

EAST ROAD MIXED-USE DEVELOPMENT

East Road, East Wall, Dublin 1

BUILDING LIFE CYCLE REPORT





DOCUMENT HISTORY

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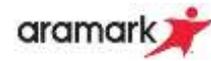
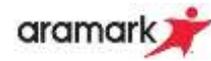


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1.0. INTRODUCTION

Aramark Property were instructed by Glenveagh Living Limited to provide an Estate Management Strategy and Building Lifecycle Report for their proposed mixed-use scheme at East Road, East Wall, Dublin 1.

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.

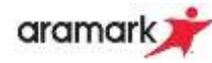
This is achieved by establishing an Estate Management Strategy and Building Lifecycle Report.

The Building Lifecycle Report has been developed on foot of newly revised guidelines for Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) 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 6.13 of the Apartment Guidelines 2018 requires that apartment applications shall:

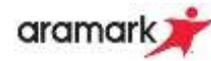
“include a building lifecycle report which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of the residents.”



2.0. DESCRIPTION OF DEVELOPMENT

The proposed development will consist of:-

- Demolition of all existing structures on site.
- Mixed use development set out in 9 no. blocks ranging in height from 3 to 15 storeys to accommodate 554 no. apartments, enterprise space, retail units, food hub/cafe/exhibition space, residential amenity, crèche and men's shed. The site will accommodate car parking spaces, bicycle parking, (241 no. car parking spaces, 810 no. bicycle parking spaces), storage, services and plant areas. Landscaping will include a new central public space and residential podium courtyards.



3.0. 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 the East Road mixed-use development and explores the practical implementation of the design and material principles which has informed design of building roofs, facades, internal layouts and detailing of the proposed development.

Building materials proposed for use on 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, precast concrete and aluminium, as well as hardscape in the public, semi-public and private realm will contribute to lower maintenance costs for future residents and occupiers.

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.

4.0. EXTERNAL BUILDING FABRIC SCHEDULE

4.1. Roofing

4.1.1. Green roof

<i>Location</i>	Flat roof areas
<i>Description</i>	<p>Extensive green roof system</p> <ul style="list-style-type: none"> • Sedum Blanket on; • Extensive Roof Garden Growing Media on; • Drainage & Reservoir Layer on; • Protection Fleece on; • Roof Waterproofing System on; • Insulation layer on; • Screed layer on; • Roof slab to structural engineer's detail.
<i>Lifecycle</i>	Average lifecycle of 13-35 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, no irrigation necessary with Sedum blankets.
<i>Year</i>	Quarterly every year as detailed in the remedial works above.
<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, increased thermal and sound insulation to the building and increased bio-diversity. Natural soft finishes can provide visual amenity for residents where roof areas are visible from within areas of the scheme.
<i>Reference</i>	Sedum roofs are a popular and varied choice for green roofs as they require minimal maintenance.

4.1.2. Paved roof decks

<i>Location</i>	Flat roof areas
<i>Description</i>	<ul style="list-style-type: none"> • Selected paving slabs on; • Pedestal support system on; • Roof waterproofing system on; • Insulation layer on; • Screed layer on; • Roof slab to structural engineer's detail.
<i>Lifecycle</i>	Average lifecycle of 30 years. Generally tends to be a long-lasting material if well maintained and installed appropriately.
<i>Required maintenance</i>	General repair works, watching out for displacement of slabs, mortar decay and removal of organic matter.
<i>Year</i>	Annually

<i>Priority</i>	Medium
<i>Selection process</i>	Paving slabs provide a durable and long-lasting roof terrace surface, requiring considerably less maintenance when compared to timber decking or gravel surfaces.
<i>Reference</i>	N/A

4.1.3. Fall arrest system for roof maintenance access

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • Fall Protection System on approved anchorage device. • Roofing for mechanical attachment through the insulation to various decks. • Weathering to be strictly in accordance with membrane manufacturer's specifications. • <i>Overall system length</i>: Refer to roof plans for indicative layouts. Final layouts and system lengths by appointed sub-contractor. • <i>Intermediate support spacing</i> as per manufacturer's specification. • <i>Accessories/other requirements</i>: items required to complete the installation, e.g. bends and curves in rigid rails, corner units for flexible cable systems, turntables, rotary exit units. • <i>Installation</i>: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer. • <i>Structural anchors</i>: Type recommended by the system manufacturer to suit the structure/fabric into which they will be fixed.
<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.
<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. A FPS must comply with relevant quality standards.
<i>Reference</i>	N/A

4.1.4. Roof cowls

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • Roof Cowl System to be supplied with weather apron for flat roofs. • Stainless Steel goose neck tube to facilitate power supply to external roof level bolted to roof and weathered using proprietary weather apron.
<i>Lifecycle</i>	25-35 years

<i>Required maintenance</i>	Check fixings annually, inspect for onset of leading edge corrosion if epoxy powder coat finish 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

4.1.5. Flashings

<i>Location</i>	All flashing locations.
<i>Description</i>	Lead to be used for all flashing and counter flashings.
<i>Lifecycle</i>	Typical life expectancy of 72 years recorded for lead flashings. Recessed joint sealing will require regular inspections.
<i>Required maintenance</i>	Check joint fixings for lead 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>	Lead has longest life expectancy of comparable materials such as copper (63 years) and zinc (48 years). Lead is easily formed into the required shapes for effective weathering of building junctions according to Lead Sheet Association details.
<i>Reference</i>	N/A

4.2. Rainwater drainage

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • <i>Rainwater outlets:</i> Suitable for specified roof membranes. • <i>Pipework:</i> Cast Aluminium downpipes • <i>Below ground drainage:</i> To M&E/ Structural Engineers design and specification. • <i>Disposal:</i> To surface water drainage to Structural Engineers design. • <i>Controls:</i> To M&E/ Structural Engineers design and specification. • <i>Accessories:</i> allow for outlet gradings, spigots, downspout nozzle, hopper heads, balcony and main roof outlets.
<i>Lifecycle</i>	Aluminium 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 51 years and plastic, less so at 30 years.
<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, aluminium 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. Brickwork

<i>Location</i>	Façades
<i>Description</i>	<p>Dark brick, white brick, red brick to façades.</p> <ul style="list-style-type: none"> • Brickwork outer leaf, insulated cavity concrete blockwork/RC concrete inner leaf, with sand/cement scratch coat, metal clips and plaster board with smooth skim finish. • Mortar joints in brickwork to be white finish with a flush joint.
<i>Lifecycle</i>	While bricks have a high embodied energy, they are an extremely durable material. Brickwork in this application is expected to have a lifespan of 86 years or more. The mortar pointing however has a shorter lifespan of 25-50 years.
<i>Required maintenance</i>	In general, given their durability, brickwork finishes require little maintenance. 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>	Brick is an attractive finish that bears well against other finishing products such as render to blockwork wall in terms of lifespan (86 vs 53 years). The brickwork does require re-pointing however at 25-50 years.
<i>Reference</i>	N/A

4.3.2. Acrylic render

<i>Location</i>	Façades
<i>Description</i>	Acrylic finish render system on insulation layer on concrete blockwork/RC concrete leaf with sand/cement scratch coat, metal clips and plaster board with smooth skim finish.
<i>Lifecycle</i>	Renders in general are expected to have a lifecycle of circa 25 years.
<i>Required maintenance</i>	Regular inspections to check for cracking and de-bonding. Most maintenance is preventative.
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	Acrylic render is an attractive finish with the added benefit of this product being BBA certified against other render systems. Appropriate detailing will contribute to a long lifespan for this installation
<i>Reference</i>	N/A

4.3.3. Zinc cladding

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> • Vertical standing seam zinc cladding system on; • Vertical treated timber battens on; • Breather membrane on; • Plywood sheeting on; • Galvanised metal purlin rail substructure on; • Rigid board insulation on; • Concrete blockwork inner leaf.
<i>Lifecycle</i>	Typical life expectancy of over 35 years.
<i>Required maintenance</i>	Zinc 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>	Zinc 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>	N/A

4.4. External windows & doors

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> • Selected Aluminium/timber composite window system – All units to be double/triple glazed with thermally-broken, aluminium-clad, timber 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 44 years in comparison to uPVC which has a typical lifespan of 37 years. Timber windows have a typical lifespan of 35 – 50 years, aluminium cladding can extend this lifespan by 10-15 years.
<i>Required maintenance</i>	Check surface of windows and doors regularly so that damage can be detected. Vertical mouldings 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>	Anodised aluminium is durable and low maintenance with an average lifespan of 44 years, exceeding uPVC (37 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. Metal structure

<i>Location</i>	Balconies
<i>Description</i>	<ul style="list-style-type: none"> • Propped cantilevered balconies to inner courtyards – Metal frame to engineer’s detail, galvanised, primed with painted finish to selected colour. • Thermally broken farrat-plate connections back to main concrete structure of building. • Pre-oiled Cedar ribbed treated deck boards on steel substructure to engineer’s specification. • Galvanised tray formed between steel substructure to engineer’s specification. • Fibre cement board with open joints to be provided to the balcony soffits.
<i>Lifecycle</i>	70 years dependent on maintenance of components.
<i>Required maintenance</i>	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. Concrete structure

<i>Location</i>	Concrete balconies
<i>Description</i>	<ul style="list-style-type: none"> • Fully cantilevered concrete balconies at selected locations • Thermally broken concrete to concrete connectors back to main concrete structure of building – to Engineers Detail. • Resin finish to concrete deck. • Fibre cement board with open joints to be provided to the balcony soffits.
<i>Lifecycle</i>	While concrete has a high embodied energy, it is an extremely durable material. Concrete frame has a typical life expectancy of 81 years.
<i>Required maintenance</i>	Regular visual inspections of slab junction at connections and general concrete slabs
<i>Year</i>	Annual
<i>Priority</i>	High

<i>Selection process</i>	Engineered detail; designed for strength and safety.
<i>Reference</i>	N/A

4.5.3. Balustrades and handrails

<i>Location</i>	Balconies
<i>Description</i>	<p>Glazed Balustrade Option:</p> <ul style="list-style-type: none"> • Approved glass balustrade. • <i>Guarding:</i> Manufacturer's standard - Frameless tempered glass (safety glass) • <i>Handrails:</i> Manufacturer's standard - Powder coated aluminium handrails. • <i>Fixing:</i> In accordance with manufacturers details. <p>Metal Balustrade Option:</p> <ul style="list-style-type: none"> • Galvanised, primed with painted finish. <p>Winter Gardens:</p> <ul style="list-style-type: none"> • Approved balcony glass system (frameless) • <i>Guarding:</i> Manufacturers standard - Frameless tempered glass (safety glass) • <i>Handrails:</i> Manufacturers standard - Powder coated aluminium handrails. • <i>Fixing:</i> In accordance with manufacturers details.
<i>Lifecycle</i>	General glass and metal items with a 25-45 year lifespan.
<i>Required maintenance</i>	Regular visual inspection of connection pieces for impact damage or alterations.
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Long lifespan versus timber options.
<i>Reference</i>	N/A

5.0. INTERNAL BUILDING FABRIC SCHEDULE

5.1. Floors

5.1.1. Common areas – apartment stair cores & entrances

<i>Location</i>	Ground floor entrance lobby
<i>Description</i>	<ul style="list-style-type: none"> Selected anti-slip porcelain or ceramic floor tile. Provide for inset matwell.
<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

<i>Location</i>	Liftcore and apartment lobbies
<i>Description</i>	Selected anti-slip porcelain or ceramic floor tile border with selected carpet inlay on underlay. Tiles in lifts to match adjacent apartment lobbies.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas for the tiling, 13-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<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>	Stairs
<i>Description</i>	Selected carpet finish on underlay with approved nosings.
<i>Lifecycle</i>	13-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<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

5.1.2. Tenant amenity rooms

<i>Location</i>	Reception area / residents' lounge / multi-purpose - party room
<i>Description</i>	Selected parquet timber flooring with selected underlay. Provide for inset matwell.
<i>Lifecycle</i>	Parquet timber flooring with selected underlay has an expected life expectancy of 25-35 years dependent on use.
<i>Required maintenance</i>	Sweep clean regularly ensuring to remove any dirt. Clean up spills immediately and use only recommended floor cleaners.
<i>Year</i>	Quarterly
<i>Priority</i>	Medium
<i>Selection process</i>	Low maintenance, durable and decorative finish.
<i>Reference</i>	N/A

<i>Location</i>	Games Room / Multi-purpose room
<i>Description</i>	Selected carpet finish on underlay.
<i>Lifecycle</i>	13-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<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>	All other areas
<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

<i>Location</i>	All wet areas
<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 – apartment stair cores & entrances

<i>Location</i>	Ground floor entrance lobby
<i>Description</i>	Selected contract vinyl wall paper feature.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard.
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish. Used as feature in common areas against paint.
<i>Reference</i>	N/A

<i>Location</i>	Lift core and apartment lobbies
<i>Description</i>	Selected contract vinyl wallpaper, class O rated.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard.
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low

<i>Selection process</i>	Decorative and durable finish. Used as feature in common areas against paint.
<i>Reference</i>	N/A
<i>Location</i>	Stairs
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains 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 amenities

<i>Location</i>	Toilets
<i>Description</i>	Selected ceramic wall tile to plasterboard (moisture board to wet areas).
<i>Lifecycle</i>	Typical life expectancy of 37 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

<i>Location</i>	Reception Area / Residents' lounge
<i>Description</i>	Selected wallpaper and selected paint finish with primer to skimmed plasterboard.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard.
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative
<i>Reference</i>	N/A

<i>Location</i>	Meeting room
<i>Description</i>	Selected wallpaper and selected veneer wood finish
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged

<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish. Wallpaper/veneer used as feature in common areas against paint.
<i>Location</i>	Media / cinema room
<i>Description</i>	Selected wallpaper and acoustic panels, selected leather finish.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish with sound insulation properties.
<i>Reference</i>	N/A

5.3. Ceilings

<i>Location</i>	Common & tenant amenity areas
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard ceiling. Acoustic ceiling to liftcore and apartment lobbies.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains 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>	<ul style="list-style-type: none"> Proprietary glazed panel system face fixed to stairs stringer / landing slab edge via polished stainless-steel brackets and clamps fixed to concrete slab to manufacturer's details & specifications. Timber handrail with clear matt varnish finish fixed to brushed stainless steel brackets anchor bolted back to masonry wall or fixed back to glazed balustrade system to manufacturers details and specifications.
<i>Lifecycle</i>	25-30 years typical lifecycle.
<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 solid internal doors. All fire rated doors and joinery items to be manufactured in accordance with B.S. 476. Stainless steel door handles, hinges and locking mechanisms. Timber saddle 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, 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>	Skirtings and architraves. Painted MDF.
<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

5.5.3. Window boards

<i>Location</i>	Residential blocks
<i>Description</i>	Window boards. Painted MDF.
<i>Lifecycle</i>	31 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

6.0. BUILDING SERVICES

6.1. Mechanical Systems

6.1.1. Mechanical plant

<i>Location</i>	<i>Plant Rooms – Basement Level</i>
<i>Description</i>	<i>Centralised Heating Plant– Specification to be further Detailed by Ethos Engineering M&E Heating plant is proposed to consist of Gas fired boilers with Central Air Source Heat Pumps.</i>
<i>Lifecycle</i>	<i>Annual Maintenance / Inspection to Heating System Annual Maintenance of Air Source Heat Pumps Annual Maintenance / Inspection to Heating and Water Pumps. Annual Maintenance / Inspection to Water Tanks. Annual Maintenance / Inspection to Booster-sets. Annual Maintenance / Inspection to DHS Tanks. Annual Maintenance / Inspection of district heating system pipework, valves, accessories and insulation. 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>
<i>Required maintenance</i>	<i>Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme</i>
<i>Year</i>	<i>Annually</i>
<i>Priority</i>	<i>Medium</i>
<i>Selection process</i>	<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 CIBSE recommended lifecycles.</i>
<i>Reference</i>	<i>n/a for this item.</i>

6.1.2. Soils and Wastes

<i>Location</i>	All Areas / kitchens Pods etc
<i>Description</i>	Friopon Acoustic Soils and Wastes Pipework
<i>Lifecycle</i>	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 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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.1.3. Water Services

<i>Location</i>	Apartments, Kitchens, Pods etc
<i>Description</i>	Copper Water Services Pipework and associated fittings and accessories.
<i>Lifecycle</i>	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 Inspections, including legionella testing to be included as part of Development Planned Preventative Maintenance 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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.1.4. Gas Services

<i>Location</i>	Plant Room
<i>Description</i>	Gas Detection Systems.
<i>Lifecycle</i>	Annual Maintenance / Inspection Gas detection systems within landlord plant rooms. 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, testing and certification to be included as part of Development Planned Preventative Maintenance 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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.1.5. Heating Services

<i>Location</i>	Apartment
<i>Description</i>	Heat interface Units (HIU) proposed to be installed at each unit.
<i>Lifecycle</i>	Annual Inspection of Heat Interface Unit in each unit. 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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.1.6. Ventilation Services

<i>Location</i>	Apartment
<i>Description</i>	Heat Recovery Units, Ducting & Grilles (MVHR)
<i>Lifecycle</i>	<p>Annual inspection of extract fan and grilles.</p> <p>Annual Inspection of BMS link and operation of fan and boost / setback facility.</p> <p>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</p>
<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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

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>	Annual Inspection of Electrical Switchgear and switchboards. Thermographic imaging of switchgear 50% of MV Switchgear Annually and 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 Programme
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet and exceed ESB, ETCI , CIBSE recommendations and be code compliant in all cases.
<i>Reference</i>	n/a for this item.

6.2.2. Lighting Services internal

<i>Location</i>	All Areas – Internal
<i>Description</i>	Lighting – LED throughout with Presence detection in circulation areas and locally controlled in apartments.
<i>Lifecycle</i>	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 IS3217, Part M and DAC Requirements.
<i>Reference</i>	n/a for this item.

6.2.3. Lighting Services External

<i>Location</i>	All Areas – Internal
<i>Description</i>	Lighting – All LED with Vandal Resistant Diffusers where exposed.
<i>Lifecycle</i>	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 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 IS3217, Part M and DAC Requirements.
<i>Reference</i>	n/a for this item.

6.2.4. Protective Services – Fire Alarm

<i>Location</i>	All areas – Internal
<i>Description</i>	Fire alarm
<i>Lifecycle</i>	Quarterly Inspection of panels and 25% testing of devices as per IS3218 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 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 IS3218 and the Fire Cert
<i>Reference</i>	n/a for this item.

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>	
<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 I.S 291:2015 Selection, commissioning, installation, inspection and maintenance of portable fire extinguishers.
<i>Reference</i>	n/a for this item.

6.2.6. Protective Services – Apartment Sprinkler System

<i>Location</i>	Apartment
<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>	
<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 BS 9251:2005 – Sprinkler Systems for Residential and Domestic Occupancies – Code of Practice
<i>Reference</i>	n/a for this item.

6.2.7. Protective Services – Dry Risers

<i>Location</i>	Common Area Cores
<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>	
<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 BS 5041 & BS 9999
<i>Reference</i>	n/a for this item.

6.2.8. Car Park Ventilation Services

<i>Location</i>	Car park
<i>Description</i>	Naturally Ventilated
<i>Lifecycle</i>	Annual inspection of Grilles / Louvres
<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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.2.9. Fire Fighting Lobby Ventilation

<i>Location</i>	All Lobby's
<i>Description</i>	Flakt or Colt Systems
<i>Lifecycle</i>	Regular Tests of the system Annual inspection of Fans Annual inspection of automatic doors and AVOs 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 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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6.2.10. Sources of Renewable Energy

<i>Location</i>	Roof / Boiler house
<i>Description</i>	PV Array on roof Supporting the Part L / NZEB requirements in conjunction with Centralised Boiler house and Air Source Heat Pumps
<i>Lifecycle</i>	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
<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 CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.