CASTLEFORBES SHD – PROPOSED RESIDENTIAL DEVELOPMENT

Castleforbes Business Park, Sheriff Street Upper, North Dock, Dublin 1

BUILDING LIFE CYCLE REPORT

DOCUMENT HISTORY

ISSUE NO:	1	2
STATUS:	ISSUE	FINAL
DATE:	19/11/2020	01/12/2020
PREPARED BY:	CONOR FAHEY DAVID FEIGHERY	CONOR FAHEY DAVID FEIGHERY
CHECKED BY:	AODHÁN KING	AODHÁN KING
APPROVED BY:	AODHÁN KING DARREN DAVIDSON	AODHÁN KING DARREN DAVIDSON

TABLE OF CONTENTS

1.0. INTRODUCTION

Aramark Property were instructed by Glenveagh Living Limited to provide a Building Lifecycle Report for their proposed residential scheme at Castleforbes Business Park, Sheriff Street Upper, North Dock, 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 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) 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 development will consist of the demolition of all structures on the site and the construction of a mixed use development set out in 8 no. blocks, ranging in height from 8 to 14 storeys, above part basement/upper ground level, to accommodate 702 no. apartments (comprising 100 studios, 406 no. 1 bed units, 169 no. 2 bed units and 15 no. 3 bed units) including 12 live-work units, retail, creche, cultural space and residential tenant amenity.

The site will accommodate car parking spaces, bicycle parking, storage, services and plant areas. The residential buildings are arranged around a central open space (at ground level) and raised residential courtyards at upper ground level over part basement level. Ground floor level uses located onto Sheriff Street and into the central open space include a cultural building and live/work office space.

Two vehicular access points are proposed along Sheriff Street, and the part basement car parking is split into two areas, accordingly, accommodating 1,010 bicycle parking spaces, 179 car parking spaces, plant, storage areas and other associated facilities.

The main pedestrian access is located centrally along Sheriff Street with additional access points from East Rd and from the eastern end of Sheriff Street.

The application also includes for a pocket park on the corner of Sheriff Street and East Rd to be provided as a temporary development prior to additional future development on this part of the site.

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 residential scheme, Castleforbes Business Park, Sherriff Street Upper, North Dock, Dublin 1 and explores the practical implementation of the design and material principles which has informed design of building roofs, façades, 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 O'Mahony Pike Architects' planning drawing pack received November 2020.

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	Average lifecycle of 15-25 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.
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, 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. Sedum roofs are a popular and varied choice for green roofs requiring minimal maintenance.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

4.1.2. Roof (Manufacturer / Supplier TBC)

Location	Selected Flat Roof Areas (maintenance access only)
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 easily maintain without shutting down building operations during application.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

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

Location	Communal Terraces
Description	Intensive green roof system on roof slab to engineer's detail.
Lifecycle	Average lifecycle of 15-25 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.
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
Priority	Medium
Selection process	Intensive green roof planting will add to the character of the overall scheme and visual amenity for residents, providing a variety of size and species of planting. Green roofs provide attenuation to storm water run-off and less burden on rainwater goods, increased thermal and sound insulation to the building and increased biodiversity.
Reference	N/A

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

Location	Flat roof areas to all blocks (maintenance access only)
Description	• 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. • *Overall system length*: Refer to roof plans for indicative layouts. Final layouts and system lengths by appointed sub-contractor. • *Intermediate support spacing* as per manufacturer's specification. • *Accessories/other requirements*: items required to complete the installation, e.g. bends and curves in rigid rails, corner units for flexible cable systems, turntables, rotary exit units. • *Installation:* In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer. • *Structural anchors:* Type recommended by the system manufacturer to suit the structure/fabric into which they will be fixed.
Lifecycle	25-30 years dependent on quality of materials. Generally steel finishes to skyward facing elements can be expected to maintain this life expectancy.
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. • Stainless Steel goose neck tube to facilitate power supply to external roof level bolted to roof and weathered using proprietary weather apron.
Lifecycle	25-35 years
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.
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 (65 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 Blocks
Description	• *Rainwater outlets:* Suitable for specified roof membranes. • *Pipework:* Cast Aluminium 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	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 50 years and plastic, less so at 30 years.
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	While bricks have a high embodied energy, they are an extremely durable material. Brickwork in this application is expected to have a lifespan of 85 years or more. The mortar pointing however has a shorter lifespan of 25-50 years.
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	Brick is an attractive finish that bears well against other finishing products such as render to blockwork wall in terms of lifespan (85 vs 55 years). The brickwork does require re-pointing however at 25-50 years.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

4.3.2. **Render (Manufacturer / Supplier TBC)**

Location	Selected Façades
Description	Low maintenance selected colour acrylic render.
Lifecycle	Renders in general are expected to have a lifecycle of circa 25 years.
Required maintenance	Regular inspections to check for cracking and de-bonding. Most maintenance is preventative. Coloured render requires less maintenance than traditional renders.
Year	Annually
Priority	Medium
Selection process	Render is a durable and low-maintenance 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	O'Mahony Pike Architects' planning drawings & Design Statement.

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

Location	Cultural Building Façades
Description	• Zinc or equivalent sheeted finish. • PPC aluminium panels and mesh or equivalent.
Lifecycle	Zinc typical life expectancy is over 40 years and aluminium have a typical lifespan of 45-60 years.
Required maintenance	Selected metal material 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	Selected 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	O'Mahony Pike Architects' planning drawings & Design Statement.

4.3.4. **Concrete (Manufacturer / Supplier TBC)**

Location	Tower Façades
Description	Red Precast Concrete panels
Lifecycle	While concrete has a high embodied energy, it is an extremely durable material. Concrete frame has a typical life expectancy of 80 years.
Required maintenance	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.

Year	Annual.
Priority	Low
Selection process	Concrete is a durable product which is chosen for its structural properties, aesthetic, cost efficiency and rapid construction.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

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

Location	Façades
Description	• Aluminium powder-coated window and door frames to approved colour or uPVC to approved colour. • Glazed curtain walling along retail unit shopfront to be aluminium powder coated to selected colour with flush detailing. • All units to be double/triple-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.
Lifecycle	Aluminium has a typical lifespan of 45-60 years in comparison to uPVC which has a typical lifespan of 35-40 years. Timber windows have a typical lifespan of 35 – 50 years, aluminium cladding can extend this lifespan by 10-15 years.
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	Anodised aluminium is durable and low maintenance with an average lifespan of 45-60 years, exceeding uPVC (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.
Reference	O'Mahony Pike Architects' planning drawings & Design Statement.

4.5. **Balconies**

4.5.1. **Structure (Manufacturer / Supplier TBC)**

Location	Façades
Description	• Powder-coated steel frame balcony system to engineer's detail or • Precast concrete balcony system to engineer's details. • Thermally broken connections 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	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.
Year	Annual
Priority	High
Selection process	Engineered detail; designed for strength and safety.
Reference	N/A

4.5.2. **Balustrades and Handrails**

Location	Balconies
Description	**Glazed Balustrade Option:** • Approved glass balustrade. • *Guarding:* Manufacturer's standard - Frameless tempered glass (safety glass) • *Handrails:* Manufacturer's standard - Powder coated aluminium handrails. • *Fixing:* In accordance with manufacturers details. **Metal Balustrade Option:** • Galvanised, primed with painted finish. **Winter Gardens:** • Approved balcony glass system (frameless) • *Guarding:* Manufacturers standard - Frameless tempered glass (safety glass) • *Handrails:* Manufacturers standard - Powder coated aluminium handrails. • *Fixing:* In accordance with manufacturers details.
Lifecycle	General glass and metal items with a 25-45 year lifespan.
Required maintenance	Annual visual inspection of connection pieces for impact damage or alterations.
Year	Annual
Priority	High
Selection process	Metal and glass options will have a longer lifespan and require less maintenance than timber options (10-20 years).
Reference	N/A

5.0. INTERNAL BUILDING FABRIC SCHEDULE

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

5.1.1. **Common Areas**

Location	Entrance lobbies / Concierge area / Common corridors
Description	• Selected anti-slip porcelain or ceramic floor tile. • Provide for inset matwell.
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

Location	Lift and apartment lobbies
Description	Selected anti-slip porcelain or ceramic floor tile border with selected carpet inlay on underlay on Ground Level. Tiles in lifts to match adjacent apartment lobbies. Selected carpet covering on underlay.
Lifecycle	Lifespan expectation of 20-25 years in heavy wear areas for the tiling. 10-15 year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
Required maintenance	Visual inspection, intermittent replacement of chipped / loose tiles. Visual inspection of carpet with regular cleaning.
Year	Quarterly inspection and cleaning 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 covering on underlay. Approved anodised aluminium nosings to stairs.
Lifecycle	• 10-15 year lifespan for carpet. Likely requirement to replace for modernisation within this period also. • 20-year lifespan for aluminium nosing.
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

5.1.2. **Tenant Amenity Rooms**

Location	Entrance lobbies / Resident's multi-purpose facilities / Gymnasium / Creche / Community room
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	Quarterly
Priority	Medium
Selection process	Materials chosen for aesthetics, durability and low maintenance. Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility.
Reference	N/A

Location	All wet areas (e.g. Gymnasium, Changing Rooms, WC's)
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	Entrance lobbies / Concierge area / Common corridors
Description	Selected contract vinyl wallpaper feature, or Selected paint finish with primer to skimmed plasterboard
Lifecycle	2-10 years for finishes; 40 years for plasterboard.
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. Used as feature in common areas against paint.
Reference	N/A

Location	Lift core, stairs and apartment lobbies
Description	Selected contract vinyl wallpaper, class O rated, or Selected paint finish with primer to skimmed plasterboard
Lifecycle	2-10 years for finishes; 40 years for plasterboard.
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

5.2.2. **Tenant Amenities**

Location	All wet areas (e.g. Gymnasium, Changing Rooms, WC's)
Description	Selected ceramic wall tile to plasterboard (moisture board to wet areas).
Lifecycle	Typical life expectancy of 35-40 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

Location	Entrance lobbies / Resident's multi-purpose facilities / Gymnasium / Creche / Community room
Description	Selected wallpaper and selected paint finish with primer to skimmed plasterboard.
Lifecycle	2-10 years for finishes; 40 years for plasterboard.
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

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

Location	Common & tenant amenity areas
Description	Selected paint finish with primer to skimmed plasterboard ceiling. Acoustic ceiling to lift and apartment lobbies.
Lifecycle	2-10 years for finishes; 40 years for plasterboard
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	Tenant amenity wet areas (e.g. Gymnasium, Changing Rooms, WCs)
Description	Selected paint finish with primer to skimmed moisture board ceiling.
Lifecycle	2-10 years for finishes; 40 years for plasterboard.
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	Stairs & landings
Description	• 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. or • 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.
Lifecycle	25-30 years typical lifecycle.
Required maintenance	Regular inspections of holding down bolts and joints.
Year	Annually
Priority	High
Selection process	Hard wearing long life materials against timber options.
Reference	N/A

5.5. Carpentry & Joinery (Manufacturer / Supplier TBC)

5.5.1. Internal Doors and Frames

Location	All buildings
Description	• 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.
Lifecycle	30 years average expected lifespan.
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

Location	All buildings
Description	Skirtings and architraves. Painted MDF.
Lifecycle	30 years average expected lifespan.
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

Location	Residential blocks
Description	Window boards. Painted MDF.
Lifecycle	31 years average expected lifespan.
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

6.0. BUILDING SERVICES

6.1. Mechanical Systems

6.1.1. Mechanical Plant

Location	Plant Rooms –
Description	Exhaust Air Source Heat Pumps
Lifecycle	• 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. • 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 / kitchens Pods etc
Description	PVC (Acoustic_ 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, Pods 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. **Ventilation Services**

Location	Apartment
Description	Heat Recovery Units, Ducting & Grilles (MVHR)
Lifecycle	• Annual inspection of extract fan and grilles. • Annual Inspection of BMS link and 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 / Protective 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 MV Switchgear Annualy and LV 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 – LED throughout with Presence detection in circulation areas and locally controlled in apartments.
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, Part M and DAC Requirements.
Reference	N/A for this item.

6.2.3. **Lighting Services – External**

Location	All Areas – Internal
Description	Lighting – All LED with Vandal Resistant Diffusers where exposed.
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 meet requirements and be in accordance with the current IS3217, Part M and DAC Requirements.
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 and the Fire Cert
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**

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	
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 for this item.

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	
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 for this item.

6.2.8. **Car Park Ventilation Services**

Location	Car park
Description	Naturally Ventilated
Lifecycle	Annual inspection of Grilles / Louvres
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.

6.2.9. **Fire Fighting Lobby Ventilation**

Location	All Lobby's
Description	Flakt or Colt 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 for this item.

6.2.10. **Sources of Renewable Energy**

Location	Roof / Boiler house
Description	PV Array on roof Supporting the Part L / NZEB requirements in conjunction with Centralised Boiler house and Air Source Heat Pumps
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 for this item.