

## PHIBSBOROUGH SHOPPING CENTRE - RESIDENTIAL DEVELOPMENT

Phibsborough Tower, Phibsborough Road, Dublin 7, D07 XH2D

### BUILDING LIFE CYCLE REPORT



## DOCUMENT HISTORY

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## 1.0. INTRODUCTION

Aramark Property were instructed by Mm Capital, to provide a Building Lifecycle Report for their proposed residential scheme at Phibsborough Shopping Centre, Phibsborough Road, Dublin 7, D07 XH2D.

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 proposed development consists of the alterations to existing permitted development at Phibsborough Shopping Centre from student accommodation to shared accommodation.

The proposed development proposes the reconfiguration and alteration of the existing permitted student development buildings layouts and arrangement to accommodate shared accommodation and associated facilities.

This includes a minor relocation of the building footprints, increased floor areas, a minor increase in height and proposed new roof gardens. Other proposed minor alterations in respect of the wider permitted scheme are also included.

### 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 development at Phibsborough Shopping Centre, Phibsborough Road, Dublin 7, D07 XH2D 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 Donnelly Turpin 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 Roofs (Manufacturer / Supplier TBC)

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

###### 4.1.2. Fall Arrest System for Roof Maintenance Access (Manufacturer / Supplier TBC)

<i>Location</i>	All flat roof areas (maintenance access only)
<i>Description</i>	<ul style="list-style-type: none"> <li>• Fall Protection System on approved anchorage device</li> <li>• Installation in accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer</li> </ul>
<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. An FPS must comply with relevant quality standards.
<i>Reference</i>	N/A

#### 4.1.3. Flashings (Manufacturer / Supplier TBC)

<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 70 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 (60 years) and zinc (50 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 (Manufacturer / Supplier TBC)

<i>Location</i>	All buildings
<i>Description</i>	<ul style="list-style-type: none"> <li>• <i>Rainwater outlets:</i> Suitable for specified roof membranes</li> <li>• <i>Pipework:</i> Cast aluminium downpipes/uPVC downpipes</li> <li>• <i>Below ground drainage:</i> To M&amp;E/ Structural Engineers design and specification</li> <li>• <i>Disposal:</i> To surface water drainage to Structural Engineers design</li> <li>• <i>Controls:</i> To M&amp;E/ Structural Engineers design and specification</li> <li>• <i>Accessories:</i> allow for outlet gradings, spigots, downspout nozzle, hopper heads, balcony and main roof outlets</li> </ul>
<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 50 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. Brick (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	Facing brickwork infills to selected colour
<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 50-80 years. 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>	Aesthetic, lightweight, cost-efficient and low maintenance cladding option, indistinguishable from traditional brick construction.
<i>Reference</i>	Donnelly Turpin Architects' planning drawings and Design Report.

#### 4.3.2. Aluminium Cladding (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	Polyester powder coated aluminium cladding and spandrel system to select finish.
<i>Lifecycle</i>	Typical life expectancy of over 40 years
<i>Required maintenance</i>	Aluminium 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>	Aluminium 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>	Donnelly Turpin Architects' planning drawings and Design Report.

#### 4.3.3. Metal Rainscreen Cladding (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	Selected powder coated metal rainscreen cladding system.
<i>Lifecycle</i>	Metal cladding has a typical life expectancy of over 40 years.
<i>Required maintenance</i>	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.
<i>Year</i>	Inspection annually; cleaning 5 yearly.
<i>Priority</i>	Low

<i>Selection process</i>	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.
<i>Reference</i>	Donnelly Turpin Architects' planning drawings and Design Report.

#### 4.3.4. Stone Cladding (Manufacturer / Supplier TBC)

<i>Location</i>	Façades
<i>Description</i>	Selected natural (Dry) stone wall cladding on support system on rigid insulation layer with waterproof layer on concrete blockwork/reinforced concrete inner leaf.
<i>Lifecycle</i>	Typical life expectancy of over 50 years.
<i>Required maintenance</i>	In general, given its durability, stone requires little maintenance and weathers well. 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>	Stone is a natural and highly durable material offering a robust aesthetic. Options for stone cladding include reconstituted stone which is a cost-effective and adaptable cladding option when compared to natural stone cladding. It has the high durability associated with natural stone, with similar mechanical properties to precast concrete.
<i>Reference</i>	Donnelly Turpin Architects' planning drawings and Design Report.

#### 4.4. External Windows & Doors

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> <li>• Powder-coated aluminium framed windows, doors to selected colour.</li> <li>• All units to be double glazed with thermally broken frames.</li> <li>• 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.</li> </ul>
<i>Lifecycle</i>	Aluminium has a typical lifespan of 45-60 years in comparison to uPVC which has a typical lifespan of 30-40 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>	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.
<i>Reference</i>	Donnelly Turpin Architects' planning drawings and Design Report.

## 5.0. INTERNAL BUILDING FABRIC SCHEDULE

### 5.1. Floors

#### 5.1.1. Common Areas

<i>Location</i>	Entrance lobbies / Reception areas / corridors
<i>Description</i>	<ul style="list-style-type: none"> <li>Selected anti-slip porcelain or ceramic floor tile</li> <li>Provide for inset matwell</li> </ul>
<i>Lifecycle</i>	Lifespan expectation of 20-30 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>	Durable, low maintenance floor finish. Slip rating required at entrance lobby, few materials provide this and are as hard wearing.
<i>Reference</i>	N/A

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

<i>Location</i>	Lift Lobbies
<i>Description</i>	Tiles to match adjacent apartment lobbies.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas for the tiling.
<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 for lifts, few materials provide this and are as hard wearing.
<i>Reference</i>	N/A

### 5.1.2. Tenant Amenity Areas

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

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

## 5.2. Walls

### 5.2.1. Common Areas

<i>Location</i>	Entrance lobbies / Reception areas
<i>Description</i>	Selected contract vinyl wallpaper feature, or; Selected paint finish with primer to skimmed plasterboard
<i>Lifecycle</i>	2-10 years for finishes; 40 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

<i>Location</i>	Lobbies / corridors / stairs
<i>Description</i>	Selected contract vinyl wallpaper, class O rated, or Selected paint finish with primer to skimmed plasterboard
<i>Lifecycle</i>	2-10 years for finishes; 40 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 Amenity Areas

<i>Location</i>	Resident's lounge & co-working space
<i>Description</i>	Selected contract vinyl wallpaper feature, or Selected paint finish with primer to skimmed plasterboard.
<i>Lifecycle</i>	2-10 years for finishes; 40 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

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

### 5.3. Ceilings

<i>Location</i>	Common areas & tenant amenity areas
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard ceiling on M/F frame. Acoustic ceiling to lift core and apartment lobbies. Moisture board to wet areas.
<i>Lifecycle</i>	2-10 years for finishes; 40 years for plasterboard
<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

<i>Location</i>	Tenant amenity wet areas (e.g. Shared Kitchen & WCs)
<i>Description</i>	Selected paint finish with primer to skimmed moisture board ceiling.
<i>Lifecycle</i>	2-10 years for finishes; 40 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"> <li>Proprietary glazed panel system face fixed to stairs stringer / landing slab to manufacturer's details and specifications, or</li> <li>Metal balustrade option</li> </ul>
<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"> <li>Selected white primed and painted/varnished solid internal doors, or hardwood veneered internal doors</li> <li>All fire rated doors and joinery items to be manufactured in accordance with B.S. 476. Timber saddle boards.</li> <li>Brushed aluminium door ironmongery or similar</li> </ul>
<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>	Painted timber/MDF skirtings and architraves
<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>	Painted timber/MDF window boards
<i>Lifecycle</i>	30 years average expected lifespan
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

## 6.0. BUILDING SERVICES

### 6.1. Mechanical Systems (Co Living Areas)

#### 6.1.1. Mechanical Plant

<i>Location</i>	Roof
<i>Description</i>	Water Heating plant is proposed to consist of Air to Water Heat Pumps. Specification to be further details to be provided by the M&E Consultant at detailed design stage.
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>• Annual Maintenance / Inspection to Heating System</li> <li>• Annual Maintenance of Air to Water Heat Pumps.</li> <li>• Annual Maintenance / Inspection to Heating and Water Pumps.</li> <li>• Annual Maintenance / Inspection to Water Tanks.</li> <li>• Annual Maintenance / Inspection to Booster - sets.</li> <li>• Annual Maintenance / Inspection to DHS Tanks.</li> </ul> <ul style="list-style-type: none"> <li>• Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> <li>• Replacement of equipment at (End of Life) EOL to be determined at detailed design stage.</li> </ul>
<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

#### 6.1.2 Soils and Wastes

<i>Location</i>	All Areas / kitchens Pods etc
<i>Description</i>	PVC Soils and Wastes Pipework
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>• Annual inspections required for all pipework within landlord areas.</li> <li>• Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>
<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



### 6.1.2. Water Services

<i>Location</i>	Co-living Clusters.
<i>Description</i>	LPHW HIU for domestic Hot Water Copper Water Services Pipework and associated fittings and accessories.
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>Annual Inspection of HIU.</li> <li>Annual inspections required for all pipework within landlord areas.</li> <li>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>
<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

### 6.1.3. Ventilation Services

<i>Location</i>	Co-living areas
<i>Description</i>	Heat Recovery Ventilation System (HRV) System, Ducting & Grilles (MVHR)
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>Annual inspection of extract fan / HRV and grilles</li> <li>Annual Inspection of operation of fan and boost / setback facility.</li> <li>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>
<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

## 6.2. Electrical / Protective Services

### 6.2.1. Electrical Infrastructure

<i>Location</i>	Switch rooms / Risers
<i>Description</i>	Maintenance of Electrical Switchgear
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>Annual Inspection of Electrical Switchgear and switchboards.</li> <li>Thermographic imaging of switchgear 50% of MV Switchgear Annually and LV switchgear every 3 years.</li> <li>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>
<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

### 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>	<p>Annual Inspection of All Luminaires Quarterly Inspection of Emergency Lighting.</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 / 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

### 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>	<ul style="list-style-type: none"> <li>Annual Inspection of All Luminaires</li> <li>Quarterly Inspection of Emergency Lighting</li> <li>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>

<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

#### 6.2.4. Protective Services – Fire Alarm

<i>Location</i>	All areas – Internal
<i>Description</i>	Fire alarm
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>Quarterly Inspection of panels and 25% testing of devices as per IS3218 requirements.</li> <li>Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</li> </ul>
<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

#### 6.2.5. Protective Services – Fire Extinguishers

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

#### 6.2.6. Protective Services – Apartment Sprinkler System (Bedroom Areas Only)

<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>	All

<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	The Apartment sprinkler system shall be installed in accordance with BS 9251:2005 – Sprinkler Systems for Residential and Domestic Occupancies – Code of Practice
<i>Reference</i>	N/A

#### 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

#### 6.2.8. Backup Generator

<i>Location</i>	Service Yard
<i>Description</i>	Life Safety System Backup Generator
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>• Regular Tests of the system</li> <li>• Annual inspection of Fans</li> <li>• Annual inspection of automatic doors and AVOs</li> <li>• All systems to be backed up by life safety systems.</li> </ul>
<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

#### 6.2.9. Fire Fighting Lobby Ventilation (To Fire Consultants Design and Specification)

<i>Location</i>	Common Area Lobby's
<i>Description</i>	Smoke Extract / Exhaust Systems
<i>Lifecycle</i>	<ul style="list-style-type: none"> <li>• Regular Tests of the system</li> <li>• Annual inspection of Fans</li> <li>• Annual inspection of automatic doors and AVOs</li> <li>• All systems to be backed up by life safety systems.</li> </ul>
<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