C97T

On behalf of
Durkan (Davitt Road) Ltd.

December 2018

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1 Introduction

1.1 Planning Policy Context

The newly adopted Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018) provide unprecedented policy guidance on the operation and management of apartment developments with the stated aim of introducing certainty regarding their long-term management and maintenance structures. This certainty is to be provided via robust legal and financial arrangements supported by effective and appropriately resourced maintenance and operational regimes.

The Guidelines state that consideration of the long-term running costs and the eventual manner of compliance of the proposal with the Multi- Unit Developments Act, 2011 are matters which should now be considered as part of any assessment of a proposed apartment development to achieve this policy objective, planning applications for apartment developments now need to 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.

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 stated requirements of Section 6.13 as above.

2 Subject Site

The subject site is located at Davitt Road, Dublin 12 and is identified in Figure 1 below for the purposes of this report.

Figure 1 - Aerial Photo with site outlined in Red

The lands are located at the Former Dulux factory Site, Davitt Road, Dublin 12 and lie within the administrative boundary of Dublin City Council. The Grand Canal, Davitt Road and Red Line Luas bound the site to the north. Galtymore Road runs along the southern boundary of the site. There are existing residential land uses to the east, west and south of the subject site. The subject site covers c.0.8266ha of lands.

The existing context provides for 3 access points along Davitt Road to the front of the site and 3 to the rear off the Galtymore Road.

The site is centrally located with easy access to Dublin City Centre via public transport and walking or cycling.

Having considered the above, the subject site is considered to be opportunely located in the context of Dublin City and surrounding employment hubs such as St. James Hospital. It is our view that this infill site is considered a key development site that has the potential to deliver on much sought after rental properties and for the City of Dublin.

3 Proposed Development

Durkan (Davitt Road) Ltd. intend to apply for permission for a strategic housing development at the Former Dulux Factory Site, Davitt Road, Dublin 12 on a site measuring 0.8266ha. The current proposal seeks to provide the construction of a residential development comprising 265 build-to-let units.

This level of development is one which, based on a review of strategic planning policy and following extensive consultation with Dublin City Council, is appropriate for the subject site. We understand that there is a focus on the need to increase densities on brownfield sites and a number of measures need to be balanced in the context of the surrounding built context and residential properties. A review of these sometimes competing factors is provided in the attached planning report and statement of consistency.

The extent of the layout of the proposal is provided in the figure below for the convenience of the Planning Authority.

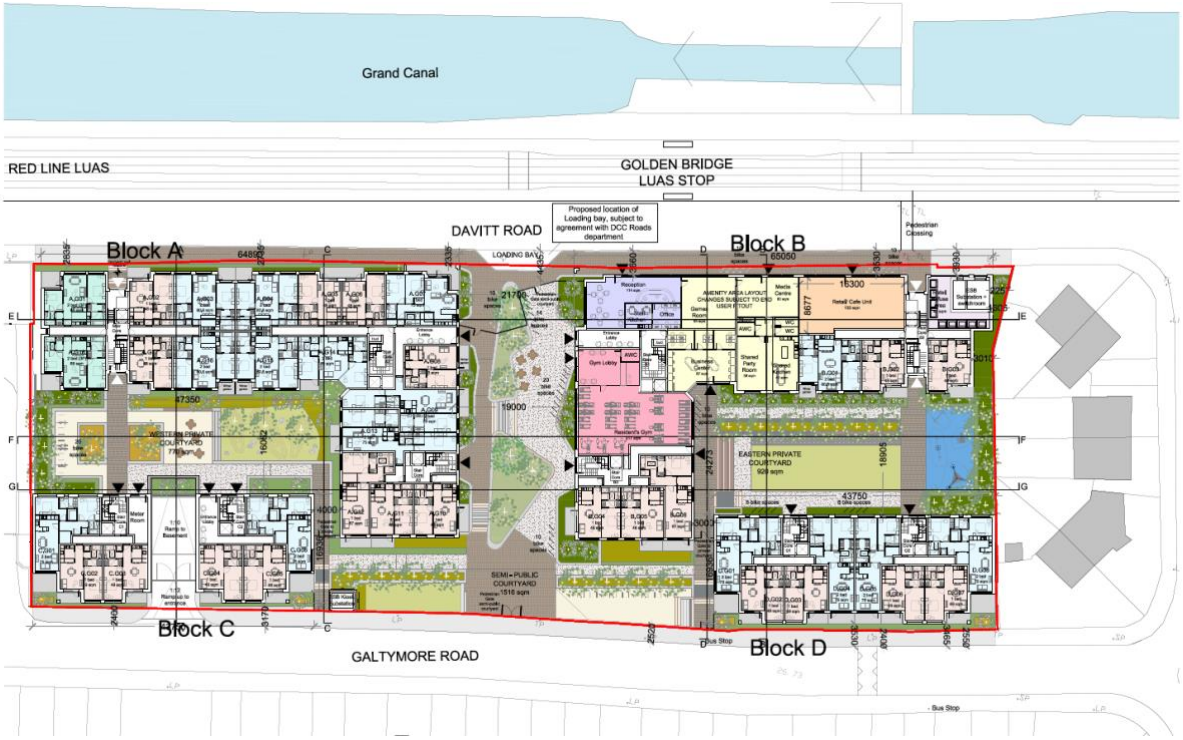


Figure 2 - Proposed Residential Layout – Ground Floor

The proposal generally provides for the following:

- The construction of 265 build-to-let apartment units;
- These shall take the form of 127 x 1 bed units, 17 x 2 beds (3 person) units and 121 x 2 bed (4 person) units.
- 119 car parking spaces including provision for disabled car parking and car sharing (less than 1 Car Parking Spaces per dwelling is provided based on the location of the site adjacent to public transport).
- A Public Open Space area of 3356sqm (c. 40.6% of the site area).
- Private Open Space in the form of private balconies.
- Heights of 3-7 Storeys.
- A range of communal facilities including:
  - Reception
  - Games Room

- Business Centre
- Gym
- Media Centre
- Shared Kitchen
- Café

We refer the Board to enclosed drawings and Architectural design Statement prepared by John Fleming Architects for further details on this scheme.

4 Assessment of Long Term Running and Maintenance Costs

The applicant, Durkan (Davitt Road) Ltd. have 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 previous residential projects together with a consideration of the changes in standards arising from the new apartment guidelines.

It is worth noting that this proposal is a 'build-to-let' scheme with the majority of units being rented with perhaps only the Part V Social Housing units being owner occupied. With the build-to-let principle in place, it is intended that property and management costs will be absorbed into the rental value of each of the properties and an annual maintenance/management fee will not directly apply. This is acknowledged in Section 6.15 of the Design Standards for New Apartments, which states:

"Build-To-Rent and 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 BTR nature of a development is altered following specified period under SPPR 7(a) above."

Notwithstanding the above circumstances, whereby it is most likely that a single commercial entity will own and operate the development, we have set out a number of measures below to reduce overall costs for the ongoing maintenance of the development.

4.1 Property Management Company and Owners Management Company

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 agreed budgets. 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 apartment development once completed:

- Timely formation of an Owners Management Company. All future purchasers will be typically obliged to become members however it is noted that the proposal is for a build-to-let development where all apartments will be owned by the management company, with potentially only the Part V, Social Housing units being owned separately;
- Preparation of annual service charge budget for the development's common areas;
- Apportioning of the Annual operational charges in line with the Multi Unit Development (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;
- Estate Management / Third Party Contractors Procurement and Management;
- OMC Reporting / Accounting Services /Corporate Services /Insurance Management;
- After Hours Services and Staff Administration.

4.2 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, within 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.

Notwithstanding the above, it should be noted that the detail associated with each element heading in the BIF report, can only be determined after detailed design and the procurement and construction of the development.

5 Cost Management and Reduction Measures

5.1 Building Treatments, Materials and Finishes

The practical implementation of the Design and Material principles has informed design of building facades, internal layouts and detailing of the proposed apartment buildings. It is noted that the large increase in building costs that has been independently assessed by the Society of Chartered Surveyors, has been due to improvements required in building standards. Therefore, the apartment guidelines' cognisance of long term maintenance and running costs for future residents is very welcome – i.e. materials that require less maintenance and are easier to repair are not always considered acceptable to planning authorities – e.g. the use of PVC windows versus hard wood windows.

The applicant has reviewed the building materials proposed for use on the block elevations and in the public realm and based on our experience of comparative schemes, the proposed materials achieve a durable standard of quality that will not need regular fabric replacement or maintenance outside general day to day care. The choice of high quality and long-lasting materials such as the hardscape in the public realm that is proposed will contribute to lower maintenance costs for future residents and occupiers.

It is envisaged that there will also be a sinking fund allowance to account for any major works that may be required into the future. The level of this sinking fund will be guided by the 10 year PPM strategy.

5.2 Buildings

The proposed 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:

Proposed Measure	Benefit to Residents
Direct sunlight to public open space	Avoids artificial lighting requirements
Natural ventilation to circulation areas	Avoids need for mechanical ventilation systems and associated maintenance costs
Natural Ventilation of part underground car park	Reduces costly mechanical ventilation systems and associated maintenance costs
External paved and landscaped areas	Low Maintenance Costs
Roof construction includes green roofs	Minimises ongoing maintenance costs and aids with SUDS provisions on site

5.3 Construction Methodology

The structural scheme for the proposed building consists of concrete frame construction with masonry outer leaf, finished in brick/ zinc/ concrete cladding panels. Cantilevered or frame supported balcony systems with glass balustrade. Bauder total flat roof system and associated sedum/ green roof system are proposed on a tapered insulation designed to falls on the concrete slab. Naturally ventilated semi-basement car park extends to approximately 56% of the site area, and is accessed from Galtymore Road. Lightweight Reynaers glazing systems to fifth floor amenity space will also provide a high quality finish that will reduce maintenance costs.

5.4 Material Specification

Consideration is given to the requirements of Building Regulations in relation to durability and design life. The common parts of the building blocks are designed to incorporate the guidance, best practice principles to ensure that the long term durability and maintenance of materials is an integral part of the design and specifications of the proposed development.

The use of brickwork with stone detailing is proposed on the external of the buildings. These will require no on-going maintenance or associated costs. A sample of the type of brickwork is shown below.

Sample Brickwork in Proposed Scheme

The use of factory finished windows and doors and glass balustrade balconies will also reduce ongoing maintenance costs.

The "living walls" at the east and west elevations are necessary to soften and enliven the elevations of the proposal as they relate to the adjoining properties. A sample of these living wall arrangements is illustrated below.

Proposed "Living Wall" Eastern Elevation

As this is a build to rent scheme, the operator/management of the building will be responsible for ensuring proper maintenance of these elements. This cost will be absorbed into the overall rental value of the units.

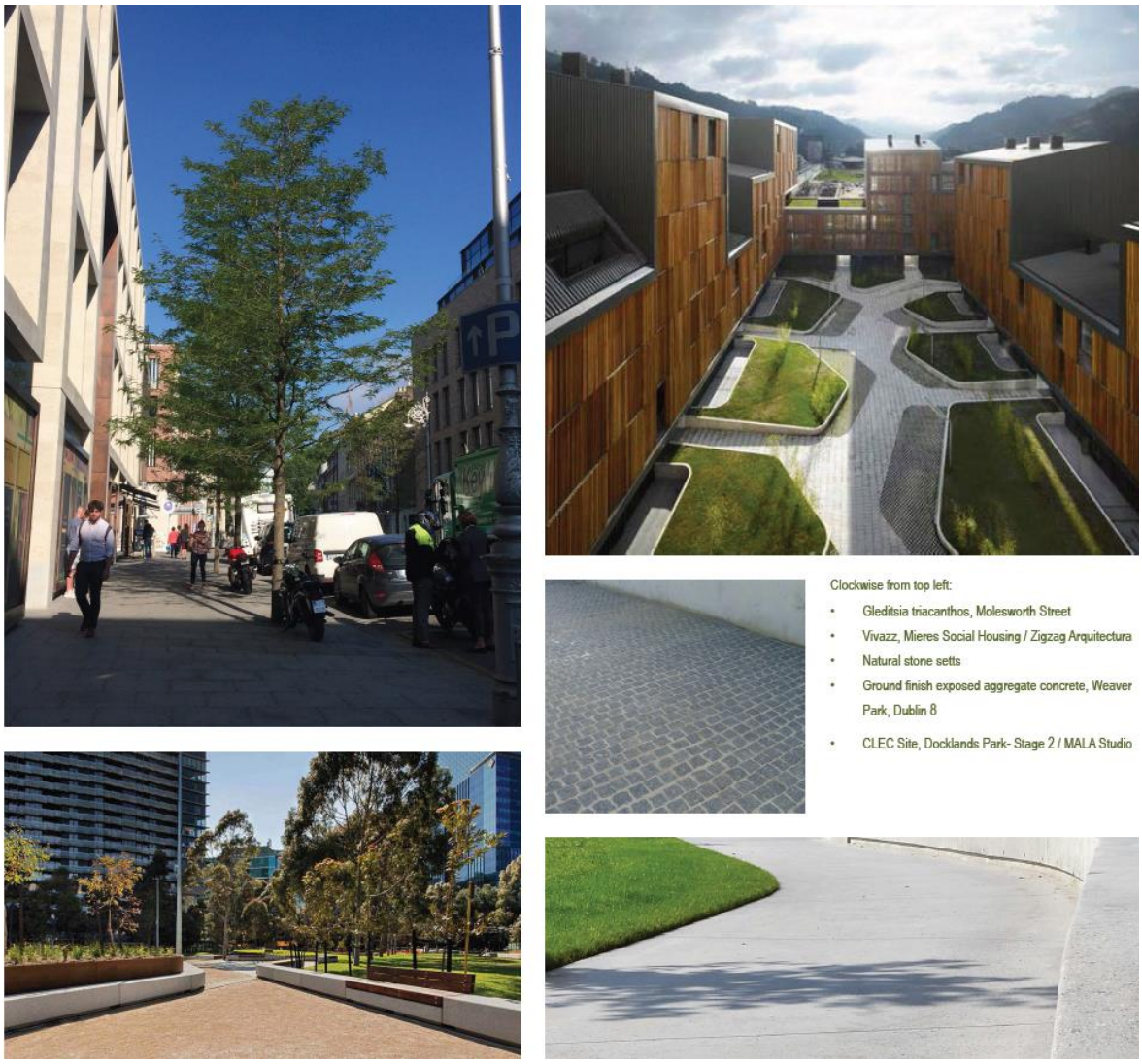
5.5 Landscaping

The proposed development features three primary courtyard spaces of varying character and function. The central courtyard is a semi private space that provides a new access from Galtymore Road through to Davitt Road, forming the primary circulation route to the Goldenbridge Luas Stop. The western private courtyard provides 770sqm of raised lawn and a dining terrace with movable tables and chairs. The eastern private courtyard is larger in area at approximately 920sqm and comprises a tiered seating area, a flat central lawn (under which attenuation tanks will be accommodated) and a formal children's play area.

Overall the site layout and design are put together to provide generous and high quality mature landscaping, with hard and soft landscaping proposed at ground floor level to provide for pedestrian priority at this level. The natural attenuation provided by the proposed landscaping is the preferable maintenance arrangement for the development.

Green roofs are provided from third floor to roof level that will aid in the SUDS strategy for the site and resulting in fewer elements that would require ongoing maintenance and/or repair.

Use of robust high quality paving materials such as exposed aggregate concrete is intended to provide materials that reduce the need for ongoing maintenance costs. Other materials such as for play, seating, fencing etc. are sustainable and robust material types that are designed to reduce the frequency and need for maintenance. A sample of the type of landscape details proposed are shown below.



Sample of Landscaping Finishes Proposed

Please refer to the attached landscape plan by Ait Landscape Architects for full details in relation to the proposed landscape treatments at the subject site.

5.6 Waste Management

A number of private waste management contractors operate in the area and currently provide a comprehensive waste recycling and disposal service including a multi bin collection system including the collection of recyclable and non-recyclable waste. The typical Building Standards treatment of waste hierarchy will be adopted in the proposed scheme.

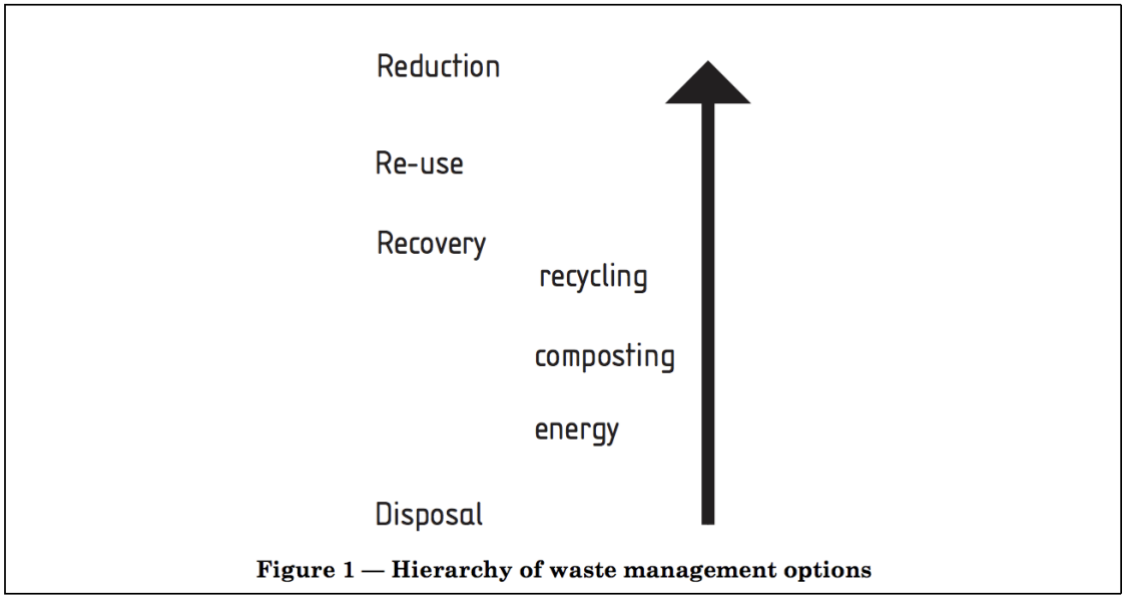


Figure 1 from BS5906 – Hierarchy of Waste Management Options

An appropriate number of waste receptacles will be provided in the proposed scheme based on the average expected weekly waste produced. It is expected that there will be 36,370 litres of waste generated weekly within the development. This has a requirement for 33no. 1,100 litre bins as per building regulations. A total of 37 bins are proposed. The waste management at the subject site will comply with best practice to ensure the reduction of waste from the subject site.

Storage of non-recyclable waste and recyclable household waste will form part of a domestice waste management strategy. This will include a distinction between grey, brown and green bins and a competitive tender for waste management collection that will hep to reduce potential waste management charges. A detailed waste management plan will be agreed between the final operator of this build to let scheme and the Local authority. This can be done by way of planning condition as part of any grant of permission.

5.7 Human Health and Wellbeing

The following details provide an illustration of how the consideration of the health and well-being of future residents will lead to a reduction in costs to residents.

- The design, separation distances and layout of the apartment clocks are designed to optimize the ingress of natural daylight and sunlight to the proposed units reducing the reliance on artificial lighting and associated costs;
- The scheme is designed to incorporate passive surveillance to reduce potential security management costs;
- All units will comply with the accessibility requirements as included in the building regulations, which will reduce the costs associated with later adaption, potentially necessitated by future residents' circumstances;
- Good quality amenity space provided to promote health and wellbeing and provide opportunities to reduce health costs.

5.8 Residential Management

The management of the property will be ultimately be the responsibility of the final owners and operators of this build to let scheme. Consideration has been given to ensuring homeowners have a clear understanding of the property which they will own and we the following will be provided at a minimum to ensure homeowners have a clear understanding of their property. Homeowner packs will be provided to new residents which will include a homeowners manual to provide information to purchasers in relation to their new property. This pack will typically include details of the property such as information in relation to connection with utilities and communication providers, contact details for all relevant suppliers and instructions for the use of any appliances and devices in the property.

A resident's pack prepared by the operational management company will also be provided and will include information on contact details for the managing agent, emergency contact details, transport links and a clear set of rules and regulations for tenants of the property. This will ensure residents are appropriately informed, so any issues can be addressed in a timely and efficient manner and ensure the successful operation of this build to let scheme.

6 Energy and Carbon Emissions

The following section provides an outline of the energy measures that are planned for the proposed units to assist in reducing costs for the occupants.

6.1 Design

Two design options for heating of the subject proposal are put forward to comply with building regulations in relation to conservation of fuel and energy and to reduce costs for residents.

The two options put forward are:

A. Central Plant with Combined Heat and Power & Photovoltaic
B. Exhaust Air Heat Pump & Photovoltaic

The preferred option will be decided at detailed design stage.

Option A – Central Plant with CHP & PV

The installation of a central boiler plant with CHP (Combined Heat & Power) distributing heat to each apartment will achieve BER of A2 and meet the Part L renewable requirements. This central heating system will distribute heat to a heat station / heat interface unit (HIU) in each apartment that measures the amount of heat being used for centralized billing. Radiators or under floor heating will then be used through the heat sub-stations to heat the apartments. Hot water for showers is generated instantaneously with a heat exchanger built into the HIU sub-station. Hot water is not stored in the apartment and demand is met with the energy of the central boiler plant.

Each apartment will have an individual time & temperature time clock for scheduling their individual heating requirements.

The energy consumed by each apartment is measured and billed individually based on electronically collected data. A standing charge for management / maintenance of the system also applies. In the event a unit is not paying the bill a set of valves located in the riser can be shut to stop heat going to the unit.

A third party operator of the central heating system is tendered out and based on a contract agreement with the management company. The measured energy consumption data from the substations is exported to a third party operator company via a modem in the plantroom. Agreements are put in place for the protection of the management company and residents as to the range of heat charges per kWh. A sinking fund for replacement of plant is typically collected as part of the standing charge and ring fenced for the management company.

Photovoltaic (PV) will be utilized to meet the remainder of the Part L requirements in accordance with nearly zero energy buildings. This will be roof mounted across the development and integrated to the roof designs. The central plant & landlord electrical load shall have the associated PV directly connected to it's consumer board to reduce the running costs at source.

Option B – Exhaust Air Heat Pump & Photovoltaic

The installation of an Exhaust Air Heat Pump (EAHP), within each apartment will achieve BER of A2 and meet the Part L renewable requirements.

An Exhaust Air Heat Pump (EAHP), is considered to be an energy recycling system. It extracts energy from the warm air as it leaves the home via the ventilation system and uses it to heat the radiators and Domestic Hot Water (DHW).

The installation of an EAHP is self-contained within each apartment and only requires an ESB connection and standard mains water connection. (i.e. no central boiler house and distribution flow & return pipework).

An exhaust air heat pump can satisfy for the heating requirements of a well-insulated apartment in some of the coldest conditions. When working efficiently, it can reduce energy consumption of heating by up to 50% when compared to conventional heating systems.

If there is an extended period of cold weather the heat pump will call on a suitably sized back up heater to assist in meeting the apartments requirement.

The extracted air from the wet rooms is passed through the ducting into the heat pump. At this point, if there is a heat or hot water demand, the air passes through the heat pumps evaporator, which transfers the heat into the heat pump's refrigerant circuit.

The cooled air is then discharged from the unit and exhausted outside. Meanwhile, the vapour compression cycle of the heat pump raises the temperature of the refrigerant and transfers the extracted heat into a water-based system that can either heat the domestic hot water via a coil in an indirect cylinder or heat the building via radiators.

The EAHP is controlled with a touchscreen wall controller in each apartment with a phone app function as standard.

A local 200 litre hot water storage cylinder shall be located in a hot press of each apartment and meets the demands of the resident's hot water. An electric immersion shall be installed for boost and fast recovery of the cylinder if required.

Photovoltaic (PV) will be utilized to meet the remainder of the Part L requirements in accordance with Nearly Zero Energy Buildings (NZEB). This will be roof mounted across the development and integrated to the roof designs. Each dwelling shall have the associated PV directly connected to it's consumer board to reduce the EAHP running costs at source.

Internal Space Heating

The units will be heated with steel, horizontal panel radiators in each room of the apartments and designed for the operating temperature of the central plant or exhaust air heat pump.

Each unit shall have two heating zones, the first zone will be the main open plan kitchen / living room and the second zone will be the bedrooms.

Individual temperature control measures will aid with residents reducing costs associated with running the apartment.

Ventilation

The ventilation for the apartments shall be provided by a mechanical system with central extract and operating on the principle of Demand Control Ventilation (DCV). DCV monitors humidity and adjusts to control the movement and volume of air exchange in a building based on air quality. If humidity is not the best indicator, then DCV can use things like presence detection or manual boosts. This will serve to manage and reduce costs where possible.

All of the above details will be confirmed prior to the commencement of development and are considered to be low energy technologies to ensure compliance with relevant BER ratings.

6.2 Transport and Accessibility

The subject site is ideally located to maximise the use of public transport and sustainable transport modes and reduce the reliance on the private car. Car parking numbers have been reduced in line with strategic policy, which will assist in reducing carbon emissions and remove car operating costs for residents.

The site is adjacent to a bus stop and the Goldenbridge LUAS stop. 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. The proximity and frequency served by the local bus service and LUAS service enhance the accessibility levels of the proposed residential development in addition to providing a viable and practical sustainable alternative to journeys undertaken by the private car.

The site is located in Drimnagh village and provides for a pedestrian friendly environment which links with the Grand Canal amenity area. This will ensure the long term attractiveness of walking and cycling to a range of local education, retail, community facilities and services.

560 bicycle parking spaces are provided within the scheme at both basement and courtyard level for residents and visitors alike. This is in line with new apartment design guidelines and promotes

sustainable transport modes. This level of bike parking will promote the uptake of cycling and reduce the reliance on the private car with knock on reductions in carbon emissions and use of fossil fuels.

3no. car sharing parking spaces are proposed at basement level. This will be subject to further agreement with the operational management company. This will further reduce the need for individual private cars at the scheme and can be utilised for occasional use by residents.

7 Conclusion

We ask that the Planning Authority to consider the above points in relation to the building lifecycle.

The building is to be constructed with durable and sustainable building materials that will enhance the resilience of the proposed development and reduce maintenance costs for residents over time.

Having considered all of the above, we trust that the Planning Authority will take a positive view in relation to this lifecycle report in the context of section 6.13 of the 'Design Standards for New Apartments" and look forward to the decision of the Board in relation to this and associated reports submitted as part of this planning application.