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BUILDING LIFE CYCLE REPORT

FOR

ROYAL CANAL PARK PHASE IV
THE FORMER ORMOND PRINTWORKS,
RATOATH RD.,
DUBLIN 11, D11 HY83

FOR

BALLYMORE RCP DEVELOPMENT SERVICES LIMITED

Project Reference:	J522
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1. INTRODUCTION

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.

The Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities (2018) (hereafter referred to as the SUH Guidelines) introduced a requirement to include details on the management and maintenance of apartment schemes. This is set out in Section 6.11 to 6.14 - "*Operation & Management of Apartment Developments*", specifically Section 6.13.

Section 6.13 of the SIH Guidelines 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"*
>
> *"demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents."*

This Building Life Cycle Report document sets out to address the requirements of Section 6.13 of the Apartment Guidelines. The report is broken into two sections as follows:

Section 03:

An assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application

Section 04:

Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.

2. PROPOSED DEVELOPMENT

The Royal Canal Park Phase IV mixed use development will consist of residential use and employment uses all located on a 1.88-hectare island site running from the junction of Ratoath Road and Ballyboggan Road to the 8th lock on the Royal Canal.

The proposed development consists of 5no. blocks ranging in height from 4 - 13 storeys and incorporating an under croft level. The resident's communal courtyard connects all residential blocks at first floor level. Roof terraces are also provided to the apartment blocks as a residential amenity.

At ground floor level and to the streetscape are active employment uses which have been arranged around 3 new public open spaces which are provided to the north, south and western sides of the development. These spaces actively engage with the streetscape ensuring interaction with the existing surrounding neighbourhood.

Employment uses (c.4,162 sq m) include a primary healthcare centre, a pharmacy, own door offices, and a juice bar/fitness centre.

All residential and mixed-use car parking is accommodated at ground floor below the residential courtyards. The car parking totals 242 undercroft spaces, and 942 bicycle parking spaces are provided. Access to the car parking is via Hamilton View Road. There are also on-street car parking facilities along Hamilton view comprising car club, electric cars and set down.

The Royal Canal Park Phase IV is a landmark development of high-quality architectural design which enhances the existing characteristics of this unique site whilst creating a new destination place along the banks of the Royal Canal.

3. AN ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS AS THEY WOULD APPLY ON A PER RESIDENTIAL UNIT BASIS AT THE TIME OF APPLICATION

3.1 Property Management of the Common Areas of the development

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development are kept within the agreed Annual operational budget.

The property management company will enter into a contract directly with the OMC for the ongoing management of the built development. Note This contract will be for a maximum period of 3 years and in the form prescribed by the PSRA.

The Property Management Company also has the following responsibilities for the apartment development once constructed:

- Timely formation of an Owners Management Company (OMC) – which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members of this OMC
- Preparation of annual service charge budget for the development common areas
- Fair and equitable apportionment of the Annual operational charges in line with the MUD Act
- Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act - including completion of Developer OMC Agreement and transfer of common areas
- Transfer of documentation in line with Schedule 3 of the MUD Act
- Estate Management
- Third Party Contractors Procurement and management
- OMC Reporting
- Accounting Services
- Corporate Services
- Insurance Management
- After Hours Services
- Staff Administration

3.2 Service Charge Budget

The property management company has a number of key responsibilities with first and foremost being the compiling of the service charge budget for the development for agreement with the OMC. The service charge budget covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/electrical lifts/ life safety systems, security, property management fee, etc, to the development common areas in accordance with the Multi Unit Developments Act 2011 (“MUD” Act).

This service charge budget also includes an allowance for a Sinking Fund and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared by for the OMC. The BIF report once adopted by the OMC, determines an adequate estimated annual

cost provision requirement based on the needs of the development over a 30-year cycle period. The BIF report will identify those works which are necessary to

maintain, repair, and enhance the premises over the 30year life cycle period, as required by the Multi Unit Development Act 2011.

In line with the requirements of the MUD Act, the members of the OMC will determine and agree each year at a General Meeting of the members, the contribution to be made to the Sinking Fund, having regard to the BIF report produced.

A sample format of the typical BIF report is set out in Appendix A.

Note: the detail associated with each element heading i.e. specification and estimate of the costs to maintain / repair or replace, can only be determined after detailed design and the procurement/ construction of the development and therefore has not been included in this document.

4. MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS.

4.1. ENERGY AND CARBON EMISSIONS

By taking due consideration of the energy and carbon emissions associated with the individual units of the proposed development will reduce the overall impact of the development on the environment, whilst reducing individual unit running costs for residents. The following are an illustration of the energy measures that are planned for the units to assist in reducing costs for the occupants:

Measure	Description	Benefit
BER Certificates	A Building Energy Rating (BER) certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation, and lighting and occupancy. It is proposed to target an A2/A3 rating for the apartments this will equate to the following emissions. A2 – 25-50 kwh/m2/yr with CO2 emissions circa 10kgCO2/m2 year A3 – 51-75 kwh/m2/yr with CO2 emissions circa 12kgCO2/m2 /year	Higher BER ratings reduce energy consumption and running costs.
Fabric Energy Efficiency	The U-values being investigated will be in line with the requirements set out by the current regulatory requirements of the Technical Guidance Documents Part L, titled "Conservation of Fuel and Energy Buildings other than Dwellings". Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance with Appendix D within the Technical Guidance Documents Part L. See below Table 1 of Part L, Building Regulations.	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, decrease energy consumption and thus minimise carbon emissions to the environment.
Energy Labelled White Goods	The white good package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating. It is expected that the below appliance ratings will be provided: Oven - A plus Fridge Freezer - A plus Dishwasher - AAA Washer/Dryer - B	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
External Lighting	The proposed lighting scheme within the development consists of 28 Watt LED luminaires mounted on 8 metre columns as indicated on the drawings. The luminaire selected is the Thorn 96268430 R2L2 S 24L35 NR 740 CL1. This luminaire was selected for the following reasons; 4000K CCT LED High efficiency 119 lm/W Minimum colour rendering: 70 Zero Upward Light Output Ratio (ULOR) LM80 >15 years using TM21-11 test results Driver current < 750mA Minimum IK08 impact resistance At least IP65 ingress protection Meets or exceeds all other DCC Specification criteria. Each light fitting shall be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.	The site lighting will be designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.

4.2 Low energy technologies

The following low energy technologies are being considered for the development and during the design stage of the development the specific combination from the list below will be decided on and then implemented to achieve Compliance with Part L 2019, A2/A3 BER Rating and striving to reach the upcoming NZEB (Near Zero Energy Building) standards:

Measure	Description	Benefit
Centralised Plant	Centralised plan will consist of Heat Pumps, Condensing Boilers in Cascading Arrangement and CHP. The Part L renewable contribution shall be covered by the combination of heat pumps and CHP unit. High efficiency gas boilers will be incorporated into the system.	High efficiency heat pump along with Condensing boilers & CHP offer reliable and effective solution for the development.
Combined Heat and Power (CHP)	Combined Heat and Power, (CHP), is a technology being evaluated. This technology generates electricity and captures the waste heat from the generation unit that can be used to heat the building and hot water within the development.	CHP can achieve energy efficiencies by reusing waste heat from electricity generation for space heating and domestic hot water services in the apartment developments. As electricity from CHP is both generated and consumed onsite, this also eliminates energy losses from transmission of the electricity.
Pumps	All pumps serving the plant to be A rated energy efficiency.	High efficiency band for appliances ensures reduction in required primary energy
BMS	Advanced Building Energy Management system will control the plant to ensure its operation to maximum efficiency.	Optimised plant operation will use less primary energy
Heat Interface Unit	Each apartment will be fitted with a Heat Interface Unit (HIU) which shall be wall mounted and designed to provide indirect space heating and Instantaneous DHW. Each unit contains an ultrasonic heat meter to fitted with MBUS communications which will be linked back to plantroom and provide a record of heat and hot water used by the occupier for purpose of billing.	The HIU has compact dimensions and greatly reduces the area required for plant within the apartments.
Mechanical Heat Recovery Ventilation	Mechanical heat recovery ventilation (MVHR) will be considered to provide ventilation with low energy usage. MVHR provides tempered fresh air to occupied spaces. Heat is removed from exhaust air stream and transferred into the fresh air supply stream negating the need to use energy to heat the air	MVHR reduces the heating load on the boiler plant by eliminating cold air infiltration
ECAR Charging Points	Within the parking areas, ducting shall be provided from a local landlord distribution board to all parking places and designated E-car charging car park spaces on street. This will enable the management company the option to install a number of E-car charging points within the carpark to cater for E-car demand of the residence. Ducting and on street infrastructure will also be provided at the development to provide EV charging facilities in on-street parking spaces. This system operates on a single charge point access card. A full re-charge can take from one to eight hours using a standard charge point.	Providing the option of E-car charging points will futureproof the development

4.3. SELECTION MATERIALS, FINISHES & TREATMENTS

The practical implementation of the Design and Material principles has informed design of building facades, internal layouts and detailing of the proposed buildings. Both aesthetics and durability played a central role in the design process, with the element of durability directly linked with the need and associated expense for the maintenance, upkeep or potential replacement of the selected materials. This design approach has been applied in equal part to both the external building envelope and the landscaping scheme. Some of these specific design measures include the following:

4.3.1. BUILDINGS

All proposed buildings are designed in accordance with the Building Regulations, in particular Part D 'Materials and Workmanship', which includes all elements of the construction. The Design Principles and Specification are applied to both the apartment units and the common parts of the building and specific measures taken include:

Measure	Description	Benefit
Daylighting	Window are provided to stair cores where possible providing natural daylight to circulation areas.	Avoids the requirement for continuous artificial lighting
Ventilation	Openable window sections are provided to stair cores within the development where possible providing Natural/Passive ventilation to common circulation areas.	Openable window sections are provided to all stair cores within the development providing natural daylight and ventilation throughout all common areas. Avoids costly mechanical ventilation systems and associated maintenance and future replacement.
Ventilation	Natural ventilation though grills, louvres and tree pits are proposed to provide fresh air to car park & ground floor enclosed areas.	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
Landscaping	External paved and landscaped areas	All of these require low/minimal maintenance Green roofs systems support the wider SUDS strategy for the development, protects the roof membrane and will thus minimize ongoing maintenance in the future.
Roofs	All roof construction to apartment blocks include green roof systems and landscaped garden terraces for the residents	Green roofs systems support the wider SUDS strategy for the development, protects the roof membrane and will thus minimize ongoing maintenance in the future.

4.3.2 MATERIAL SPECIFICATION

Measure	Description	Benefit
Durability	Consideration is given to the requirements of the Building Regulations and includes reference to BS 7543:2015, 'Guide to Durability of Buildings and Building elements, Products and Components', which provides guidance on the durability, design life and predicted service life of buildings and their parts. All common parts of the proposed Apartment buildings and, the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015. (Please see Appendix B for this figure). The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543: 2015 including: •Annex A Climatic Agents affecting Durability •Annex B Guidance on materials and durability •Annex C Examples of UK material or component failures •Annex D Design Life Data sheets	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.
Rainwater drainage	Central rain water gullies at roof level to collect rain water. Gullies connected with fusion welded HDPE pipework routed within the building in risers to GF level and into local storm drain network	High level of craftsmanship and material quality will reduce the maintenance requirements
Roof Accessories	Detailed desing will indicate what services will penetrate through the roof level. Fall arrest will be provided on the greeen roofs by post fix galvanized anchors fixed to the structural screed/pre-cast concrete slabs. Each anchor will then be linked by a cable running line to clip a harness.	
Roof Construction	Roof construction to apartments includes green roof systems & landscaped roof gardens. Pre-cast concrete roof slabs with concrete topping screed laid to falls to central gullies. Waterproofing provided by a bituminous layer covered with insulation and green/brown roof build up.	Green roofs systems protect the roof membrane and will thus minimize ongoing maintenance in the future.
External Walls	The architectural approach to the scheme proposed the extensive use of robust materials of brickwork and render to the building envelope. All external walls shall be combination of brick, render and metal panels	These traditional materials will require minimal on-going maintenance and have a longer life-cycle expectancy
External Windows & Doors	Use of factory finished and alu clad windows and doors. All windows shall be double glazed windows with a combined thermal transmittance not greater than 1.2W/m2K. All windows shall comply with BS EN ISO 10077-1: 2006 - 'Thermal performance of windows, doors and shutters.	Requires no on-going maintenance.
Balconies	Galvanized and powder coated steel frame and surrounding balustrade for balconies.	Requires no on-going maintenance.
Internal Floors	Detailed interior design will include combination of wood, tiles and carpet	High level of craftsmanship and material quality will reduce the maintenance requirements
Internal Walls	Taped and jointed internal partition walls, reinforced concrete walls with dry lined face at party wall locations	High level of craftsmanship and material quality will reduce the maintenance requirements
Internal Ceilings	Suspended ceiling made up of metal stud work and plasterboard which is taped and jointed	High level of craftsmanship and material quality will reduce the maintenance requirements
Internal Carpentry & joinery	Fitted kitchends and fitted wardrobes to all bedrooms	High level of craftsmanship and material quality will reduce the maintenance requirements
Internal Balustrades & handrails	All internal balustrades & handrails to be sand blasted, primed and painted	High level of craftsmanship and material quality will reduce the maintenance requirements

4.4 LANDSCAPING

Measure	Description	Benefit
Site Planning	Generous and high-quality landscape with ecological corridors designed within the proposed development. Pedestrians prioritized over the car. Significant tree planting and soft landscaping within courtyards and public spaces	Natural attenuation and landscape maintenance preferable
Green Roofs	Use of green roofs and roof gardens with robust and proven detailing to roof elements.	Attenuation reduces the burden on vulnerable rainwater goods, resulting in fewer elements that could require replacement or repair.
Paving Materials	Use of robust materials with high slip resistance to be used for paving. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.	Required ongoing maintenance significantly reduced through use of robust materials installed proven details.
Planting details	Proven trees staking details. Shrub, hedging, herbaceous and lawn installation planting details provided.	Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.

4.5 WASTE MANAGEMENT

Measure	Description	Benefit
Construction and Demolition Waste Management Plan	The application is accompanied by an Outline Construction and Demolition Waste Management Plan prepared by AWN.	The report demonstrates how the scheme has been designed to comply with best practice.
Operational Waste Management Plan	The application is accompanied by an Outline Operational Waste Management Plan prepared by AWN.	The report demonstrates how the scheme has been designed to comply with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Bins for commercial properties are located adjacent and ease of access for waste collection truck is considered.	Easily accessible by commercial premises users.
	Inclusion of 2 locations for centralised bin storage system in ground floor to serve the apartment cores. Domestic waste management strategy: Grey, Brown and Green bin distinction. Competitive tender for waste management collection.	Easily accessible by all residents and minimises potential littering of the scheme Helps reduce potential waste charges.
Composting	Organic waste bins to be provided throughout.	Helps reduce potential waste charges.

4.6 HEALTH & WELL BEING

Measure	Description	Benefit
Sunlighting	The design, separation distances and layout of the apartment blocks have been designed to optimize the ingress of natural daylight/ sunlight to the proposed dwellings to provide good levels of natural light.	Reduces reliance on artificial lighting thereby reducing costs.
Accessibility	All units will comply with the requirements of Part M/K and a universal access statement is provided within the design statement of this submission.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
Security	The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: CCTV monitoring details Car registration recognition at entrance gate Secure bicycle stands – covered by CCTV Routine access fob audits	Help to reduce potential security/management costs
Natural Amenity	Adjacent Tolka Valley Park, Lanscaped courtyard garden located in the centre of the development, adjacent public plazas and link to Royal Canal Greenway	Proximity and use of parks promotes a healthy lifestyle
	Generous courtyard spaces incorporated between the apartment blocks	Facilitates community interaction, socialising and play – resulting in improved wellbeing

4.7 MANAGEMENT

Measure	Description	Benefit
Home User Guide	Once a purchaser completes their sale, a homeowner box will be provided which will include: **Homeowner manual** – this will provide important information for the purchaser on details of their new property. It typically includes details of the property such as MPRN and GPRN, Information in relation to connect with utilities and communication providers, Contact details for all relevant suppliers and User Instructions for appliances and devices in the property. **A Residents Pack** prepared by the OMC which will typically provide information on contact details for the Managing agent, emergency contact information, transport links in the area and a clear set of rules and regulations	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner. The documents will include simple giudes for using the building services aim to inform the building occupants on effective strategies to use less resources, efficient appliances, efficient use of their heating/hot water controls and efficient transport/ commuting.

4.8 TRANSPORT

Measure	Description	Benefit
Access to Public Transport (DART)	The permitted Pelletstown Train Station is located approximately 300m to the southwest of the proposed development. This equates to an approximate 3mins walk from the development to the train station and provides linkages to Connolly Station in Dublin City Centre. Construction of the Pelletstown Train Station is due to commence in 2020.	The DART and light rail provides an alternative high frequency public transport option to the bus for commuting to the city centre. The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Access to Public Transport (LUAS)	The proposed development is located approximately 650m to the northwest of the Broombridge Luas Stop. This equates to an approximate 10mins walk from the development to the Luas and provides linkages to Dublin City Centre as well as employment centres located in Sandyford and Tallaght.	The LUAS provides an alternative high frequency public transport option to the bus for commuting to the city centre. The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Access to Public Transport (Bus Services)	A number of bus routes service the proposed development vis the Rathoath Road located to the east of the site. These services include: 40e – Tyrrelstown to Broombridge Luas; 70d – Dunboyne to DCU; 120 – Ashtown Station to Parnell St. There are addition stops for the 120 bus service located on Hamilton View and Spindrift Avenue which are located less than 100m from the proposed development.	The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Permeable Connections (Walking & Cycling)	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with the public road network providing convenient access to local services including shops, schools, restaurants and doctor's surgeries. The Royal Canal Greenway is located adjacent to the proposed development. It is proposed to provide direct access to the greenway from the development. The Greenway forms part of Dublin to Galway East-West Link & Euro Velo Route 2. A number of sections of this greenway are under construction or are due to commence construction shortly. When this greenway is complete it will provide a high quality, high Level of Service cycle route connecting the proposed development with Dublin City Centre.	Ensure the long-term attractiveness of walking and cycling to a range of local education,retail and community facilities and services.
Bicycle Storage	Ensure the long-term attractiveness of walking and cycling to a range of local education,retail and community facilities and services.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle and encourages use of amenity spaces provided to stimulate a more vibrant and active series of open spaces.
Motorcycle Parking	The implementation of secure, attractive, best practice motorcycle parking facilities for residents.	Reduces the reliance on the private motor vehicle in parallel with reducing oil dependency.

E-car Facilities	Ducting shall be provided from a local landlord distribution board to designated E-car charging car park spaces. This will enable the management company the option to install a number of E-car charging points within the car parking layout to cater for E-car demand of the residence. A full re-charge can take from one to eight hours using a standard charge point.	To accommodate the growing demand for E-car which assist in decarbonising society and reducing oil dependency. Providing the option of E-car charging points will allow occupants to avail of economically efficient and environmentally friendly electric car
Car Sharing	The scheme will include number of designated car sharing spaces for exclusive use of the residents. There will be five car parking spaces for provided for a car sharing scheme such as "Go Cars" within the development. "Go Car" is a pay-as-you-drive scheme which allows subscribed members to share in the use of a pool of vehicles by reserving a time allocation online in advance.	Reduces the reliance on the private motor vehicle and reducing oil dependency. Also cost saving, convenience (no responsibility for insurance, tax, fuel, maintenance) for the residents, less traffic congestion and less parking pressure.

APPENDIX A: ITEMS INCLUDED IN A TYPICAL BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund. It is based on a Apartment Block A in the development.

BUILDING INVESTMENT FUND (SINKING FUND) ESTIMATION
Example Apartment Block A
Specification to be finalized at detailed design stage

REF	ELEMENT	LIFE EXPECTANCY
1	**ROOFS**	
1.01	Replacement green roof covering incl. insulation to main roofs	25
1.02	Replacement parapet details	18
1.03	Replace roof access hatches	25
1.04	Specialist Roof Systems - Fall arrest	25
2	**ELEVATIONS**	
2.01	Decorate plaster finishes to apartment core & bin storage	18
2.02	Minor repairs and preparation for decorations of rendered areas (if applicable)	18
2.03	Replace exit/ entrance doors	25
2.04	Replace Rainwater goods	25
2.05	Recoat powder coated Finishes to balconies	20
2.06	Periodic replacement and overhauling of external fixings	5
2.07	Replace Balcony floor finishes	25
3	**STAIR CORES & LOBBIES**	
3.01	Decorate Ceilings	7
3.02	Decorate Walls	7
3.03	Decorate Joinery	7
3.04	Replace fire doors	25
3.05	Replace carpets (stairwells & lobbies)	12
3.06	Replace entrance mats	10
3.07	Replace nosings	12
3.08	Replace ceramic floors tiles	20
5	**M&E SERVICES**	
5.01	General - Internal relamping	7
5.02	Replace Internal light fittings	18
5.03	Replace External light fittings (lights at entrance lobbies)	18
5.04	Replace smoke detector heads	18
5.05	Replace manual break glass units	18
5.06	Replace Fire alarm panel	18
5.07	Replace lift car and controls	25
5.08	Replace AOV's	25
5.08	Replace security access control installation	15

5.09	Sump pumps replacement	15
5.1	External Mains Water connection	20
5.12	Electrical Mains and Sub Mains distribution	20
5.13	Emergency Lighting	20
6	**EXTERIOR**	
6.01	Repaint car parking	12
6.02	New tarmac	60
6.03	External boundary treatments - Recoat powder coated Finishes to railings	60
6.04	Replace cobble block areas	18
6.05	10 year cutback & thinning of trees. Overhaul landscaping generally	10
6.06	Replace CCTV provision	12
6.07	External Handrails and balustrade	18

APPENDIX B: PHASES OF THE LIFE CYCLE OF BS7543; 2015

Table 1 - Categories of Design Life for Buildings (from BS 7543:1992)

Category	Description	Building Life	Examples
1	Temporary	Up to 10 yrs	Site huts; temporary exhibition buildings
2	Short life	Min. 10 yrs	Temporary classrooms; warehouses
3	Medium Life	Min. 30 yrs	Industrial buildings; housing refurbishment
4	Normal life	Min. 60 yrs	Health, housing and educational buildings
5	Long life	Min. 120 yrs	Civic and high quality buildings

APPENDIX C: PHASES OF THE LIFE CYCLE OF BS7543; 2015

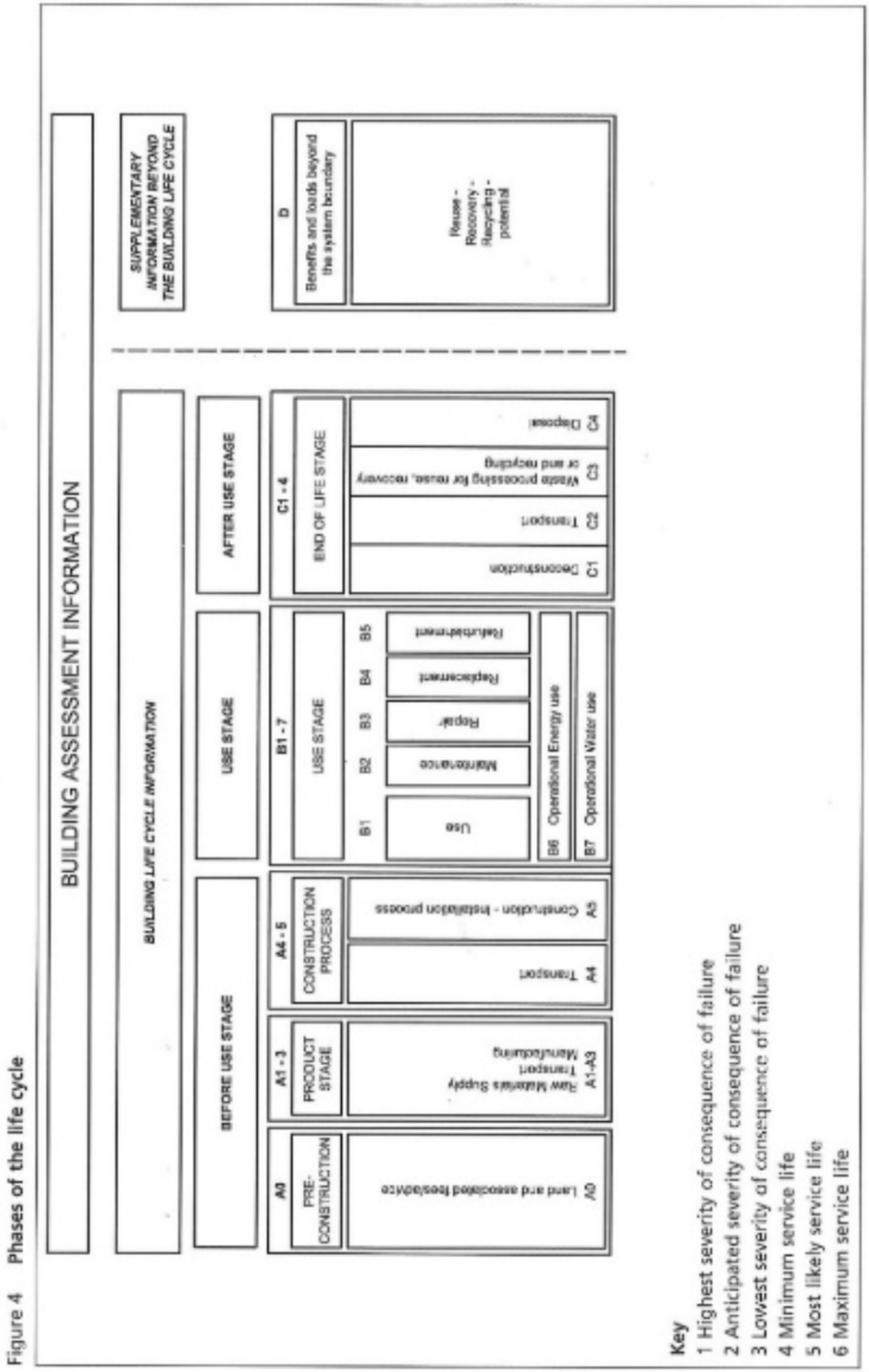

Figure 4 Phases of the life cycle