

BUILDING LIFECYCLE REPORT

SEA GARDENS
PHASE 1 BLOCK 'A'
LARGE-SCALE
RESIDENTIAL
DEVELOPMENT

FORMER BRAY GOLF
CLUB LANDS, DUBLIN
ROAD AND
RAVENSWELL ROAD,
BRAY, Co. DUBLIN



CLIENT

SHANKILL PROPERTY
INVESTMENTS LIMITED

aramark 

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EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY – BUILDING LIFE CYCLE REPORT

Measures to effectively manage and reduce costs for the benefit of residents.

The following document reviews the outline specification set out for Sea Gardens Phase 1 Block 'A' proposed Large-scale Residential Development (LRD) on a site at the former Bray Golf Club Lands off the Dublin Road and Ravenswell Road, Bray, County Dublin. The proposed residential development will consist of 159 no. residential units over/around a shared 2-level podium comprising 9 no. 3 to 4 storey - terraced townhouses and 150 no. apartments in 2 no. blocks ranging in height from 6 to 10-storeys (Block A1 – 69 units) and 7 to 11-storeys (Block A2 – 81 units) and explores the practical implementation of the design and material principles which have informed design of roofs, façades, internal layouts and detailing of the proposed development and building typologies.

Building materials proposed for use on 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, as well as both soft and hardscape in the public, semi-public and private realm, and communal open space will contribute to lower maintenance costs for future residents and occupiers.

This report has been prepared on the basis of information available at planning stage. This report reflects the outline material descriptions contained within Howells' Architectural Design Statement and planning drawings received.

For any elements where information was not available, typical examples have been provided of building materials and services used for schemes of this nature and their associated lifespans and maintenance requirements. All information is therefore indicative subject to confirmation at detailed design stage.

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 in a summary document. 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, this will take the form of a Planned Preventative Maintenance Schedule (PPM) at operational commencement of the development.



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DESCRIPTION OF DEVELOPMENT

2.0 DESCRIPTION OF DEVELOPMENT

The proposed development comprises the following:

- The proposed development will consist of 159 no. residential units over/around a shared 2-level podium comprising of: 9 no. 3 to 4-storey terraced townhouses with associated private terraces, comprising 5 no. 4-bedroom and 4 no. 4-bedroom townhouses; and 150 no. apartments in 2 no. blocks consisting of 48 no. 1-bedroom units, 58 no. 2-bedroom units, 44 no. 3-bedroom units.
- The apartment blocks will comprise of: Block A1 ranging in height from 6 to 10-storeys and containing 69 no. units consisting of 22 no. 1-bedroom units, 26 no. 2-bedroom units, 21 no. 3-bedroom units all with balconies or terraces, and residential amenity space including a c. 169.7 sq.m work / lounge space and c. 169.3 sq.m communal gym at ground floor level, a c. 33.5 sq.m lobby and c. 52.9 sq.m cinema room at courtyard level; and Block A2 ranging in height from 7 to 11-storeys and containing 81 no. units consisting of 26 no. 1-bedroom units, 32 no. 2-bedroom units, 23 no. 3-bedroom units all with balconies or terraces, and residential amenity space including a c. 63.6 sq.m lobby / lounge at ground floor level, a c. 16 sq.m lobby at courtyard level and c. 235.6 sq.m of bulk storage space at courtyard level.
- The proposed development will include 172 no. car parking spaces comprising 160 no. resident spaces and 9 no. accessible spaces. 167 no. of these spaces will be within the shared 2-level podium, and 5 no. spaces will be within the private garages of the western terraced houses. 20% of all spaces will be provided with direct EV charging facilities. The proposed development will also include 8 no. resident motorcycle spaces within the shared 2-level podium and 365 no. bicycle parking spaces comprising 332 no. resident spaces within the shared 2-level podium and 33 no. visitor spaces at surface level.
- The proposed development will also include: c. 1,874 sq.m communal open space within the central podium courtyard; c. 7,363 sq.m public open space including play areas; all associated landscaping, public lighting, pedestrian / cycle linkages with adjoining existing and permitted developments; associated connections to the surrounding existing and permitted road network; all associated plant and substations/switch rooms; refuse storage areas; drainage arrangements; utility connections; and all site development works.



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INTRODUCTION

3.0 INTRODUCTION

Aramark Property were instructed by Shankill Property Investments Limited, to provide a Building Lifecycle Report for their Sea Gardens Phase 1 Block 'A' proposed Large-scale Residential Development (LRD) consisting of residential units including terraced townhouses, apartments and communal amenities on a site at the former Bray Golf Club Lands off the Dublin Road and Ravenswell Road, Bray, County Dublin.

The purpose of this report is to provide an initial 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 to effectively manage and reduce costs for the benefit of the residents. This is achieved by producing a Building Lifecycle Report.

This Building Lifecycle Report has been developed on foot of the latest guidelines for Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities (July 2023) issued under Section 28 of the Planning and Development Act, 2000 (as amended). Within the new guidelines, new guidance is being provided on residential schemes.

Section 6.12 of the Operation and Management of Apartment Developments (July 2023) requires that:

“planning applications for apartment development 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.”

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EXTERNAL BUILDING FABRIC SCHEDULE

4.0 EXTERNAL BUILDING FABRIC SCHEDULE

4.1 Roofing

4.1.1 Green Roofs (Manufacturer / Supplier TBC)

<i>Location</i>	Selected Flat Roof Areas (maintenance access only)
<i>Description</i>	Extensive green roof system to engineer's specification.
<i>Lifecycle</i>	Average lifecycle of 15-35 years on most green roofs. Lifecycle will be extended with robust proven detailing to adjoining roof elements and appropriate and regular maintenance of the roof materials.
<i>Required maintenance</i>	Quarterly maintenance visits to include inspection of drainage layer and outlets and removal of any blockages to prevent ponding. Inspection of vegetation layer for fungus and decay. Carry out weeding as necessary. No irrigation necessary with sedum blankets.
<i>Year</i>	Bi-annually
<i>Priority</i>	Medium
<i>Selection process</i>	A green roof will add to the character of the overall scheme, as well as providing attenuation to storm water run-off and less burden on rainwater goods, increased thermal and sound insulation to the building and increased biodiversity. Natural soft finishes can provide visual amenity for residents where roof areas are visible or accessible from within areas of the scheme. Sedum roofs are a popular and varied choice for green roofs requiring minimal maintenance.
<i>Reference</i>	Howells Architects' planning drawings & design statement.

4.1.2 Roof Terraces (Manufacturer / Supplier TBC)

<i>Location</i>	Selected Terrace Roof Areas
<i>Description</i>	<ul style="list-style-type: none"> • Intensive green system to architects and engineer's specification. • Selected lightweight precast concrete / stone paving slabs on support system. • Roof build-up to architects' and engineers' instructions.
<i>Lifecycle</i>	Average lifecycle of 25 - 35 years on most roofs. As used across the industry nationally, long lifecycle typically achieved by robust detailing to adjoining roof elements, regular inspection and maintenance regime to ensure the upkeep of roofing product / materials.
<i>Required maintenance</i>	Quarterly maintenance visits to include: <ul style="list-style-type: none"> • Inspection of drainage layer and outlets and removal of any blockages to prevent water build up. • Inspection of metalwork and fixings including railings, planters, flashings, decking and repair/replace as necessary. • Check for displacement of slabs and mortar decay and remove organic matter. Power-washing of hard surfaces.
<i>Year</i>	Quarterly / annual
<i>Priority</i>	Medium
<i>Selection process</i>	Paving slabs provide a robust and long-lasting roof terrace surface, requiring considerably less maintenance when compared to timber decking or gravel surfaces.
<i>Reference</i>	Howells Architects' planning drawings & design statement.

4.1.3 Roof (Manufacturer / Supplier TBC)

<i>Location</i>	Selected Flat Roof Areas (maintenance access only)
<i>Description</i>	<ul style="list-style-type: none"> • Single layer membrane roof system to engineer's specification. • Selected membrane and pressed metal cappings.
<i>Lifecycle</i>	Average lifecycle of 15-25 years on most membrane roofs. Lifecycle will be extended with robust proven detailing to adjoining roof elements and appropriate and regular maintenance of the roof materials.
<i>Required maintenance</i>	Half-yearly maintenance visits to include inspection of membrane material for puncture / cracks on sheeting; seams and flashing details; around drainage and ventilation outlets and removal of any vegetation/moss blockages to prevent ponding.
<i>Year</i>	Half-Yearly / Annual
<i>Priority</i>	Medium
<i>Selection process</i>	Membrane roof with appropriate built-up system will provide durability, lacks water permeability, and easily maintain without shutting down building operations during application.
<i>Reference</i>	Howells Architects' planning drawings and design statement.

4.1.4 Fall Arrest System for Roof Maintenance Access

<i>Location</i>	Selected Flat roof areas (maintenance access only)
<i>Description</i>	<ul style="list-style-type: none"> • Fall Protection System on approved anchorage device. • Installation in accordance with BS 7883:2019 (Anchor System designed to protect people working at height) by the system manufacturer or a contractor approved by the system manufacturer.
<i>Lifecycle</i>	25-30 years dependent on quality of materials. Generally, steel finishes to skyward facing elements can be expected to maintain this life expectancy. As used across the industry nationally, long lifecycles are typically achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Check and reset tension on the line as per manufacturer's specifications. Check all hardware components for wear (shackles, eye bolts, turn buckles). Check elements for signs of wear and/or weathering. Lubricate all moving parts. Check for structural damage or modifications.
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	Fall protection systems are a standard life safety system, provided for safe maintenance of roofs and balconies where there is not adequate parapet protection. Fall protection systems must comply with relevant quality standards.
<i>Reference</i>	N/A

4.1.5 Roof Cowls

<i>Location</i>	Selected Flat Roof Areas
<i>Description</i>	Roof Cowl System to be supplied with weather apron for flat roofs.
<i>Lifecycle</i>	25-35 years. As used across the industry nationally, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Check fixings annually, inspect for onset of leading-edge corrosion if epoxy powder coat finishes and treat.
<i>Year</i>	Annually
<i>Priority</i>	Low
<i>Selection process</i>	Standard fitting for roof termination of mechanical ventilation system.
<i>Reference</i>	N/A

4.1.6 Flashings

<i>Location</i>	All flashing locations
<i>Description</i>	Appropriate materials to be used for all flashing and counter flashings.
<i>Lifecycle</i>	Typical life expectancy of 70 years recorded for flashings. Recessed joint sealing requires regular inspections. Longer lifecycle achieved by regular inspection and maintenance regime to ensure upkeep of materials.
<i>Required maintenance</i>	Check joint fixings for flashing, ground survey annually and close-up inspection every 5 years. Re-secure as necessary.
<i>Year</i>	Ground level inspection annually and close-up inspection every 5 years
<i>Priority</i>	Medium
<i>Selection process</i>	Alternatives to lead has longest life expectancy of comparable materials such as copper (60 years) and zinc (50 years). Provided appropriate safety precautions are taken, lead is the recommended choice for large residential, commercial, or industrial builds. Lead is easily formed into the required shapes for effective weathering of building junctions according to standard Lead Sheet Association details.
<i>Reference</i>	N/A

4.2 Rainwater Drainage

<i>Location</i>	All buildings
<i>Description</i>	<ul style="list-style-type: none"> • <i>Rainwater outlets:</i> Suitable for specified roof membranes • <i>Pipework:</i> Cast aluminium and uPVC rainwater goods • <i>Below ground drainage:</i> To Engineers' design and specification • <i>Disposal:</i> To surface water drainage to Engineers' design • <i>Controls:</i> To Engineers' design and specification • <i>Accessories:</i> allow for outlet gradings, spigots, downspout nozzle, hopper heads, balcony and main roof outlets
<i>Lifecycle</i>	Metal gutters and downpipes have an expected life expectancy of 40 years in rural and suburban conditions (25 years in industrial and marine conditions), this is comparable to cast iron of 50 years and plastic, less so at 30 years. As used across the industry nationally, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	As with roofing systems routine inspection is key to preserving the lifecycle of rainwater systems. Regular cleaning and rainwater heads and gutters, checking joints and fixings and regularly cleaning polyester coated surfaces (no caustic or abrasive materials).
<i>Year</i>	Annually, cleaning bi-annually
<i>Priority</i>	High
<i>Selection process</i>	As above, metal fittings compare well against cast iron (in terms of cost) and plastic (in terms of lifespan and aesthetic).
<i>Reference</i>	N/A

4.3 External Walls

4.3.1 Brick (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	Contrasting light and dark tone brickwork to select locations.
<i>Lifecycle</i>	When permanently exposed to coastal environments, selected bricks have a high embodied energy and are an extremely durable material. Brickwork in this application is expected to have a lifespan of 50-80 years. The mortar pointing, however, has a shorter lifespan of 25-50 years. Longer lifecycle achieved by regular inspection and maintenance regime.
<i>Required maintenance</i>	In general, given their durability and longevity, brickwork finishes require little maintenance. However, where sea salt build-up on brickwork is visible, routine brushing with controlled wash-down required as part of maintenance regime. Most maintenance is preventative: checking for hairline cracks, deterioration of mortar, plant growth on walls, or other factors that could signal problems or lead to eventual damage.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Aesthetic, lightweight, cost-efficient and low maintenance cladding option, indistinguishable from traditional brick construction.
<i>Reference</i>	Howells Architects planning drawings & design statement.

4.3.2 Metal (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> Aluminium clad window and door frames to selected colour. Powder Coated Aluminium curtainwall system, louvres and infill panels to selected colour. Powder Coated Aluminium balcony/balustrade/railings/gates to selected colour.
<i>Lifecycle</i>	Lifespan expectancy generally in excess of 40 years. As used across the industry nationally, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Metal cladding requires little maintenance and is resistant to corrosion. It can contribute to lower ongoing maintenance costs in comparison to exposed porous materials which may be liable to faster deterioration. Long term cleaning requirements should be taken into consideration.
<i>Year</i>	Inspection annually; cleaning 5 yearly
<i>Priority</i>	Low
<i>Selection process</i>	Metal cladding protects the building's structure from rainwater and weathering. Metal cladding systems are also chosen for their aesthetic impact, durability and weathering properties.
<i>Reference</i>	Howells Architects planning drawings & design statement.

4.3.3 Concrete (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> Concrete coping to match brickwork colour. Concrete cill to selected colour. Pigmented ribbed/smooth precast concrete to selected colour.
<i>Lifecycle</i>	While concrete has a high embodied energy, it is an extremely durable material. As used nationwide, typically longer lifecycles are achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	In general concrete requires little maintenance. Most maintenance is preventative: checking for hairline cracks, vegetation growth on facades, or other factors that could signal problems or lead to eventual damage.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Concrete is a durable product which is chosen for its structural properties, aesthetic, cost efficiency and rapid construction.
<i>Reference</i>	Howells Architects' planning drawings & Design Statement.

4.4 External Windows & Doors

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> • Mixture of clear and obscure glazed windows with Aluminium coated frames to select finish. • All units to be double glazed with thermally broken frames. • All opening sections in windows to be fitted with suitable restrictors. Include for all necessary ironmongery; include for all pointing and mastic sealant as necessary; fixed using stainless steel metal straps screwed to masonry reveals; include for all bends, drips, flashings, thermal breaks etc.
<i>Lifecycle</i>	Aluminium has a typical lifespan of 30-40 years. As used nationwide, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Check surface of windows and doors regularly so that damage can be detected. Vertical moldings can become worn and require more maintenance than other surface areas. Lubricate at least once a year. Ensure regular cleaning regime. Check for condensation on frame from window and ensure ventilation.
<i>Year</i>	Annual
<i>Priority</i>	Medium
<i>Selection process</i>	Aluminium is durable and low maintenance with an average lifespan of 30-40 years. Alu-clad timber windows compare favourably when compared to the above, extending timber windows typical lifespan of 35-50 years by 10-15 years.
<i>Reference</i>	N/A

4.5 Balconies

4.5.1 Structure

<i>Location</i>	Apartment Block Façades
<i>Description</i>	<ul style="list-style-type: none"> • Concrete balcony system to engineer's detail, or • Powder-coated steel frame balcony system to engineer's detail suitable for coastal environments. • Thermally broken farrat plate connections to main structure of building.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Metal structure has a typical life expectancy of 70 years dependent on maintenance of components. • Precast concrete structures have a high embodied energy; however, it is an extremely durable material. Concrete frame has a typical life expectancy of 80 years. • As used across the industry nationally, longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Relatively low maintenance required. Check balcony system as per manufacturer's specifications. Check all hardware components for wear. Check elements for signs of wear and/or weathering. Check for structural damage or modifications.
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Engineered detail; designed for strength and safety.
<i>Reference</i>	N/A

4.5.2 Balustrades and Handrails

<i>Location</i>	Apartment Block Balconies
<i>Description</i>	<ul style="list-style-type: none"> • Powder-coated aluminum frame balcony system to engineer's design and specification suitable for coastal environments. • Fixing in accordance with manufacturer's details.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Metal structure has a typical life expectancy of 70 years dependent on maintenance of components. • In general, given their durability and longevity, metal finishes require little maintenance. However, where sea salt build-up on metal finishes is visible, routine brushing with controlled wash-down required as part of maintenance regime. <p>Longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.</p>
<i>Required maintenance</i>	Annual visual inspection of connection pieces for impact damage or alterations.
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Metal and glass options will have a longer lifespan and require less maintenance than timber options (10-20 years).
<i>Reference</i>	N/A

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INTERNAL BUILDING FABRIC SCHEDULE

5.0 INTERNAL BUILDING FABRIC SCHEDULE

5.1 Floors

5.1.1 Common Areas

<i>Location</i>	Entrance lobbies / Common corridors
<i>Description</i>	<ul style="list-style-type: none"> Selected anti-slip porcelain floor tile complete with inset matwell. Selected loop pile carpet tiles.
<i>Lifecycle</i>	<ul style="list-style-type: none"> 20-30 years lifespan for floor tiles in heavy wear areas. Likely requirement to replace for modernisation within this period also. 10–15-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection with regular cleaning, intermittent replacement of chipped / loose tiles
<i>Year</i>	<ul style="list-style-type: none"> Annual for floor tiles. Quarterly inspection and cleaning of carpets as necessary
<i>Priority</i>	Low
<i>Selection process</i>	Durable, low maintenance floor finish. Slip rating required at entrance lobby, few materials provide this and are as hard wearing. Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility.
<i>Reference</i>	N/A

<i>Location</i>	Stairwells, landings / half landings
<i>Description</i>	Selected carpet covering. Approved anodised aluminium nosing's to stairs.
<i>Lifecycle</i>	<ul style="list-style-type: none"> 10–15-year lifespan for carpet. Likely requirement to replace for modernisation within this period also. 20-year lifespan for aluminium nosing's.
<i>Required maintenance</i>	Visual inspection with regular cleaning.
<i>Year</i>	Quarterly inspection and cleaning as necessary.
<i>Priority</i>	Low
<i>Selection process</i>	Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility.
<i>Reference</i>	N/A

<i>Location</i>	Lift Lobbies
<i>Description</i>	Carpet/vinyl and porcelain tiles to match adjacent apartment common lobbies.
<i>Lifecycle</i>	<ul style="list-style-type: none"> 20-30 years lifespan for floor tiles in heavy wear areas. Likely requirement to replace for modernisation within this period also. 10–15-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection with regular cleaning, intermittent replacement of chipped / loose tiles.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Slip rating required for lifts, few materials provide this and are as hard wearing. Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility.
<i>Reference</i>	N/A

5.1.2 Tenant Areas

<i>Location</i>	Resident Amenity (e.g. Lounge Areas, Gymnasium, amenity facilities, etc)
<i>Description</i>	<ul style="list-style-type: none"> • Timber laminate / parquet flooring, or • Carpet covering • Provide for inset matwell
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Laminated / parquet timber flooring has an expected life expectancy of 25-35 years dependent on use. • 10-15 year lifespan for carpet. Likely requirement to replace for modernisation within this period also
<i>Required maintenance</i>	Visual inspection. Sweep clean regularly ensuring to remove any dirt. Clean up spills immediately and use only recommended floor cleaners.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Materials chosen for aesthetics, durability and low maintenance.
<i>Reference</i>	N/A

<i>Location</i>	All wet areas (e.g., gymnasium WC's)
<i>Description</i>	Selected anti-slip ceramic floor tile.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas, likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection, intermittent replacement of chipped / loose tiles.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Slip rating required at entrance lobby, few materials provide this and are as hard wearing.
<i>Reference</i>	N/A

5.2 Walls

5.2.1 Common Areas

<i>Location</i>	Entrance lobbies / Corridors
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard.
<i>Lifecycle</i>	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Regular maintenance required and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish.
<i>Reference</i>	N/A

<i>Location</i>	Lift cores / lobbies / corridors / stairs
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard.
<i>Lifecycle</i>	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Regular maintenance required and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish.
<i>Reference</i>	N/A

5.2.2 Tenant Areas

<i>Location</i>	Resident Amenity (e.g. Lounge areas, Gymnasium, amenity facilities, etc)
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard
<i>Lifecycle</i>	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Regular maintenance required and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish.
<i>Reference</i>	N/A

<i>Location</i>	Wet areas (e.g., gymnasium WC's)
<i>Description</i>	Selected ceramic wall tile to plasterboard (moisture board to wet areas).
<i>Lifecycle</i>	Typical life expectancy of 35-40 years, less in wet room areas to 20-25 years.
<i>Required maintenance</i>	Bi-annual inspection to review damage, local repairs as necessary, particular detailed inspection in wet room areas.
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	Wet room application requires moisture board and tiling.
<i>Reference</i>	N/A

5.3 Ceilings

<i>Location</i>	Common areas & tenant amenity areas
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard ceiling on metal frame ceiling system. Acoustic ceiling to lift core and apartment lobbies. Moisture board to wet areas.
<i>Lifecycle</i>	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Regular maintenance required and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish
<i>Reference</i>	N/A

5.4 Internal Handrails & Balustrades

<i>Location</i>	Stairs & landings
<i>Description</i>	Mild steel painted balustrade and handrail.
<i>Lifecycle</i>	Over 40 years typical lifecycle. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	Regular inspections of holding down bolts and joints
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	Hard-wearing long-life materials against timber options
<i>Reference</i>	N/A

5.5 Carpentry & Joinery

5.5.1 Internal Doors and Frames

<i>Location</i>	All buildings
<i>Description</i>	<ul style="list-style-type: none"> Selected white primed and painted/varnished solid internal doors, or hardwood veneered internal doors. All fire rated doors and joinery items to be manufactured in accordance with EN 13501 (Fire Tests). Timber saddle boards. Brushed aluminium door ironmongery or similar
<i>Lifecycle</i>	30 years average expected lifespan. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear
<i>Year</i>	Annual
<i>Priority</i>	Low, unless fire door High
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

5.5.2 Skirtings & Architraves

<i>Location</i>	All buildings
<i>Description</i>	Painted timber / Medium-density fibreboard (MDF) skirtings and architraves
<i>Lifecycle</i>	30 years average expected lifespan. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

5.5.3 Window Boards

<i>Location</i>	All Buildings
<i>Description</i>	Painted timber / Medium-density fibreboard (MDF) window boards
<i>Lifecycle</i>	30 years average expected lifespan
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

06

BUILDING SERVICES



6.0 BUILDING SERVICES

6.1 Mechanical Systems

6.1.1 Mechanical Plant

<i>Location</i>	Residential Units
<i>Description</i>	Space Heating is proposed to consist of either Centralised Heating powered by Air Source Heat Pumps. (ASHP) and individual monobloc Air Source Heat Pumps (ASHP) and external Exhaust Air Heat Pumps. (EAHP) Corridor Space Heating is proposed to consist of Electric Panel Radiators. Further details to be provided by Mechanical & Electrical (M&E) Consultant at detailed design stage.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual Maintenance / Inspection to Heating System • Annual Maintenance / Inspection of Air Source Heat Pumps. • Annual Maintenance / Inspection of Exhaust Air Heat Pumps. • Annual Maintenance / Inspection to Heating and Water Pumps. • Annual Maintenance / Inspection to Water Tanks. • Annual Maintenance / Inspection to Water Booster - sets. • Annual Maintenance / Inspection to DHS Tanks. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage. • Replacement of equipment at End of Life (EOL) to be determined at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

6.1.2 Soils and Wastes

<i>Location</i>	All Areas / Kitchens / Bathrooms etc
<i>Description</i>	Soils and Wastes Pipework – uPVC and High-Density Polyethylene. (HDPE)
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual inspections required for all pipework within landlord areas. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

6.1.3 Water Services

<i>Location</i>	Residential Units
<i>Description</i>	Water Heating is proposed to consist of a Centralised Cold and Hot Water system utilising Air Source Heat Pumps (ASHP) to generate Low-Temperature Hot Water (LPHW) and Domestic Hot Water. (DHW) Each individual Residential Unit shall be equipped with a Heat Interface Unit (HIU's) for efficient distribution of both Low-Pressure Hot Water and Domestic Hot Water. Further details to be provided by Mechanical & Electrical (M&E) Consultant at detailed design stage.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual Maintenance / Inspection of Air Source Heat Pumps. • Annual Maintenance / Inspection of Heat Interface Units. • Annual Inspection required of all pipework within landlord areas. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

6.1.4 Ventilation Services

<i>Location</i>	Residential Units
<i>Description</i>	Mechanical Extract Ventilation (MEV) to M&E Design.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual inspection of extract fan / and grilles • Annual Inspection of operation of fan and boost / setback facility if provided on units. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

6.2 Electrical / Protective Services

6.2.1 Electrical Infrastructure

<i>Location</i>	Switch rooms / Risers
<i>Description</i>	Maintenance of Electrical Switchgear
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual Inspection of Electrical Switchgear and switchboards. • Thermographic imaging of switchgear 50% of Medium Voltage (MV) Switchgear Annually and Low Voltage (LV) switchgear every 3 years. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Every three years to be included as part of Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet and exceed Electricity Supply Board (ESB), IS10101:2020, Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommendations and be code compliant in all cases.
<i>Reference</i>	N/A

6.2.2 Lighting Services internal

<i>Location</i>	All Areas – Internal
<i>Description</i>	Lighting – Light-Emitting Diode (LED) throughout with Presence detection in circulation areas and locally controlled in apartments.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual Inspection of All Luminaires • Quarterly Inspection of Emergency Lighting. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required per above remedial works.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current National Standards Authority of Ireland (NSAI) Irish Standard for Emergency Lighting I.S.3217:2013 + A1 2017, Building Regulations Technical Guidance Document Part M and Disability Access Certificate (DAC) Requirements.
<i>Reference</i>	N/A

6.2.3 Lighting Services External

<i>Location</i>	All Areas – External
<i>Description</i>	Lighting – All Light-Emitting Diode (LED) with Vandal Resistant Diffusers where exposed.
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Annual Inspection of All Luminaires • Quarterly Inspection of Emergency Lighting • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required as per the Planned Preventative Maintenance (PPM) schedule.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current National Standards Authority of Ireland (NSAI) Irish Standard for Emergency Lighting I.S.3217:2013 + A1 2017, Building Regulations Technical Guidance Document Part M and Disability Access Certificate (DAC) Requirements.
<i>Reference</i>	N/A

6.2.4 Protective Services – Fire Alarm

<i>Location</i>	All areas – Internal
<i>Description</i>	Fire alarm
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Quarterly Inspection of panels and 25% testing of devices as per IS3218:2013 + A1 2019 requirements. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required as per the Planned Preventative Maintenance (PPM) schedule.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current National Standards Authority of Ireland (NSAI) Irish Standard for Fire Alarm Installations I.S.3218:2013 + A1 2019 and the Fire Cert
<i>Reference</i>	N/A

6.2.5 Protective Services – Fire Extinguishers

<i>Location</i>	All Areas – Internal
<i>Description</i>	Fire Extinguishers and Fire Blankets
<i>Lifecycle</i>	Annual Inspection
<i>Required maintenance</i>	Annual with Replacement of all extinguishers at year 10
<i>Year</i>	Annually
<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	All fire extinguishers must meet the requirements of the National Standards Authority of Ireland (NSAI) Irish Standard for Portable Fire Extinguishers I.S 291:2015 + A1 2022 in relation to the selection, commissioning, installation, inspection and maintenance of portable fire extinguishers.
<i>Reference</i>	N/A

6.2.6 Protective Services – Apartment Sprinkler System (Where Applicable by Fire Cert)

<i>Location</i>	All Areas - Internal
<i>Description</i>	Apartment Sprinkler System
<i>Lifecycle</i>	Weekly / Annual Inspection
<i>Required maintenance</i>	Weekly Check of Sprinkler Pumps and plant and annual testing and certification of plant by specialist.
<i>Year</i>	All
<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	The Apartment sprinkler system shall be installed in accordance with European Standard BS EN 12845:2015 – Fixed firefighting systems. Automatic sprinkler systems. Design, installation, and maintenance.
<i>Reference</i>	N/A

6.2.7 Protective Services – Dry Risers (Where Applicable by Fire Cert)

<i>Location</i>	Common Area Cores of Apartments and Hotel
<i>Description</i>	Dry Risers
<i>Lifecycle</i>	Weekly / Annual Inspection
<i>Required maintenance</i>	Visual Weekly Checks of Pipework and Landing Valves with Annual testing and certification by specialist.
<i>Year</i>	Annually
<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	The system shall be installed in accordance with the Irish Standard IS 391:2020: EN – Fire Hydrant System Equipment & Effective Fire Safety in the Design, Management and Use of Buildings.
<i>Reference</i>	N/A

6.2.8 Fire Fighting Lobby Ventilation (To Fire Consultants Design and Specification)

<i>Location</i>	Common Area Lobbies
<i>Description</i>	Smoke Extract / Exhaust Systems
<i>Lifecycle</i>	<ul style="list-style-type: none"> • Regular Tests of the system • Annual inspection of Fans • Annual inspection of automatic doors and Automatic Opening Vents (AOV) • All systems to be backed up by life safety systems.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance (PPM) Programme.
<i>Year</i>	Weekly / Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

6.2.9 Sustainable Services

<i>Location</i>	Residential Units
<i>Description</i>	Air Source Heat Pumps (ASHP)
<i>Lifecycle</i>	<ul style="list-style-type: none"> Annual Maintenance of Air Source Heat Pumps. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

<i>Location</i>	Car Charging
<i>Description</i>	Electric Car Charging infrastructure within the development to comply with planning conditions and supporting the Part L / NZEB requirements. Full Details to be provided at detailed stage.
<i>Lifecycle</i>	<ul style="list-style-type: none"> Annual Inspection Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of the Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.
<i>Reference</i>	N/A

<i>Location</i>	Roof
<i>Description</i>	Photovoltaic (PV) Solar Panel Thermal Array on roof supporting the Part L / NZEB requirements. Full Details to be provided at detailed stage.
<i>Lifecycle</i>	<ul style="list-style-type: none"> Quarterly Clean Annual Inspection Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Quarterly / Annual Service Inspections to be included as part of the Development Planned Preventative Maintenance (PPM) Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the Chartered Institution of Building Services Engineers of Ireland's (CIBSE) recommended lifecycles.

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APPENDIX 1

7.0 APPENDIX 1 – SCHEDULE FOR COSTS EVALUATION

7.1 Schedule for Cost Evaluation

The Schedule for Costs Evaluation provides a framework to allow costs per apartment, quantified from the development, to be applied. At detailed design stage, schedule of areas and quantity of items is provided by the Architect and Quantity Surveyor to allow quantification of the lifecycle replacement costs during the lifespan of the building.

Further to this, once detailed design is confirmed, annual cost of maintenance will also be calculated to include with the schedule, to complete the overall costs evaluation.

The schedule will be modified to suit when developer's Architect and Quantity Surveyor provide requisite schedules of areas and quantity and cost of items for the development.

The sampled schedule attached lays out all Building Fabric and Building Services Elements, associated specification and locations. These are then quantified as cost per unit, alongside maintenance costs with VAT rate, and broken into Annual Costs, and many specific commentaries, for the eventual end user of the property.



SAMPLE - Life Cycle Costs

Summary of Costs

Element - Building Fabric	Specification	Location(s)	Areas / Quantity	Cost Per Unit	Maintenance Cost	Total Cost	VAT Rate	VAT Inclusive Cost	Anticipated Life Span (Yrs)	Annual Cost	Vat Rate	Vat Inclusive Cost	Comments
Floor Finishes	Carpet	Staircases / Common Areas				€ -	13.5%		12		13.5%		
Floor Finishes	Tiles	Common Areas / Apartments				€ -	13.5%		25		13.5%		
Floor Finishes	Timber	Apartment				€ -	13.5%		12		13.5%		
Wall Finishes	Paint	Staircases / Common Areas				€ -	13.5%				13.5%		
Wall Finishes	Paint	Common Areas / Apartments				€ -	13.5%				13.5%		
Wall Finishes	Paint	Apartment				€ -	13.5%				13.5%		
Roof Coverings	Concrete Roof Tile	Roof				€ -	13.5%		25		13.5%		
Common Area Doors	TBC	Multiple Locations				€ -	13.5%		30		13.5%		
Apartment Doors	TBC	Multiple Locations				€ -	13.5%		30		13.5%		
External Doors	TBC	Multiple Locations				€ -	13.5%		20		13.5%		
Windows	TBC	Apartments				€ -	13.5%		60		13.5%		
External Cladding	TBC	External				€ -	13.5%		60		13.5%		
External Walls	TBC	External				€ -	13.5%		60		13.5%		
Loose furniture	Loose furniture	Apartments				€ -	23.0%		12		23.0%		
Fixtures and Fittings	Kitchens, Wardrobes, etc	Apartments				€ -	13.5%		12		13.5%		
White Goods	Kitchen Appliances	Apartments				€ -	23.0%		7		23.0%		
External Furniture	Seats, Tables, Playground	External				€ -	13.5%		20		13.5%		
Balcony	Flooring, Handrail, Balustrade, etc	External				€ -	13.5%		20		13.5%		
Element - Building Services													
Distribution Network	Pipework Distribution	Select Locations				€ -	13.5%		60	€ -	13.5%		
Gas Fired CHP / ASHP	Gas Fired CHP Units	Select Locations				€ -	13.5%		15	€ -	13.5%		
Gas Fired Boilers	Select Locations	Select Locations				€ -	13.5%		25	€ -	13.5%		
Buffer Vessel	Select Locations	Select Locations				€ -	13.5%		15	€ -	13.5%		
Main Board	External Main Board	Select Locations				€ -	13.5%		30	€ -	13.5%		
Electrical Boards	Landlord Boards	Various Levels				€ -	13.5%		20	€ -	13.5%		
Water Tanks	Replacement Cold Water Mains Water and Fire Tanks	Select Locations				€ -	13.5%		35	€ -	13.5%		
Booster Pumps	Booster Pumps associated with the above	Select Locations				€ -	13.5%		30	€ -	13.5%		
Lifts	Lift Replacement	All Cores				€ -	13.5%		40	€ -	13.5%		
Lighting - Landlord	Car Park, External, Staircases	Various				€ -	13.5%		20	€ -	13.5%		
Fire Alarm	Landlord Fire Alarm	Various				€ -	13.5%		20	€ -	13.5%		
Apartment Boards	Apartment Boards	Apartment				€ -	13.5%		20	€ -	13.5%		
Apartment HIU	Heat Interface Unit	Apartment				€ -	13.5%		20	€ -	13.5%		
Apartment HRU	Ventilation Heat Recovery Unit	Apartment				€ -	13.5%		20	€ -	13.5%		
Site Lighting	External Lighting	Site				€ -	13.5%		20	€ -	13.5%		

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CONCLUSION & CONTACT DETAILS



8.0 CONCLUSION & CONTACT DETAILS

Building materials proposed for use on 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, as well as both soft and hardscape in the public, semi-public and private realm, and communal open space will contribute to lower maintenance costs for future residents and occupiers.

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