



# Building Lifecycle Report

Proposed Student Residence at

**Rathdown Road, Dublin 7**

On Behalf of NTM ROI Seed Capital LP

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## Disclaimer

Without Prejudice to the generality of this Building Lifecycle report, provides information which is indicative and subject to change following a review when a more detailed specification of scope of works becomes available and it is intended that this study would form the basis of pre-application discussions with the planning department and other relevant authorities.

## 0.0 Introduction

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

The Guidelines state that consideration is to be given matters of the long-term running costs and the manner of compliance of the proposal 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* with the Multi- Unit Developments Act, 2011; these are to include 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 specific measures have been considered 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”***

***“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 document sets out to address the requirements of Section 6.13 of Apartment Guidelines 2018, and is divided into 2 sections:

### Section 01

***assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application***

### Section 02

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

## 0.1 Proposed Development

The proposed development will be comprised of the demolition of the existing buildings on the site, extending to 0.43 ha, and the provision of 289 no. student accommodation units over 2 no. blocks ranging in height from 3 no. storeys to 7 no. storeys and comprising 47 no. clusters comprising a variety of 4, 6, 7 and 8 no. bedrooms respectively. 6 no. disabled access rooms are provided. Block A to the west extends to 3 no. storeys, with Block B to the east falling in height from 7 no. storeys at its most northerly point to 5 no. storeys moving south. Total gross floor area equates to 8,595.6 sqm.

The proposed development includes a reception and administrative area, laundry room, gym, internal amenity areas, study rooms in both blocks and a TV room. Internal amenity space totals 538.5 sqm. External landscaped amenity space is provided through a combination of shared surfaces, recreational and sports areas and seating, in combination with balconies and a roof terrace at fifth storey level, totalling 1602.4 sqm. Total amenity space equates to 2,140.9 sqm.

A specified set down area is located in the southern part of the site in close proximity to the entrance. 90 no. secure bicycle parking spaces are also provided. All ancillary servicing, refuse storage, and infrastructure is included within the application site, with plant enclosed at roof level at Block B.

## **Section 01**

An assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application.

## 1.1 Property Management Company (PMC)

NTM ROI Seed Capital LP has considered the long-term running costs for residents (students) 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. This exercise is a result of learning from previously undertaken residential projects and the application of changes in the standards arising from the new apartment guidelines. For this report the Student Residence will be considered as per a Build-to-Rent and Shared Accommodation scheme, where there is a commercial entity owning or operating and maintaining the development.

*6.14 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.

*6.15 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.***

## 1.2 Service Charge Budget

The property management company (PMC) has a number of 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 Build-to-Rent, this is required to be undertaken by management instead.**

## 1.3 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.

**Note:** 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 02**

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

The following is an indication of the energy saving measures that are planned for all units to assist in reducing day to day running costs for occupants:

## 2.1 Building Design

Measure	Description	Benefit
Daylighting to units	Where possible, as outlined in ‘Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018)’ to have regard for quantitative performance approaches to daylight provisions ‘outlined in guides like the BRE guide ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition) or BS 8206-2: 2008 – ‘Lighting for Buildings – Part 2: Code of Practice for Daylighting’ when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision’.	Reduces the requirement for continuous daylighting, thus reducing the expense of artificial lighting
Daylighting to circulation areas		Reduces the requirement for continuous daylighting
External Lighting	<p>External lighting will comply with the latest standards and achieve:</p> <ul style="list-style-type: none"> <li>• Low level lighting</li> <li>• Utilise low voltage LED lamps</li> <li>• Minimum upward light spill</li> <li>• Be pre-approved by / in accordance with the Dublin City Council</li> </ul> <p>Each light fitting is to be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.</p>	Lighting will be designed to achieve required standards, provide a safe environment for pedestrians, cyclists, vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna

## 2.2 Landscape

Measure	Description	Benefit
<i>Paving and Decking materials</i>	Use of robust high-quality materials and detailing to be durable for play, etc.	ensure longevity of materials
Site Layout & landscaping design	High quality landscaping with landscape, cycles and pedestrians prioritised over car. An increase in soft landscaping. Please refer to Landscaping Report prepared by Parkhood.	Natural attenuation and landscaping are preferable to
Balconies & openable windows	Use of balconies & openable windows allow individuals to clean windows themselves	Reduces the cost of 3 <sup>rd</sup> party contractors

## 2.3 Energy & Carbon Emissions

Measure	Description	Benefit
BER Certificates	A Building Energy Rating (BER) certificate will be provided for each unit in the proposed development. This will provide detail of the energy performance of the units. This is calculated through energy use for space and hot water heating, ventilation, and lighting and occupancy. It is proposed to target an A2/A3 rating for the apartments this will equate to the following emissions. A2 – 25-50 kwh/m2/yr with CO2 emissions circa 10kgCO2/m2 year A3 – 51-75 kwh/m2/yr with CO2 emissions circa 12kgCO2/m2 /year	A BER rating is a rating given based on the overall energy efficiency of the building.
Fabric Energy Efficiency	Proposed U-Values will be in line with the requirements set out by the current & proposed Part L including Nearly Zero Energy Buildings targets.  “ <i>Conservation of Fuel and Energy Buildings other than Dwellings</i> ”.  Thermal bridging at junctions between construction elements and at other locations to be minimised in accordance Paragraphs 1.2.4.2 and 1.2.4.3 within the Technical Guidance Documents Part L. See Table 1 of Part L, Building Regulations (Appendix A).	Lower u-values and improved airtightness will be achieved to reduce the amount of heat loss throughout the building fabric, and lower the consumption of energy and therefore carbon emissions.
Energy Labelled White Goods	High standard white goods with high energy efficiency ratings will be supplied to all units. It is expected to install appliances of the following ratings:  Oven – A+  Fridge Freezer – A+	High energy rated appliances reduce the amount of electricity required for occupants

	Dishwasher – AAA  Washer / Dryer – B	
External Lighting	<p>Low energy LED public lighting shall be designed and specified in accordance with CIBSE lighting guide and Dublin City Council public lighting standards and shall include:</p> <ul style="list-style-type: none"> <li>• Low level lighting</li> <li>• Utilise low voltage LED lamps</li> <li>• Minimum upward light spill</li> <li>• Be pre-approved by / in accordance with the Dublin City Council</li> </ul> <p>Each light fitting is to be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.</p>	Lighting will be designed to achieve required standards, provide a safe environment for pedestrians, cyclists, vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna

**2.4 Low energy technologies considered:**

Measure	Description	Benefit
Air Source Heat Pumps (ASHPs)	Air Source Heat Pumps (ASHPs) are to be implemented.	This will achieve reduction in Gas central heating requirements.
Low energy LED Lighting	Shall be designed and specified in each unit and in the landlord areas in accordance with Part L requirements.	Lower consumption of energy and therefore lower carbon emissions.
Mechanical Demand Control Ventilation (DCV)	Ventilation for the development will be provided by means of Natural Ventilation with Extract Fans serving WCs/En-Suites	Improved air quality and reduced costs in providing alternative heating etc.

**2.5 Materials & Materials Specification:**

Implementation of the Design and Material principles to the design of building position, internal layouts, facades and detailing has informed the materiality of the proposed development.

The proposed envelope of the building is brick, with aluminium double-glazed windows. Based on comparison with similar schemes developed, the proposed materials are durable and would not require regular replacement or maintenance.

To improve on building standards there has been an increase in the expected build cost. Materials have been selected with a view to longevity, durability and low maintenance. 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'.

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.

Measure	Description	Benefit
implementation of the Design and Material principles to the design of the proposed development.	Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and includes reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'	longevity, durability and low maintenance of materials
Brickwork to the building envelope	Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and includes reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'	Requires minimal maintenance and does not require regular replacement
Installation of factory finished and alu-clad windows and doors	Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and includes reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'	Requires minimal maintenance and does not require regular replacement
Installation of factory finished powder coated steel balconies	Materials have been selected with a view to longevity, durability and low maintenance with Consideration given to Building Regulations and includes reference to BS 7543:2015 'Guide to Durability of Buildings and Building elements, Products and Components'	Requires minimal maintenance and does not require regular replacement

## 2.6 Waste Management:

Measure	Description	Benefit
Construction and Operational Waste Management Plan	The final application will be accompanied by a Construction and Demolition Waste Management Plan prepared by AWN Consulting.	Will demonstrate how construction & demolition waste will be managed to maximise recycling and reuse rates, while minimising waste for disposal to landfill.
Operational Waste Management Plan	The final application will be accompanied by an Operational Waste Management Plan prepared by AWN Consulting.	Will demonstrate how waste will be managed during the operational phase of the development to maximise recycling rates, while minimising waste for disposal to landfill.

## 2.7 Human Health & Well Being

### How human health and well-being is been considered:

Measure	Description	Benefit
Natural daylight	Design of the layout of the development has been optimised to achieve a good quality of natural daylight to the units	Demonstration of how the scheme has been designed to comply with best practice
Security	Passive surveillance is incorporated into the design	Access to all residents to reduce risk of littering within the scheme and Reduces Potential waste charges
Accessibility	All units, egress routes and stair cores to comply with the requirements of Technical Guidance Documents Part M/K	Helps to reduce waste charges and the amount of waste going to landfill
Amenity	Provision of both internal and external public / communal amenity space	Facilitates socialising, community interaction
Private Open Space	Provision of private open space	Facilitates interaction with outdoors

## 2.8 Transport & Accessibility

**Transport considerations for increasing the uptake of the use of public transport, cycling and walking and reducing the ownership of private cars and reducing oil dependency:**

Measure	Description	Benefit
Access to Public Transport (BTR/Future Bus Connect)	<p>Less than 500m to frequent bus routes to the city centre and airport.</p> <p>Bus routes are: 16, 16C, 33, 41, 17a, 27b</p> <p>The Phibsborough Road is identified as a future Bus Connects route. Prussia Street is identified as a Bus Rapid Transit Route.</p>	Availability, proximity to quality bus routes reduces the reliance on private motor
Pedestrian Permeability	Provision of dedicated pedestrian and cycle infrastructure within the site	Ensures long term attractiveness of walking, and cycling to a range of local retail, sports, education and office facilities
Bicycle Storage	168 no. bicycle parking spaces are provided within the scheme. This is in line with the new apartment guidelines for Build-to-rent requirements and promotes sustainable transport modes	Accommodates the uptake of cycling and reduces the reliance on the private motor vehicle
Car Free development	There are no proposed car parking spaces on the site	This reduces the dependency on car parking spaces

## Appendix A

Table 1 Maximum elemental U-value <sup>1</sup> (W/m <sup>2</sup> K)		
Column 1 Fabric Elements	Column 2 Area – weighted Average Elemental U-Value (U <sub>m</sub> )	Column 3 Average Elemental U-value Individual element or section of element
Roofs <sup>2</sup>		
Pitched roof		
- Insulation at ceiling	0.16	
- Insulation on slope	0.16	0.3
Flat roof	0.20	
Walls <sup>2</sup>	0.21	0.6
Ground Floors <sup>2,3</sup>	0.21	0.6
Other exposed floors <sup>2</sup>	0.21	0.6
External personnel doors, windows <sup>4</sup> and rooflights <sup>6</sup>	1.6 <sup>b</sup>	3.0
Curtain Walling	1.8	3.0
Vehicle access and similar large doors	1.5	3.0
High usage entrance door <sup>7</sup>	3.0	3.0
Swimming Pool Basin <sup>8</sup>	0.25	0.6
<p><b>Notes:</b></p> <p>1. The U-value includes the effect of unheated voids or other spaces.</p> <p>2. Reasonable provision would also be achieved if the total heat loss through the roof, wall and floor elements did not exceed that which would be the case if each of the area weighted average U-value (U<sub>m</sub>) for these elements set out in Column 2 were achieved individually.</p> <p>3. Where the source of space heating is underfloor heating, a floor U-value of 0.15 W/m<sup>2</sup>K should generally be satisfactory.</p> <p>4. Excludes display windows and similar glazing but their impact on overall performance must be taken into account in EPC and CPC calculation.</p> <p>5. In buildings with high internal heat gains a less demanding area-weighted average U-Value for the glazing may be an appropriate way of reducing overall primary energy and CO<sub>2</sub> emissions. Where this can be shown then the average U-value for windows can be relaxed from the values given above. However values should be no worse than 2.2 W/m<sup>2</sup>K.</p> <p>6. This is the overall U-value including the frame and edge effects, and it relates to the performance of the unit in the vertical plane so, for roof-lights, it must be adjusted for the slope of the roof as described in Sect 11.1 of BR 443</p> <p>7. High Usage Entrance door means a door to an entrance primarily for the use of people that is expected to experience larger volumes of traffic, and where robustness and/or powered operation is the main performance requirement. To qualify as a high-usage entrance door the door should be equipped with automatic closers and except where operational requirements preclude it, be protected by a lobby.</p> <p>8. Where a swimming pool is constructed as part of a new building, reasonable provision should be made to limit heat loss from the pool basin by achieving a U Value no worse than 0.25 W/m<sup>2</sup>K as calculated according to BS EN 13370</p>		

Figure 1- TGD Part L Conservation of Fuel & Energy – Buildings other than Dwellings 2017, Table 1

## Appendix B

 <p><b>John Fleming Architects</b></p>		103 Upper Leeson Street, Dublin, D04 TN84 Ireland.  Tel: (+353 1) 668 9888 Web: www.jfa.ie	
BUILDING INVESTMENT FUND (BIF) SINKING FUND CALCULATIONS			
REF.	ELEMENT	LIFE EXPECTANCY	AMOUNT
<b>1.00</b>	<b>Roof</b>		
1.01	Replacement / Repairs Covering		
1.02	Replacement / Repairs Insulation		
1.03	Replacement / Repair Parapet Details		
1.04	Replacement / Repair fascia		
1.05	Replacement / Repair Fall Arrest		
1.06	Replacement / Repair waterproofing		
1.07	Replacement / Repair access hatches		
1.08	Replacement / Repair Parapet Details		
<b>2.00</b>	<b>Elevations</b>		
2.01	Replacement / Repair Render		
2.02	Replacement / Repair Cladding		
2.03	Replacement / Repair Rainwater Goods		
2.04	Replacement / Repair Entrance / Exit Doors		
2.05	Replacement / Repair Balconies		
2.06	Replacement / Repair Finishes		
2.07	Replacement / Repair External Fixings		
2.08	Replacement / Repair Balcony Floors		
2.09	Replacement / Repair Windows		
2.10	Replacement / Repair Curtain Walling		
<b>3.00</b>	<b>Staircores &amp; Lobbies</b>		
3.01	Replacement / Repair Fire Doors		
3.02	Replacement / Handrails / Balustrades		
3.03	Replace Carpets / Floor Finishes		
3.04	Replace Entrance Mats		
3.05	Replace Nosings		
3.06	Decorate Walls		
3.07	Decorate Ceilings		
3.08	Decorate Joinery		
<b>4.00</b>	<b>M&amp;E Services</b>		
4.01	General - Internal rewiring		
4.02	General - Replace Internal light fittings		
4.03	General - Replace External light fittings		
4.04	Replace Smoke Detector Heads		
4.05	Replace Fire Alarm Control Panel		
4.06	Replace lift Car & Controls		
4.07	Replace AOV's		
4.08	Replace Manual Break Glass Units		
4.09	Replace Disabled Refuge Call Points		
4.10	Replace Disabled Refuge Call Points		
4.11	Replace Security system		
4.12	Upgrades to external mains water connection		
4.13	Upgrades to internal mains water connection		
4.14	upgrades to electrical mains and sub mains distribution		
4.15	replace emergency lighting		
4.16	overhaul and / or replace waste pipes, stacks and vents		
<b>5.00</b>	<b>Basement &amp; Car Parking</b>		
5.01	Remove / Replace ceiling insulatio		
5.02	Repaint parking spaces & numbering		
5.03	Replace store doors, ironmongery & digi-locks		
5.04	Replace basement access control at entrance & core entrances		
<b>6.00</b>	<b>Exterior</b>		
6.01	Updates to External boundary treatments		
6.02	Replace external signage		
6.03	Replace cobblelock areas		
6.04	overhaul of landscaping		
6.05	Replace CCTV provision		
6.06	External Handrails and balustrades		

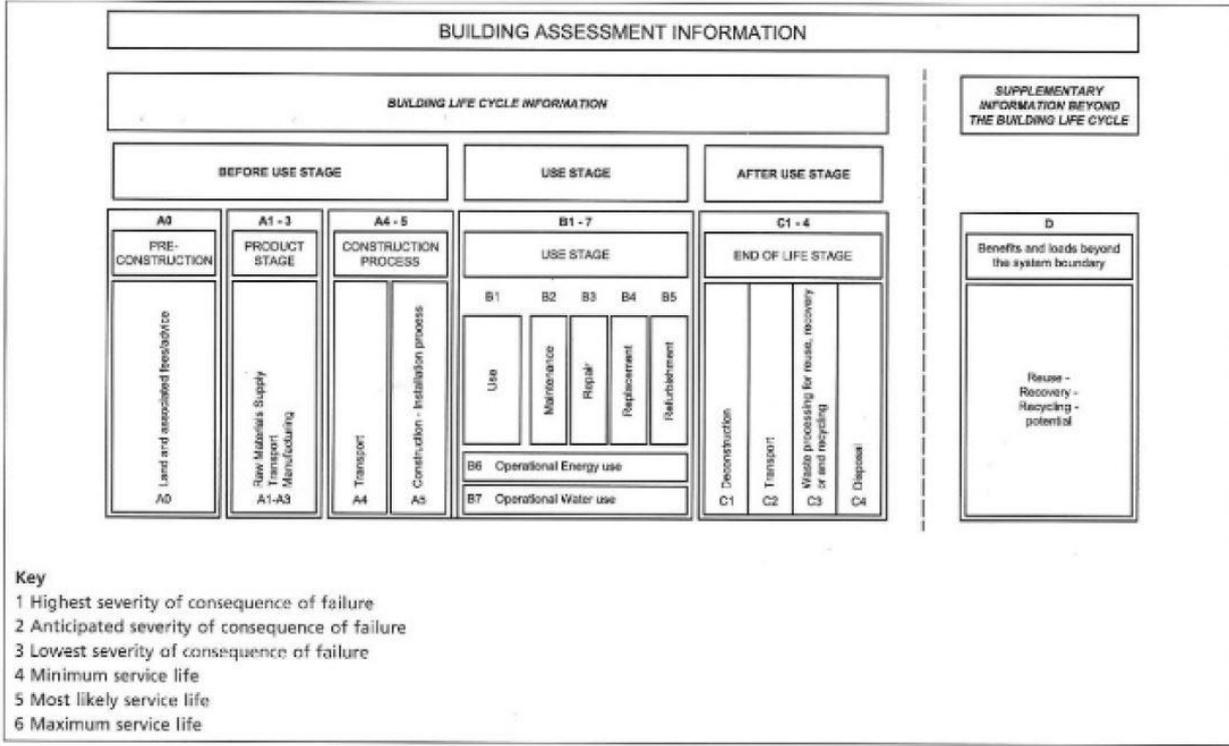


**Appendix C**

BRITISH STANDARD

BS 7543:2015

Figure 4 Phases of the life cycle



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Figure 2 - BS 7543:2015 Figure 4

