BUILDING LIFECYCLE REPORT

HOLY CROSS COLLEGE SHD

Holy Cross College, Clonliffe Road, Dublin 3 and Drumcondra Road Lower, Drumcondra, Dublin 9

DOCUMENT HISTORY

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TABLE OF CONTENTS

1.0. INTRODUCTION

Aramark Property were instructed by CWTC Multi Family ICAV acting on behalf of its sub-fund DBTR DR1 Fund to provide a Building Lifecycle Report for their proposed 'Build-to-Rent' SHD residential scheme at Holy Cross College, Clonliffe Road, Dublin 3 and Drumcondra Road Lower, Drumcondra, Dublin 9.

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 revised guidelines for Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities issued under Section 28 of the Planning and Development Act 2000 (as amended) December 2020. Within the new guidelines, new guidance is being provided on residential schemes.

Section 6.13 of the Operation and Management of Apartment Development Guidelines (December 2020) 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."

2.0. DESCRIPTION OF DEVELOPMENT

The development will consist of the construction of a Build To Rent residential development set out in 12 no. blocks, ranging in height from 2 to 18 storeys, to accommodate 1614 no. apartments including a retail unit, a café unit, a crèche, and residential tenant amenity spaces. The development will include a single level basement under Blocks B2, B3 & C1, a single level basement under Block D2 and a podium level and single level basement under Block A1 to accommodate car parking spaces, bicycle parking, storage, services and plant areas. To facilitate the proposed development the scheme will involve the demolition of a number of existing structures on the site.

The proposed development sits as part of a wider Site Masterplan for the entire Holy Cross College lands which includes a permitted hotel development and future proposed GAA pitches and clubhouse.

The site contains a number of Protected Structures including The Seminary Building, Holy Cross Chapel, South Link Building, The Assembly Hall and The Ambulatory. The application proposes the renovation and extension of the Seminary Building to accommodate residential units and the renovation of the existing Holy Cross Chapel and Assembly Hall buildings for use as residential tenant amenity. The wider Holy Cross College lands also includes Protected Structures including The Red House and the Archbishop's House (no works are proposed to these Structures).

The residential buildings are arranged around a number of proposed public open spaces and routes throughout the site with extensive landscaping and tree planting proposed. Communal amenity spaces will be located adjacent to residential buildings and at roof level throughout the scheme. To facilitate the proposed development the scheme will involve the removal of some existing trees on the site.

The site is proposed to be accessed by vehicles, cyclists and pedestrians from a widened entrance on Clonliffe Road, at the junction with Jones's Road and through the opening up of an unused access point on Drumcondra Road Lower at the junction with Hollybank Road. An additional cyclist and pedestrian access is proposed through an existing access point on Holy Cross Avenue. Access from the Clonliffe Road entrance will also facilitate vehicular access to future proposed GAA pitches and clubhouse to the north of the site and to a permitted hotel on Clonliffe Road.

The proposed application includes all site landscaping works, green roofs, boundary treatments, PV panels at roof level, ESB Substations, lighting, servicing and utilities, signage, and associated and ancillary works, including site development works above and below ground.

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 proposed 'Build-to-Rent' SHD residential scheme at Holy Cross College, Clonliffe Road, Dublin 3 and Drumcondra Road Lower, Drumcondra, Dublin 9 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 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 will contribute to lower maintenance costs for future residents and occupiers.

Please note that detailed specifications of building fabric and services have not been provided at this stage. This report reflects the outline material descriptions contained within Henry J. Lyons Architects and O'Mahony Pike Architects' planning drawing pack received in April 2021.

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 further information 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.

**PPM under separate instruction*

4.0. EXTERNAL BUILDING FABRIC SCHEDULE

4.1. Roofing

4.1.1. Green Roof (Manufacturer / Supplier TBC)

Location	Selected Flat Roof Areas (maintenance access only)
Description	Extensive green roof system on roof slab to engineer's detail.
Lifecycle	As used across the industry nationally and in the UK, long lifecycle typically achieved by robust detailing to adjoining roof elements, regular inspection and maintenance regime to ensure the upkeep of roofing product / materials.
Required maintenance	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.
Year	Quarterly every year as detailed in the remedial works above.
Priority	Medium
Selection process	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.
Reference	Henry J. Lyons Architects' planning drawings & Design Statement.

4.1.2. Roof (Manufacturer / Supplier TBC)

Location	Selected Flat Roof Areas (PV Panel Zone)
Description	• Single layer membrane roof system to engineer's specification. • Selected membrane and pressed metal cappings.
Lifecycle	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.
Required maintenance	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.
Year	Half-Yearly / Annual
Priority	Medium
Selection process	A membrane roof with appropriate built up system will provide durability, lacks water permeability and is easily maintained without shutting down building operations during application.
Reference	Henry J. Lyons Architects' planning drawings & Design Statement.

4.1.3. **Roof Terraces (Manufacturer / Supplier TBC)**

Location	Communal Terrace (Roof Garden)
Description	• Paving with light weight slabs on; • Patent pads on; • Cushion layer on; • Roof deck build up to architects' and engineers' instructions.
Lifecycle	As used across the industry nationally and in the UK, long lifecycle typically achieved by robust detailing to adjoining roof elements, regular inspection, and maintenance regime to ensure the upkeep of roofing product / materials.
Required maintenance	Regular maintenance visits to include inspection of drainage outlets under decking and removal of any blockages. General repair works, watching out for displacement of slabs, mortar decay and removal of organic matter.
Year	Annually
Priority	Medium
Selection process	Paving slabs provide a robust and long-lasting roof terrace surface, requiring considerably less maintenance when compared to timber decking or gravel surfaces.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

4.1.4. **Fall Arrest System for Roof Maintenance Access (Manufacturer / Supplier TBC)**

Location	Selected Flat Roof Areas (maintenance access only)
Description	• Fall Protection System on approved anchorage device. • Installation in accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
Lifecycle	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 and the UK, long lifecycle is typically achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	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.
Year	Annually
Priority	High
Selection process	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.
Reference	N/A

4.1.5. **Roof Cowls (Manufacturer / Supplier TBC)**

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

4.1.6. **Flashings (Manufacturer / Supplier TBC)**

Location	All flashing locations
Description	Lead to be used for all flashing and counter flashings.
Lifecycle	Typical life expectancy of 70 years recorded for lead flashings. Recessed joint sealing will require regular inspections. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Check joint fixings for lead flashing, ground survey annually and close up inspection every 5 years. Re-secure as necessary
Year	Ground level inspection annually and close up inspection every 5 years
Priority	Medium
Selection process	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.
Reference	N/A

4.2. **Rainwater Drainage (Manufacturer / Supplier TBC)**

Location	All Buildings
Description	• *Rainwater outlets:* Suitable for specified roof membranes. • *Pipework:* Cast Aluminium downpipes/uPVC downpipes • *Below ground drainage:* To M&E/ Structural Engineers design and specification. • *Disposal:* To surface water drainage to Structural Engineers design. • *Controls:* To M&E/ Structural Engineers design and specification. • *Accessories:* allow for outlet gradings, spigots, downspout nozzle, hopper heads, balcony and main roof outlets. • Perforated stainless steel porous grating at junction of paving slabs and entrance doors to allow surface water run-off.
Lifecycle	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 and the UK, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.

Required maintenance	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).
Year	Annually, cleaning bi-annually
Priority	High
Selection process	As above, aluminium fittings compare well against cast iron (in terms of cost) and plastic (in terms of lifespan and aesthetic)
Reference	N/A

4.3. External Walls

4.3.1. Brickwork (Manufacturer / Supplier TBC)

Location	Façades
Description	Contrasting light and dark tone brickwork.
Lifecycle	Selected colour bricks have a high embodied energy, they 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.
Required maintenance	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.
Year	Annual
Priority	Low
Selection process	Bricks provide 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.
Reference	Henry J. Lyons Architects' planning drawings & Design Statement.

4.3.2. Render (Manufacturer / Supplier TBC)

Location	Façades
Description	Contrasting light and dark tone silicone enhanced acrylic render.
Lifecycle	Renders in general are expected to have a lifecycle of circa 25 years. Longer lifecycle achieved by regular inspection and maintenance regime.
Required maintenance	Regular inspections to check for cracking and de-bonding. Most maintenance is preventative. Cleaning of algae and other staining is recommended annually, particularly to shaded and north-facing façades.
Year	Annually
Priority	Medium
Selection process	Appropriate detailing will contribute to a long lifespan for this installation. 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
Reference	N/A

4.3.3. **Metal Panels (Manufacturer / Supplier TBC)**

Location	Façades (Penthouse Level)
Description	Metal façade panels on galvanised metal rainscreen support system on rigid insulation layer with waterproof layer on concrete blockwork/reinforced concrete inner leaf.
Lifecycle	Lifespan expectancy generally in excess of 50 years. As used across the industry nationally and the UK, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Metal rainscreen 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.
Year	Inspection annually; cleaning 5 yearly.
Priority	Low
Selection process	Metal rainscreen cladding protects the building's structure from rainwater and weathering. Metal cladding systems are also chosen for their aesthetic impact, durability and weathering properties.
Reference	N/A

4.4. **External Windows & Doors (Manufacturer / Supplier TBC)**

Location	All Blocks
Description	• Full height, clear glazed windows with aluminium infill panels. • All units to be double/triple glazed with thermally broken frames re-enforced to take account of the dynamic pressures in relation to the height of the installation within the building. • 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. • Entrance and balcony doors to be solid or glazed framed doors.
Lifecycle	Aluminium has a typical lifespan of 45-60 years in comparison to uPVC which has a typical lifespan of 30-40 years. As used nationwide and in the UK, typically longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	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.
Year	Annual
Priority	Medium
Selection process	Aluminium is durable and low maintenance with an average lifespan of 45-60 years, exceeding uPVC (30-40 years).
Reference	N/A

4.5. **Balconies**

4.5.1. **Structure**

Location	Façades
Description	• Powder-coated steel frame balcony system to engineer's detail or • Cantilevered precast concrete balcony system to engineer's details complete with dark coloured pressed metal cladding. • Thermally broken 'farrat-plate connections' or 'concrete to concrete connectors' to main structure of building.
Lifecycle	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.
Required maintenance	Regular visual inspections of slab junction at connections and general concrete slabs. Metal cladding requires little maintenance and is resistant to corrosion. Check balcony system as per manufacturer's specifications including all hardware components for signs of wear and/or weathering. Check for structural damage and modifications.
Year	Annual
Priority	High
Selection process	Engineered detail; designed for strength and safety.
Reference	N/A

4.5.2. **Balustrades and Handrails (Manufacturer / Supplier TBC)**

Location	Facades
Description	• Anthracite-Grey vertical balustrades and railings. • Approved glass balustrade. • *Guarding:* Manufacturer's standard - Frameless tempered glass (safety glass) • *Fixing:* In accordance with manufacturers details.
Lifecycle	General glass and metal items with a 25 - 45 year lifespan. Metal structure has a typical life expectancy of 70 years dependent on maintenance of components. As used across the industry nationally and the UK, longer lifecycle is achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Regular visual inspection of connection pieces for impact damage or alterations.
Year	Annual
Priority	High
Selection process	Long lifespan versus timber options
Reference	N/A

5.0. INTERNAL BUILDING FABRIC SCHEDULE

5.1. **Floors** **(Manufacturer / Supplier TBC)**

5.1.1. **Common Areas**

Location	Entrances lobbies and Common corridors
Description	• Selected anti-slip porcelain or ceramic floor tile. • Provide for inset matwell. • Selected carpet inlay on underlay.
Lifecycle	• Lifespan expectation of 20-25 years 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.
Required maintenance	Visual inspection with regular cleaning, intermittent replacement of chipped / loose tiles.
Year	• Annual for floor tiles. • Quarterly inspection and cleaning of carpets as necessary
Priority	Low
Selection process	• 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
Reference	N/A

Location	Stairwells, landings / half landings
Description	Selected carpet finish on underlay with approved nosings.
Lifecycle	• 10-15 year lifespan for carpet. Likely requirement to replace for modernisation within this period also. • 20-year lifespan for aluminium nosings.
Required maintenance	Visual inspection with regular cleaning
Year	Quarterly inspection and cleaning as necessary
Priority	Low
Selection process	Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility
Reference	N/A

Location	Lifts
Description	Carpet and tiles to match adjacent apartment and lobbies.
Lifecycle	• Lifespan expectation of 20-30 years 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.
Required maintenance	Visual inspection with regular cleaning, intermittent replacement of chipped / loose tiles.
Year	Annual
Priority	Low

Selection process	Slip rating required for lifts, few materials provide this and are as hard wearing.
Reference	N/A

5.1.2. **Tenant's Amenities**

Location	Resident Amenities
Description	• Timber laminate / parquet flooring, or • Carpet covering • Provide for inset matwell
Lifecycle	• 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
Required maintenance	Visual inspection. Sweep clean regularly ensuring to remove any dirt. Clean up spills immediately and use only recommended floor cleaners.
Year	Annual
Priority	Low
Selection process	Materials chosen for aesthetics, durability and low maintenance.
Reference	N/A

Location	Crèche
Description	Linoleum floor sheeting. Provide for inset matwell.
Lifecycle	Linoleum has a lifespan expectancy of 15-25 years. Matwell to be replaced every 10 years.
Required maintenance	Regular cleaning as necessary with recommended products as per manufacturer's instructions. Inspect annually for damage/wear.
Year	Annual
Priority	Low
Selection process	Durable, low maintenance floor finish. Slip rating required at entrance lobby.
Reference	N/A

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

5.2. **Walls** **(Manufacturer / Supplier TBC)**

5.2.1. **Common Areas**

Location	Entrances lobbies/Common corridors/Staircores/Amenity facilities
Description	Selected paint finish with primer to skimmed plasterboard
Lifecycle	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Regular maintenance required, damp cloth to remove stains and replacement when damaged
Year	Bi-annually
Priority	Low
Selection process	Decorative and durable finish.
Reference	N/A

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

Location	Crèche
Description	Selected painted finish with primer to skimmed plasterboard (moisture board to wet areas)
Lifecycle	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Bi-annual inspection to review damage, local repairs as necessary, particular detailed inspection in wet room areas
Year	Annually
Priority	Medium
Selection process	Decorative and durable.
Reference	N/A

Location	Tenant amenity wet areas
Description	Selected ceramic wall tile to plasterboard (moisture board to wet areas)
Lifecycle	Typical life expectancy of 37 years, less in wet room areas to 20-25 years
Required maintenance	Bi-annual inspection to review damage, local repairs as necessary, particular detailed inspection in wet room areas
Year	Annually
Priority	Medium
Selection process	Wet room application requires moisture board and tiling
Reference	N/A

5.3. **Ceilings (Manufacturer / Supplier TBC)**

5.3.1. **Common & Tenant Amenity Areas**

Location	Stair cores/Lift/Lobbies/Amenity Facilities /Crèche
Description	Selected paint finish with primer to skimmed acoustic ceiling.
Lifecycle	2-10 years for finishes; 40 years for plasterboard. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Regular maintenance required, damp cloth to remove stains and replacement when damaged
Year	Bi-annually
Priority	Low
Selection process	Decorative and durable finish.
Reference	N/A

5.4. **Internal Handrails & Balustrades (Manufacturer / Supplier TBC)**

Location	Stair cores
Description	Proprietary glazed panel system face fixed to stairs stringer / landing slab edge. or Metal balustrade option.
Lifecycle	25-30 years typical lifecycle. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	Regular inspections of bolts and joints. General maintenance in relation to impact damage and general wear and tear.
Year	Annually
Priority	High
Selection process	Hard wearing long life materials against timber options
Reference	N/A

5.5. Carpentry & Joinery

5.5.1. Internal Doors and Frames (Manufacturer / Supplier TBC)

Location	All Blocks
Description	• 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 B.S. 476. Timber saddle boards. • Brushed aluminium door ironmongery or similar
Lifecycle	30 years average expected lifespan. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	General maintenance in relation to impact damage and general wear and tear.
Year	Annual
Priority	Low, unless fire door High
Selection process	Industry standard
Reference	N/A

5.5.2. Skirtings & Architraves (Manufacturer / Supplier TBC)

Location	All Blocks
Description	Skirtings and architraves. Painted MDF.
Lifecycle	30 years average expected lifespan. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	General maintenance in relation to impact damage and general wear and tear
Year	Annual
Priority	Low
Selection process	Industry standard
Reference	N/A

5.5.3. Window Boards (Manufacturer / Supplier TBC)

Location	All Blocks
Description	Window boards. Painted MDF.
Lifecycle	30 years average expected lifespan. Longer lifecycle achieved by regular inspection and maintenance regime to ensure the upkeep of materials.
Required maintenance	General maintenance in relation to impact damage and general wear and tear
Year	Annual
Priority	Low
Selection process	Industry standard
Reference	N/A

BUILDING SERVICES

6.0 Mechanical Systems

6.1.1 Mechanical Plant Rooms

Location	Plant Rooms
Description	Water Services Plant – Specification to be further detailed by the M&E design team.
Lifecycle	• Annual Maintenance / Inspection to Pumps. • Annual Maintenance / Inspection to Water Tanks. • Annual Maintenance / Inspection to Booster-sets. • 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.
Required maintenance	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	Medium
Selection process	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.
Reference	N/A for this item.

6.1.2 Soils and Wastes

Location	All Areas
Description	PVC / Cast iron Soils and Wastes Pipework
Lifecycle	• 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.
Required maintenance	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	Medium
Selection process	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.
Reference	N/A for this item.

6.1.3 Water Services

Location	Apartments, Kitchens, etc
Description	Copper Water Services Pipework and associated fittings and accessories.
Lifecycle	• 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.
Required maintenance	Annual Inspections, including legionella testing to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	High
Selection process	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.
Reference	N/A for this item.

6.1.4 **Domestic Hot Water Heating Services**

Location	Apartment
Description	Air Source Heat Pump / Electric Panel Heaters
Lifecycle	• Annual Inspection of Air Source Heat Pump in each unit. / Electric Panel Heating • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Required maintenance	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	Medium
Selection process	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.
Reference	N/A

6.1.5 **Ventilation Services**

Location	Apartment
Description	Heat Recovery Units, Ducting & Grilles
Lifecycle	• Annual inspection of extract fan and grilles. • Annual Inspection of operation of fan and boost / setback facility. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Required maintenance	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	Medium
Selection process	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.
Reference	N/A for this item.

6.2 Electrical Services

6.2.1 Electrical Infrastructure

Location	Switch rooms / Risers
Description	Maintenance of Electrical Switchgear
Lifecycle	• Annual Inspection of Electrical Switchgear and switchboards. • Thermographic imagining of switchgear, 50% of switchgear every 3 years. • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Required maintenance	Annual / Every three years to be included as part of Development Planned Preventative Maintenance Programme
Year	Annually
Priority	High
Selection process	All equipment to meet and exceed ESB, ETCI, CIBSE recommendations and be code compliant in all cases.
Reference	N/A for this item.

6.2.2 Lighting Services Internal

Location	All Areas – Internal
Description	Lighting
Lifecycle	• 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.
Required maintenance	Annual / Quarterly Inspections certification as required per above remedial works.
Year	Annually / Quarterly
Priority	High
Selection process	All equipment to meet requirements and be in accordance with the current IS3217
Reference	N/A for this item.

6.2.3 Lighting Services External

Location	All Areas – Internal
Description	Lighting
Lifecycle	• 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.
Required maintenance	Annual / Quarterly Inspections certification as required as per the PPM schedule.
Year	Annually / Quarterly
Priority	High
Selection process	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.
Reference	N/A for this item.

6.2.4 Protective Services – Fire Alarm

Location	All areas – Internal
Description	Fire alarm
Lifecycle	• 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.
Required maintenance	Annual / Quarterly Inspections certification as required as per the PPM schedule.
Year	Annually / Quarterly
Priority	High
Selection process	All equipment to meet requirements and be in accordance with the current IS3218
Reference	N/A for this item.

6.2.5 Protective Services – Fire Extinguishers

Location	All areas – Internal
Description	Fire Extinguishers and Fire Blankets
Lifecycle	Annual Inspection
Required maintenance	Annual with Replacement of all extinguishers at year 10
Year	
Priority	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Selection process	All fire extinguishers must meet the requirements of I.S 291:2015 Selection, commissioning, installation, inspection and maintenance of portable fire extinguishers.
Reference	N/A for this item.

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

Location	Apartment
Description	Apartment Sprinkler System
Lifecycle	Weekly / Annual Inspection
Required maintenance	Weekly Check of Sprinkler Pumps and plant and annual testing and certification of plant by specialist.
Year	All
Priority	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Selection process	The Apartment sprinkler system shall be installed in accordance with BS 9251:2005 – Sprinkler Systems for Residential and Domestic Occupancies – Code of Practice
Reference	N/A

6.2.7 **Protective Services – Dry Risers**

Location	Common Area Cores
Description	Dry Risers
Lifecycle	Weekly / Annual Inspection
Required maintenance	Visual Weekly Checks of Pipework and Landing Valves with Annual testing and certification by specialist.
Year	Weekly / Annually
Priority	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Selection process	The system shall be installed in accordance with BS 5041 & BS 9999
Reference	N/A

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

Location	Common Area Lobby's
Description	Smoke Extract / Exhaust Systems
Lifecycle	• 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.
Required maintenance	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
Year	Weekly / Annually
Priority	Medium
Selection process	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.
Reference	N/A

6.2.9 **Sources of Renewable Energy**

Location	Roof
Description	PV Array on roof supply each residential unit with renewable electrical energy, supporting Part L/NZEB requirements in conjunction with Exhaust Air Source Heat Pumps. Full Details to be provided at detailed stage.
Lifecycle	• Quarterly Clean • Annual Inspection • Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Required maintenance	Quarterly / Annual
Year	Annually
Priority	Medium
Selection process	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.
Reference	N/A