

Building Life Cycle Report

Residential Development
at
Stepaside, Co. Dublin
for
McGarrell Reilly Homes Ltd.



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1. INTRODUCTION

This Building Life Cycle Report has been prepared for the proposed development on lands at at Stepside, Co. Dublin, in accordance with the planning guidelines *Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) 2020*.

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 costs for the benefit of the residents.”

This report firstly assesses the factors effecting the long term running and maintenance costs and secondly outlines the measures undertaken at this stage which can affect them.

2. DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development comprises 118 dwellings and one crèche on greenfield lands at Stepside, Co. Dublin. The dwellings comprise 21 no. houses, with the remaining 97 no. units in one apartment building which varies in height from 3 to 6 storeys. It is this apartment building which is the subject of this report.

3. ASSESSMENT OF LONG-TERM RUNNING AND MAINTENANCE COSTS

3.1 Management of the Owners' Management Company's assets

A licensed Property Service Provider (PSP) will be contracted to the Owners Management Company (OMC) that will be formed for the members. The PSP will ensure that the interests of the members are protected by executing the block management plan efficiently. The PSP will be responsible for the good management of other support services to include finance, administration, insurance, emergency assistance support, company secretarial and communications. As governed by the Multi Unit Development Act 2011 an OMC shall not enter into a contract in excess of 3 years with any supplier. The OMC by good practice will re-tender the services received at least every 3 years.

The assets to be transferred to the OMC in accordance with the Act will include the common areas and external fabric of the building as well as landscaped areas in its vicinity.

The OMC's operational budget will benefit from the utilisation of a Planned Preventative Maintenance (PPM) programme. The PPM will be completed annually to include the shared internal and external common areas. Consideration will be given to the ongoing maintenance of the building assets in an effort to protect the asset lifecycle and to identify when replacements/upgrades are required. Items covered will guide which services are required, the timing and number of occurrences of same. Typical PPM programmes will detail the timing of the visits for fire alarm maintenance, lift maintenance, the landscaping specification, waste management protocols, along with day-to-day cleaning requirements.

3.2 Service Charge Budget

A service charge budget will be compiled to put in place funding requirements as costed in the Planned Preventative Maintenance programme and also in the Building Investment Fund report. The budget will be apportioned to unit owners in a fair and equitable way in accordance with the MUDs Act, with the collection of fees into dedicated Owners' Management Company (OMC) bank accounts.

The OMC will promote competitive tendering of running and maintenance services to help minimise charges for residents. The service suppliers will be discharged the payment for their services from these bank accounts. Monthly reports of operational and financial matters will be provided to the OMC executives and annual to the members at the general meeting.

4. MEASURES TO MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS

The proposed layout makes efficient use of the land. The building has been designed with a low number of Stair and Lift Cores in order to increase efficiencies and ensure that service charges and maintenance costs faced by residents into the future are kept at reasonable levels. Lifecycle costs are also determined by the durability and maintenance requirements of materials. A high standard of finishes has been selected across the project. Low maintenance cladding materials such as brick and self-finished render are proposed to minimize the impact of façade maintenance. Balconies are designed to be capable of fabrication off-site, resulting in higher standard of finish, reducing damage during construction and improved durability. Building materials proposed for use on elevations 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 brickwork, render, and steel as well as hardscape in the semi-public and private realms will contribute to lower maintenance costs for future residents and occupiers.

This report reflects the outline material descriptions and examples of typical materials and systems used for schemes of this nature and their associated lifespans and maintenance requirements. All information is therefore indicative subject to detailed design development. As the building design develops this document will be updated and a schedule will be generated from the items below detailing maintenance and replacement costs over the lifespan of the materials and development constituent parts. This will enable a robust schedule of building component repair and replacement costs which will be available to the property management company so that running and maintenance costs of the development are kept within the agreed annual operational budget.

The proposed apartment building is 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 the apartment units as well as the common parts of the building and specific measures taken include:

- Measure: Daylighting to stairwells
Benefit: Avoids the requirement for continuous artificial lighting
- Measure: Natural/Passive ventilation system to circulation areas
Benefit: Avoids costly mechanical ventilation systems and associated maintenance and future replacement
- Measure: External paved and landscaped areas
Benefit: All of these require low/minimal maintenance

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. This helps to ensure the long-term durability and maintenance of materials is an integral part of the design and specification of the proposed development.

4.1 External Building Fabric Material Selection

Measure	Description	Benefit
Brickwork facade	Primary facade cladding material used. Lifecycle of 100+ years. Mortar pointing has shorter lifecycle of 25-50 years.	Extremely durable, with low maintenance requirements. Preventative maintenance by monitoring mortar joint deterioration ensures longevity of material.
Render	Only to internal courtyards and selected areas of street elevations. Pigmented render system with lifecycle of circa 25 years. Cleaning of algae and other staining is recommended annually by property maintenance team.	Finish does not require repainting every few years.
Flat Roofs	TPO or similar roofing membrane with 22-30 year lifespan installed to manufacturer's proven details. Appropriate protection for access to ensure maintenance of any roof equipment will be carried out without any damage to the membrane. Regular maintenance checks by property maintenance team.	Proven roofing system with regular maintenance prevents needs for repairs and additional cost to residents.
Green Roofs	Extensive system with lightweight sedum blanket system.	Provides biodiversity in line with planning requirement. Maintenance required.
Windows and Doors	All units double glazed with thermally broken frames in uPVC or Aluminium.	Minimal ongoing maintenance
Steel Balconies	Prefinished powder-coated and capability to be manufactured off site	Minimal ongoing maintenance.

4.2 Internal Building Fabric Material Selection

Measure	Description	Benefit
Floors – apartment stair cores and entrances	Selected anti-slip vinyl or ceramic floor tile/covering with inset mat well at entrance doors as required.	Low maintenance and easily cleaned.
Floors – lobbies/corridors	Selected anti-slip vinyl covering or carpet tile on underlay. Regular cleaning by property maintenance team.	Low maintenance and easily cleaned.
Walls	Selected contract vinyl wall paper feature or selected paint finish with primer. Wall protection at heavy traffic areas with plasterboard substrate adjacent to lift cores where furniture moving will damage wall fabric. Finish lifespan of 2-10 years, regular maintenance required.	Attractive aesthetic for residents and flexibility to change appearance in the future.
Ceilings	Selected paint finish with primer to skimmed plasterboard ceiling.	Decorative and durable finish.
Internal balustrades and handrails	Painted metal balustrade or proprietary glazed panel system face fixed to stair stringer/landing edge with polished stainless steel brackets and clamps to manufacturers installation details.	Durable finish.
Internal Doors and Frames	Selected primed and painted solid internal doors. Glass and aluminium door system to glazed entrances.	Durable finish with regular inspection and maintenance.

4.3 Energy and Building Services

Measure	Description	Benefit
Nearly Zero Energy Building specifications (nZEB)	The apartments will be nearly-Zero Energy dwellings.	Reduce primary energy demand by 70% viz. 2005 standards.
BER targets	A2	Reduce primary energy demand by 70% viz. 2005 standards.
Highly insulated building fabric	Ground floors: $U \leq 0.12 \text{ W/m}^2\text{K}$ External walls: $U \leq 0.15 \text{ W/m}^2\text{K}$ Roof: $U \leq 0.11 \text{ W/m}^2\text{K}$ Windows: $U \leq 1.3 \text{ W/m}^2\text{K}$ Solar transmittance ≥ 0.70	Effective reduction of thermal energy demand
Thermal bridging	Acceptable Construction Details employed.	Effective reduction of thermal energy demand
Airtightness	$< 3 \text{ m}^3/\text{m}^2.\text{h}$ @ 50 Pa maximum	Effective reduction of thermal energy demand
General ventilation	Demand-controlled mechanical extract system or mechanical heat recovery system	Effective reduction of thermal energy demand
Heating / hot-water controls	Time clocks and thermostats for each heating / hot-water zone	Effective reduction of thermal energy demand
Pumping	Variable speed pumps	Effective reduction of thermal energy demand
Lighting	100% LED lighting	Effective reduction of electrical energy demand

4.4 Landscape Material Selection

The landscape design approach is to provide a variety of high-quality durable communal recreation areas for residents within the block which feature a range of quality tree, shrub and herbaceous planting.

Hard landscape paving and decking materials will be robust and durable and installed using proven details to minimise maintenance requirements. High slip resistance paving materials will ensure safety for all.

Proven planting details for trees, shrubs and hedging will ensure growth will be robust and future maintenance as minimal as possible.

A landscape maintenance company will be retained by the OMC to ensure regular maintenance improves the quality of the living environment for all residents.

4.5 Waste Management

Measure	Description	Benefit
Storage of Non-Recyclable Waste and Recyclable Household Waste	Domestic waste management strategy: 1) Grey, Brown and Green bin distinction 2) Competitive tender for waste management collection	Helps reduce potential waste charges.

4.6 Human Health and Well-being

Measure	Description	Benefit
Natural daylight	The design, separation distances and layout of the apartment building have been designed to optimise the ingress of natural daylight/sunlight to the proposed dwellings to provide good levels of natural light	Reduces reliance on artificial lighting thereby reducing costs
Security	The scheme is designed to incorporate passive surveillance	Help to reduce potential security/management costs.
Accessibility	All units will comply with the requirements of Parts M & K of the Building Regulations.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.

4.7 Residential Management

Measure	Description	Benefit
Home User Guide	Once a purchaser completes their sale, a homeowner pack will be provided which will include: Homeowner manual – to 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 utilities and communication providers, contact details for all relevant suppliers and User Instructions for appliances and devices in the property.	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

4.8 Transport and Accessibility

Measure	Description	Benefit
Access to Public Transport	The site is located c. 10 minutes' walk to the Luas,	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.
Bicycle Parking	Secure long-term bicycle parking spaces are proposed	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle

5. Building Investment Fund

In accordance with the MUDs Act, the OMC will allocate a certain portion of funds towards a sinking fund, in order to adequately resource long-term replacement of components. The Building Investment Fund table below illustrates what could be incorporated in the calculation of a Sinking Fund:

Element	Life Expectancy
<i>Roofs</i>	
Replacement membrane roof covering to main roofs	18
Replacement parapet details	18
Replace roof access hatches	25
Specialist Roof Systems - Fall arrest	25
Waterproofing details to penthouse paved areas	12
<i>Elevations</i>	
Brick Re-pointing	80
Minor repairs to render areas	18
Replace exit/entrance doors	25
Replace rainwater goods	25
Replace balcony floor finishes	25
<i>External Areas/Car Parking</i>	
External handrails and guarding	18
Surface finishes	18
Check drains for accumulation of debris and other sediments	6
Repaint parking spaces and numbering	7
Replace bike stands	25
Replace access control at entrances	12
<i>M&E Services</i>	
Internal re-lamping common areas	7
Replace internal light fittings	18
Replace external light fittings	18
Replace smoke detector heads	10
Replace manual break glass units	18
Replace fire alarm panel	18
Replace lift car and controls	25
Replace AOVs	25
Emergency lighting	20
External mains water connection	20