TWO OAKS RESIDENTIAL DEVELOPMENT

Scholarstown Road, Dublin 16

BUILDING LIFE CYCLE REPORT

DOCUMENT HISTORY

ISSUE NO:	1	2	3
STATUS:	DRAFT 1	UPDATED	UPDATED
DATE:	24/09/2019	04/10/2019	10/10/2019
PREPARED BY:	BEN DELOUGHRY DAVID FEIGHERY	BEN DELOUGHRY DAVID FEIGHERY	BEN DELOUGHRY DAVID FEIGHERY
CHECKED BY:	DAVID FEIGHERY	DAVID FEIGHERY	DAVID FEIGHERY
APPROVED BY:	AODHÁN KING DARREN DAVIDSON	AODHÁN KING DARREN DAVIDSON	AODHÁN KING DARREN DAVIDSON

ISSUE NO:	4		
STATUS:	UPDATED		
DATE:	09/11/2019		
PREPARED BY:	CONOR FAHEY DAVID FEIGHERY		
CHECKED BY:	DAVID FEIGHERY		
APPROVED BY:	AODHÁN KING DARREN DAVIDSON		

TABLE OF CONTENTS

1.0. INTRODUCTION

Aramark Property were instructed by Ardstone Homes Limited to provide a Building Lifecycle Report for their proposed residential scheme at Scholarstown Road, Dublin 16.

The purpose of this report is to provide an initial assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered to effectively manage and reduce costs for the benefit of the residents. This is achieved by establishing an Estate Management Strategy (enclosed separately) and producing a Building Lifecycle Report.

The Building Lifecycle Report has been developed on foot of newly revised guidelines for Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities) under Section 28 of the Planning and Development Act 2000 (as amended). These guidelines supersede the previous 2015 document.

Within the new guidelines, new guidance is being provided on build-to-rent.

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

Ardstone Homes Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at a 5.35 hectare site located north of Scholarstown Road incorporating dwellings known as 'Beechpark' and 'Maryfield', Scholarstown Road, Dublin 16, D16 X3X8 and D16 N6V6. Works are also proposed to Scholarstown Road and Woodfield junction including new traffic signals, the elimination of the left-turn slip-lane into Woodfield off Scholarstown Road, upgraded public lighting and upgraded cycle and pedestrian facilities on an area measuring 0.7 hectares, providing a total application site area of 6.05 hectares.

The development will principally consist of: the demolition of all existing structures on site which include a single story dwelling known as 'Beechpark' (172 sq m), a 2 No. storey dwelling known as 'Maryfield' (182 sq m), with associated garage/shed (33.5 sq m) and associated outbuildings (47.1 sq m); and the construction of 590 No. residential units (480 No. Build-to-Rent apartment units and 110 No. Build-to Sell duplex units and apartments), ancillary residential support facilities and commercial floorspace. The total gross floor space of the development is 51,252 sq m over a partial basement of 5,888 sq m (which principally provides car and bicycle parking, plant and bin stores).

The 480 No. 'Build-to-Rent' units will be provided in 8 No. blocks as follows: 7 No. blocks ranging in height from part 5 to part 6 No. storeys (Blocks B1 – B5, C1 and C3) and 1 No. block ranging in height from part 4 to part 6 No. storeys (Block C2) and will comprise 246 No. one bed units and 234 No. two bed units. The 110 No. 'Build-to-Sell' units will be provided in 9 No. duplex blocks which will be 3 No. storeys in height (Blocks A1 – A9) and will comprise 55 No. two bed units and 55 No. three bed units.

The development will also consist of the provision of a part 1 to part 2 No. storey ancillary amenity block (Block D1) (414 sq m) within the central open space which comprises a gymnasium, lobby, kitchenette and lounge at ground floor level and lounge at first floor level in addition to a roof terrace (facing north, south and west) to serve the Build-to-Rent residents; a 2 No. storey retail/café/restaurant building (Block D2) (657 sq m) comprising 2 No. retail units at ground floor level (328.5 sq m) and a café/restaurant unit at first floor level (328.5 sq m); a creche (438 sq m) within Block C2 at ground floor level; and a management suite (261 sq m) and café/restaurant (288 sq m) within Block C3 at ground floor level.

The development provides a vehicular access off Scholarstown Road between Blocks C1 and C3 towards the south-east corner of the site; a separate pedestrian access and emergency vehicular access off Scholarstown Road between Blocks A9 and C2 towards the south-west corner of the site; the facilitation of a pedestrian connection from the north-east corner of the subject site to the public open space in Dargle Park; 459 No. car parking spaces (178 No. at basement level and 281 No. at

surface level); bicycle parking; bin storage; boundary treatments; private balconies and terraces; hard and soft landscaping; plant; services; sedum roofs; PV panels; substations; lighting; and all other associated site 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 Two Oaks residential development 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 block elevations and in the public realm achieve a durable standard of quality that will not need regular fabric replacement or maintenance outside general day to day care. The choice of high quality and long-lasting materials such as brickwork, render and metal and hardscape in the public 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 in the provided John Fleming Architects' drawing pack and OCSC drawing pack.

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 a schedule will be generated from the items below detailing maintenance and replacement costs over the lifespan of the materials and development constituent parts. This will enable a robust schedule of building component repair and replacement costs which will be available to the property management company so that running and maintenance costs of the development are kept within the agreed annual operational budget.

4.0. EXTERNAL BUILDING FABRIC SCHEDULE

4.1. Roofing

4.1.1. Green roof

Location	Flat roofs (maintenance access only)
Description	Extensive sedum green roof system to engineer's specification.
Lifecycle	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.
Required maintenance	Quarterly maintenance visits to include inspection of drainage layer and outlets and removal of any blockages to prevent water build up. Inspection of vegetation layer for fungus and decay. Carry out weeding as necessary. No irrigation necessary with sedum blankets.
Year	Quarterly every year
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 bio-diversity. 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	John Fleming Architects' Design Statement.

4.1.2. Roof terraces

Location	Private / communal roof terraces
Description	Timber decking on roof build up to architects' and engineers' detail.
Lifecycle	Average lifecycle of 10-20 years for timber decking.
Required maintenance	Quarterly maintenance visits to include: • Inspection of drainage layer and outlets and removal of any blockages to prevent water build up. • Inspection of all metalwork and fixings for loosening or degradation including railings, planters, flashings, decking, drainage channels and repair/replace as necessary. • Timber decking requires cleaning, sanding and recoating with proprietary wood stain on an annual basis to ensure safety, longevity and maintained aesthetic value.
Year	Quarterly / annual
Priority	Medium
Selection process	If specified and maintained correctly, timber is a durable, cost-effective and aesthetic decking material.
Reference	N/A

4.1.3. **Pitched roofs**

Location	Amenity Block D1
Description	Tiled roof covering
Lifecycle	Life expectancy in excess of 50 years for standard roof tiles.
Required maintenance	Annual inspection internally and externally for slipped/cracked tiles and flashings, leaks etc. Carry out localised repairs as required. Clean down annually.
Year	Annual
Priority	Medium
Selection process	Roof tiles chosen for durability, low maintenance and aesthetic qualities. Pitched roofs by design ensure run-off of rainwater and therefore less deterioration to roofing materials.
Reference	N/A

4.1.4. **Fall arrest system for roof maintenance access**

Location	Flat roofs
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.
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 no adequate parapet protection. A FPS must comply with relevant quality standards.
Reference	N/A

4.1.5. **Roof cowls**

Location	Roofs
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**

Location	All flashing locations
Description	Lead / coated aluminium to be used for all flashing and counter flashings.
Lifecycle	Typical life expectancy of 70 years recorded for lead flashings, 40-50 years for aluminium 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	General 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), zinc (50 years) and aluminium (40-50 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**

Location	All roofs
Description	• *Rainwater outlets:* Suitable for specified roof membranes. • *Gutters/Pipework:* Aluminium / zinc gutters and 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.
Lifecycle	Aluminium / zinc gutters and downpipes have an expected life expectancy of approximately 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

Location	Façades
Description	Red / buff 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 80 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	Brickwork is an attractive material that bears well against other finishing products such as render to blockwork wall in terms of lifespan (80 vs 40 years). The brickwork does require re-pointing however at 25-50 years.
Reference	John Fleming Architects' Design Statement & elevation drawings.

4.3.2. Render finish

Location	Façades
Description	Render to selected colour
Lifecycle	Renders in general are expected to have a lifecycle of circa 25-50 years.
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	Durable, low maintenance finish. Appropriate detailing will contribute to a long lifespan for this installation.
Reference	John Fleming Architects' Design Statement & elevation drawings.

4.4. External windows & doors

Location	Façades
Description	• Full-height aluminium / uPVC windows to selected colour. • 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 30-40 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 cleaning and regular painting regime. Check for condensation on frame from window and ensure ventilation.
Year	Annual
Priority	Medium
Selection process	Aluminium is a durable and low maintenance material 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	John Fleming Architects' Design Statement & elevation drawings

4.5. **Balconies**

4.5.1. **Structure**

Location	Façades
Description	Cantilevered steel structure
Lifecycle	Metal structure has a typical life expectancy of 70 years dependent on maintenance of components.
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	John Fleming Architects' Design Statement & elevation drawings.

4.5.2. **Balustrades and handrails**

Location	Balconies
Description	• Galvanised painted steel rails and columns. • Approved steel including fixings in accordance with manufacturer's details.
Lifecycle	General metal items with a 25-45 year lifespan.
Required maintenance	Regular visual inspection of connection pieces for impact damage or alterations.
Year	Annual
Priority	High
Selection process	Metal options will have a longer lifespan and require less maintenance than timber options (10-20 years).
Reference	John Fleming Architects' Design Statement & elevation drawings.

5.0. INTERNAL BUILDING FABRIC SCHEDULE

5.1. Floors

5.1.1. Common areas

Location	Entrance lobbies / Reception areas / corridors
Description	• Selected anti-slip matt porcelain tiles. • Provide for inset matwell.
Lifecycle	Lifespan expectation of 20-30 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	Stairwells, landings / half landings
Description	Selected carpet covering. 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 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	Tiles to match adjacent apartment lobbies.
Lifecycle	Lifespan expectation of 20-25 years in heavy wear areas for the tiling.
Required maintenance	Visual inspection, 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 amenity areas**

Location	Gym (Block D1)
Description	Selected timber flooring with selected underlay, weights area to receive selected raised designated zone, where the flooring can be built-up locally to accommodate this use and reduce potential impact sound with selected rubber matting or similar approved.
Lifecycle	Timber flooring with selected underlay has an expected life expectancy of 10-15 years dependent on use. A gym would be a high-use area which can significantly shorten timber floor lifespan.
Required maintenance	Sweep clean regularly ensuring to remove any dirt. Clean up spills immediately and use only recommended floor cleaners.
Year	Quarterly
Priority	Medium
Selection process	Appropriate use of timber floors, specifically in gym areas controls acoustic impact.
Reference	N/A

Location	Resident's lounge (Block D1)
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, intermittent replacement of chipped / loose tiles. 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	All wet areas (e.g. kitchen, WCs)
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

5.2.1. Common areas

Location	Entrance lobbies / Reception areas
Description	Selected contract vinyl wall paper 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.
Reference	N/A

Location	Lobbies / corridors / stairs
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 amenity areas

Location	Gym (Block D1)
Description	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

Location	Resident's lounge (Block D1)
Description	Selected contract vinyl wall paper 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.
Reference	N/A

Location	Resident's kitchen & WCs (Block D1)
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

5.3. **Ceilings**

Location	Common areas & tenant amenity areas
Description	Selected paint finish with primer to skimmed plasterboard 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

Location	Tenant amenity wet areas (e.g. kitchen & 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 balustrades & handrails

Location	All blocks
Description	Proprietary glazed panel system face fixed to stairs stringer / landing slab to manufacturer's details and specifications, or Metal balustrade option (*TBC)*
Lifecycle	25-30 years typical lifecycle.
Required maintenance	Regular inspections including 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

5.5.1. Internal doors and frames

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.
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	Residential blocks
Description	Painted timber/MDF skirtings and architraves.
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	All blocks
Description	Painted timber/MDF window 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
Selection process	Industry standard
Reference	N/A

6.0. BUILDING SERVICES

6.1. Mechanical systems

6.1.1. Mechanical plant

Location	Plant Rooms
Description	Specification to be further detailed by OCSC Consulting Engineers. at detailed design stage.
Lifecycle	Annual Maintenance / Inspection to 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

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

6.1.3. **Water Services**

Location	All Areas
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

6.1.4. **Heating Services - Residential Areas**

Location	Apartments
Description	Exhaust Air Heat Pumps (EAHP) Heat
Lifecycle	Annual Inspection of each Unit in each apartment. 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 – Residential Areas**

Location	Apartments Areas
Description	Extract fan and grilles
Lifecycle	Annual inspection of extract fan and grilles. Annual Inspection of EAHP Unit 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

6.1.6. **Ventilation Services – Common Areas / Service Areas**

Location	Service Areas – Bin Stores etc
Description	Extract fan & grilles
Lifecycle	Annual inspection of extract fan and grilles. Annual Inspection of fan operation. 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

6.2. 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

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

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

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

6.2.5. **Protective services – Fire Extinguishers**

Location	All areas – Internal
Description	Fire Extinguishers.
Lifecycle	Annual Inspection
Required maintenance	Annual with Replacement of all extinguishers at year 10
Year	Annual / Year 10
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

6.2.6. **Sustainability – On Site Energy Generation**

Location	Roof
Description	Photovoltaic Panels.
Lifecycle	Annual Inspection
Required maintenance	Annual Clean and Maintenance inspections
Year	Annual
Priority	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
Selection process	Selection process to meet all requirements of Part L and renewable contributions of the site.
Reference	N/A