

# Building Life Cycle Report

Lands at Auburn, Malahide  
for  
Kinwest Ltd.



CONROY CROWE KELLY  
Architects & Urban Designers

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## 0.0 INTRODUCTION

This Building Life Cycle Report has been prepared for the proposed residential development on lands at Lands at Auburn, Malahide, 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 Building Life Cycle Report document 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 at the time of application.

Section 2: Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.

## **0.1 DESCRIPTION OF PROPOSED DEVELOPMENT**

The proposed development will consist of the preservation and protection of the existing Protected Structure of Auburn House as 1 no. residential dwelling; the conversion of the existing stables of Auburn House to accommodate 4 no. dwellings and the construction of 406 no. residential dwellings, apartments and duplexes providing for an overall total of 411 no. residential units (102 no. dwellings, 266 no. apartments & 43 no. duplexes) along with 1 no. childcare facility and a 2-storey detached community building within the Walled Garden, for use as part of the overall ancillary residential facilities. The development will also include the preservation and protection of the existing woodland of Auburn House, the preservation of existing follies and walls associated with the 'walled garden' with amendments to the garden proposed to accommodate the proposed development and landscaping including provision of public, communal and private open spaces, playground and boundary treatments.

## **SECTION 1**

### **1.0 ASSESSMENT OF LONG-TERM RUNNING AND MAINTENANCE COSTS**

#### **1.1 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 residents. The PSP will ensure that the interests of the residents are protected by executing the block management plans 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 each 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 multi-unit buildings, as well as landscaped areas in their vicinity.

The OMC's operational budgets will benefit from the utilisation of a Planned Preventative Maintenance (PPM) programme. The PPM will be completed annually for each apartment and duplex apartment building to include the shared internal and external common areas. Consideration will be given to the ongoing maintenance of the buildings 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.

#### **1.2 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.

## **2.0 MEASURES TO MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS**

The proposed layouts make efficient use of the land. The buildings have been designed with a low number of stair and lift cores in order to increase efficiencies and ensuring that service charges and maintenance costs faced by residents into the future are kept at reasonable levels.

The apartment design has followed the principles of the BRE guide - "Site Layout Planning for Daylight and Sunlight". Good levels of sunlight will also be available in the development's amenity areas. When this guidance is followed the end result is generally a site which is positioned and laid out in such a way which will provide adequate levels of sun lighting and daylighting while creating an ambience that will appeal to any building occupant and reduce the lighting costs.

Lifecycle costs are also determined by the durability and maintenance requirements of materials. We have selected the very highest standard of finishes across the project. Low maintenance cladding materials such as brick and self-finished render are proposed to minimise the impact of façade maintenance. Balconies are designed to be capable of fabrication offsite, resulting in higher standard of finish, reducing damage during construction and improved durability. Building materials proposed for use on apartment block elevations and in the public realm 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, steel and metal 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. A general outline of the primary materials used in the scheme can be found below.

Measures are addressed under following headings:

- **(2.1) Building Design**
- **(2.2) External Building Fabric Material Selection**
- **(2.3) Internal Building Fabric Material Selection**
- **(2.4) Energy and Building Services**
- **(2.5) Landscape Material Selection**
- **(2.6) Waste Management Plan**
- **(2.7) Human Health and Well-being**
- **(2.8) Transport and Accessibility**

## 2.1 BUILDING DESIGN

Measure	Description	Benefit
Daylighting to units	As outlined in 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (December 2020)': 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'. Please refer to Daylight Assessment Report prepared by Waterman Moylan Consulting Engineers submitted with this application.	Reduces the requirement for continuous daylighting, thus reducing the expense of artificial lighting
Daylighting to circulation areas	Natural lighting provided via tall windows at circulation cores.	Reduces the requirement for continuous artificial lighting.
External Lighting	External lighting will comply with the latest standards and achieve: <input type="checkbox"/> Low-level lighting <input type="checkbox"/> Utilise low voltage LED lamps <input type="checkbox"/> Minimum upward light spill 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. Please refer to Sabre Lighting Layout and Report submitted with this application.	Lighting will be designed to achieve the required standards, provide a safe environment for pedestrians, cyclists, and vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna.

## 2.2 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.
Metal Cladding	Metal facade panels on galvanised metal rainscreen support system at penthouse and stair cores with typical life expectancy of 25 years.	Aesthetic impact, durability and weathering. Annual inspection and cleaning every 5 years.
Render	Used very minimally throughout the scheme. Where specified it will be a 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.
Sedum Roof	Extensive Green Roof System. Average life cycle of 13-35 years. Life cycle extended with robust proven detailing and appropriate regular maintenance quarterly every year.	Attenuation for storm water run off and less burden and maintenance of rainwater goods. Increased thermal and sound insulation to the building, aesthetic appeal and increased biodeversity.
Pitched Roofs	Fibre-cement slate roofing, solid and inert.	Durable and longlasting material requires minimal maintenance and repair.
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.
Steel and Glass Balustrades	Powder coated steel finish	Requires minimal ongoing maintenance

### **2.3 INTERNAL BUILDING FABRIC MATERIAL SELECTION**

<b>Measure</b>	<b>Description</b>	<b>Benefit</b>
Floors – apartment stair cores and entrances	Selected anti-slip porcelain or ceramic floor tile with inset mat well at entrance doors as required. Life span of 20-25 years.	Low maintenance and easily cleaned.
Floors – lobbies/corridors	Selected carpet inlay on underlay. 13 years life span typically. Regular cleaning by property maintenance team.	Attractive aesthetic for residents and flexibility to change in the future.
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.



## 2.4 ENERGY AND BUILDING SERVICES

Measure	Description	Benefit
Nearly Zero Energy Building specifications (nZEB)	The dwellings 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 $\geq 0.70$	Effective reduction of thermal energy demand
Thermal bridging	Acceptable Construction Details employed. Thermal bridging measured, with resultant values lower than the default.	Effective reduction of thermal energy demand
Airtightness	3 to 3.5 $\text{m}^3/\text{m}^2.\text{h}$ @ 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

## **2.5 LANDSCAPE MATERIAL SELECTION**

<b>Measure</b>	<b>Description</b>	<b>Benefit</b>
Paving and Decking Materials	Use of robust high-quality materials and detailing to be durable for bikes, play, etc.	Ensures the longevity of materials.
Site Layout & Landscaping Design	High quality landscaping both hard surface (for the cycle /car parking and pavements) and soft landscaping with planting and trees. The landscaping will be fully compliant with the requirements for Part M / K of the Technical Guidance Documents and will provide level access and crossings for wheelchair users and pedestrians with limited mobility. Designated car parking including accessible & visitor car parking reduces the travel distances for visitors with reduced mobility. The landscape design approach is to provide a variety of high-quality durable communal recreation areas for residents within the blocks 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.	Plenty of room for cycles and pedestrians along with car spaces provide a good balance between pedestrians and car users. Wheelchair user-friendly. A landscape maintenance company will be retained by the OMC(s) to ensure regular maintenance improves the quality of the living environment for all residents.
Balconies & openable windows	Use of balconies & openable windows allow individuals to clean windows themselves.	Reduces the cost and reliance on 3rd party cleaning & maintenance

## **2.6 WASTE MANAGEMENT**

<b>Measure</b>	<b>Description</b>	<b>Benefit</b>
Construction Waste Management Plan	The application is accompanied by a Construction Waste Management Plan by the applicants.	The report demonstrates how the scheme complies with best practice
Storage of Non-Recyclable Waste and Recyclable Household Waste	Domestic waste management strategy: Grey, brown and green bin distinction Competitive tender for waste management collection who will prepare an operational waste management plan for the site.	Helps reduce potential waste charges
Composting	Organic waste bins to be provided throughout	Helps reduce potential waste charges

## 2.7 HUMAN HEALTH AND WELL-BEING

How human health and well-being is been considered:

Measure	Description	Benefit
Natural / day light	The design, separation distances and lay-out of the apartment blocks 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
Accessibility	All units will comply with the requirements of Building Regulations, Technical Guidance Documents Parts K and M	Reduces the level of adaptation, and associated costs potentially necessitated by residents' future circumstances.
Security	The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: <ul style="list-style-type: none"> <li>• CCTV monitoring details</li> <li>• Secure bicycle stands</li> <li>• Overlooked communal open space in the form of a courtyard</li> </ul>	Helps to reduce potential security/ management cost
Natural Amenity	The site has a very high quality of natural amenity space. Existing mature trees by the Dublin Road, along the existing avenue to Auburn House, in the woodland behind Auburn House and within the Walled Garden have been preserved and will offer ecologically diverse routes for residents to enjoy in addition to the principal public open space in the Front Field, additional smaller parks throughout the site as well as communal amenity spaces adjacent to the apartment blocks. Play areas have been provided in both the communal amenity areas as well as in the public open spaces and the woodland will provide opportunities for natural play and exploration for residents also. Please refer to TBS Landscape proposals for further details.	Facilitates community interaction, socialising and play- resulting in improved well being

## **2.8 TRANSPORT & ACCESSIBILITY**

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

<b>Measure</b>	<b>Description</b>	<b>Benefit</b>
Access to Public Transport	<p>The development is located c1.7km from Malahide Dart station. This is a c.25 minute walk or a 10 minute cycle. The site is directly across the road from the Malahide Demesne entrance.</p> <p>There are already bus stops at the site entrance which provides public transport into Malahide and Dublin city centre. However the availability of the Demesne route to the town centre will always make walking and cycling a very attractive option. The original avenue to the house is preserved as the main pedestrian and cycle way into the site and this forms a pleasant transition from the centre of the new residential quarter to the Demesne parkland.</p>	Availability, proximity to bus and railway services reduces the reliance on the private motor.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Domestic waste management strategy: Grey, brown and green bin distinction Competitive tender for waste management collection	Helps reduce potential waste charges
Composting	Organic waste bins to be provided throughout	Helps reduce potential waste charges

### **3.0 Building Investment Fund**

In accordance with the MUDs Act, the OMC(s) 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:

<b>Element</b>	<b>Life Expectancy</b>
<i>Roofs</i>	
Replacement felt roof covering incl. insulation to main roofs	18
Replacement parapet, fascia 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
Metal Panels - recoating	25
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&amp;E Services</i>	
Internal re-lamping common areas	7
Replace internal light fittings	18
Replace external light fittings	18
Replace smoke detector heads	18
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