MOLA
Architecture

Building Lifecycle Report

Abingdon Residential Development, Co. Dublin

9th October 2020

ABS19-MOLA-XX-XX-RP-A-XX102-BLR

Contents

Introduction

The Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (March 2018) provides policy guidance on the operation and management of apartment developments with the stated aim of introducing certainty regarding their long-term management and maintenance structures.

Section 6.11 - 6.14, Operation and Management of Apartment Developments, state that consideration of the long-term running costs and the eventual manner of compliance of the proposal with the Multi-Unit Developments Act, 2011 are matters which should now be considered as part of any assessment of a proposed apartment development. To achieve this policy objective, planning applications for apartment developments must include a Building Lifecycle Report which is referenced in section 6.13 of the Apartment Guidelines 2018;

"Accordingly, planning applications for apartment development shall include a building lifecycle report which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents." (Section 6.13 of the Apartment Guidelines 2018)

This Report has been prepared by design team members on behalf of Lark Finance Limited and SM Blackhorse Limited in response to the above objective. It is divided into three sections;

Section 1
Assesses long term running and maintenance costs as they would appear on a per residential unit basis at the time of application.

Section 2
Measures considered methodology and building aspects that aim to effectively manage and reduce costs for the benefit of the residents.

Section 3
Provides a detailed energy report for the proposed development.

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Proposed Development

ES Shan Limited, are applying to An Bord Pleanála for permission for a strategic housing development at this site "Site to the south of Abingdon", Shanganagh Road, Dublin 18.

The development will consist of a Strategic Housing Development for the construction of a Build to Rent (BTR) residential scheme comprising 193 no. apartments within 4 no. blocks ranging in height from 5 to 8 storeys. All apartments will be provided with associated private balconies/terraces facing north/ south/ east/ west. Provision of residential communal facilities, car parking spaces, bicycle parking spaces, and motorcycle spaces. Vehicular connection via Clifton Park. Along with two additional pedestrian/cyclist accesses to Rathsallagh Grove to the south. All associated site development works and services provisions including bin storage areas, substations/switch rooms, plant rooms, boundary treatments and landscaping.

Section 1

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

1.1 Property Management of the Common Areas

A property management (Estate management) company will be carefully selected and 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. This will involve the management of all four proposed apartment blocks. The property management company will enter into a contract directly with the Owners Management Company (OMC) for the ongoing management of the built development. This contract will be for a maximum period of 15 years and in the form prescribed by the PSRA. The Property Management Company will undertake the subsequent tasks for the apartment development upon completion:

- Appropriate establishment of an Owners Management Company (OMC) – which will be a limited company having no share capital. Members of this company can be elected and re-elected as directors on annual basis.
- Preparation of annual budget, which will determine the service charge for the development common areas. This will be inclusive for and apartments.
- Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (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 the MUD Act.
- General Estate Management
- Third Party Contractors Procurement and management.
- OMC Reporting.
- Accounting duties
- Corporate Duties.
- Insurance Management.
- After Hours Services, and emergency contact point for building defects

1.2. Service Charge Budget

The property management company has several key responsibilities, mainly the compiling of the service charge budget for the development for agreement with the OMC. The service charge budget covers items such as:

- Street Cleaning
- General upkeep and cleaning of external common areas, roof terraces, gallery access points
- General Cleaning and upkeep of internal common areas
- Landscaping and play area
- Refuse management,
- Utility bills,
- Insurance,
- Maintenance of mechanical/electrical lifts/life safety systems,
- Security Management,
- 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 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 30-year life cycle period, as required by the Multi Unit Development Act 2011.

Section 2

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

2.1 Building Design / Materials

The practical implementation of the Design and Material principles has informed the design of internal layouts, detailing of the proposed apartment buildings, and building facades. The façade materials will consist of brick, pre-cast concrete, glazing, and profiled metalwork. The apartment 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
Site layout	A single vehicular access route has been provided. Surrounding the buildings, high quality soft and hard landscaping cater for residents. The landscaping will be fully compliant with the requirements for Part M / K of the TGD and will provide level access and crossings for wheelchair users and pedestrians with limited mobility. Designated car parking including accessible & visitor car parking reduces the travel distances for visitors with reduced mobility.	No through route limits car activity to residents and visitors only. Reducing the movement of cars increases the safety for pedestrians and cyclists. High quality residential environments reduce vandalism and antisocial behavior issues.
Daylight to apartments	Consideration for approaches to daylight provisions as outlined in guides such as the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) and BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' should be followed. In response to these guides, the blocks have been positioned in a north-south direction. The units and surrounding amenity space therefore benefit from an east-west aspect.	Good daylight and sunlight contribute to making a building energy-efficient. It reduces the need for electric lighting and good solar gain can reduce heating requirements.

Balconies & openable windows	Use of inset balconies shelters residents from prevailing wind and rain. Operable windows allows individuals to clean windows themselves	Increases use of private amenity space Reduces cost and reliance on 3rd party contractors for cleaning & maintenance
Podium Ventilation	Naturally ventilated podium car parking	Omits need for mechanical ventilation system therefore reducing cost and associated maintenance/future replacement.

Measure	Description	Benefit
Materials generally	Consideration has been given 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 building 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	Ensuring that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development. Eliminating/reducing the need for any future maintenance reduces costs.
Proposed Materials	Use of brickwork, precast concrete and PPC metalwork to building envelope.	Requires no ongoing maintenance. PPC metal protects finish from UV bleaching.

2.2 Landscape

Measure	Description	Benefit
Site Planning	The landscape has been designed to respond to site conditions and influence the masterplan in order to create a unique user experience. There are a variety of spatial typologies and scales which have been programmed to cater for a number of user groups and activities such as play for toddlers and older children, exercise, ball courts, seating areas and areas for community gatherings.	Both the physical and visual connection to landscape provides positive impact on health and wellbeing of the community. The creation of spaces on larger and smaller scales caters for individual activities or groups and thus encourages residence to engage with the natural environment and one another.
Green Roofs	Use of green roofs and traditional roof coverings 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.
Hard Landscape	The selection of hard landscape materials is determined by function but also to provide a cohesive palette of materials throughout. Materials are chosen for durability, but where practical are proposed to be constructed in a way which is sensitively integrated with lawn and soft landscape, in order to minimise the impact of hard landscape surfaces. Furniture and equipment (e.g. play, exercise, fencing etc.) will be durable and robust with multifunctional uses with soft pour at play and exercise areas.	The use of robust high quality paving materials is intended to provide materials that reduce the need for ongoing maintenance costs. Other materials such as for play, seating, fencing etc. are sustainable and robust material types that are designed to reduce the frequency and need for repair and maintenance over time.
Soft Landscape	The landscaped public space at grade and podium gardens will incorporate dense planting. There will also be a soft landscaped green buffer zone and pedestrian footpath to link to the Park. All proposed planting species have been selected based on their suitability for their location. Native plants have been included where suitable to assist in improving urban biodiversity and diversify the pollination ability within Ireland in accordance with the All Ireland Pollination Plan. All planting will be provided with the suitable depth of topsoil and will provide adequate growing space for planting. All landscaping will be implemented and maintained in accordance with the maintenance and management schedule.	The soft landscaping should be appropriate to the location and be able to be maintained and managed at reasonable cost. It will have a net gain for bio-diversity, provide a changing landscape to follow the seasons and thus create interest and positive impacts on residence. Soft landscape areas drain more naturally and recharge the water table while creating habitat.

2.3 Waste Management

Measure	Description	Benefit
Construction and Operational Waste Management Plan	The planning application is accompanied by a Outline Construction and Demolition Waste Management Plan	The report demonstrates how the scheme has been designed to comply with national regional, local waste legislation and with best practice. The report also provided as a basis for the contractor to develop a construction stage waste management operation.
Storage of Non-Recyclable Waste and Recyclable Waste	There is a separate waste storage area for each block. All waste storage areas have adequate space to accommodate weekly storage of bins for dry mixed recyclable, glass, organic waste and mixed non-recyclable waste.	Easily accessible by all residents, tenants, facilities management personnel and the waste contractor(s), minimises potential littering of the scheme, reduce potential waste charges and does not limit waste contractor selection.
	Domestic waste management strategy: All dry mixed recyclable, glass, mixed non-recyclable waste and organic waste segregation.	Helps reduce potential waste charges and does not limit waste contractor selection.
	Security restricted waste storage rooms.	Reduce potential for fly tipping by residents, tenants and the public.
	Well signed waste storage rooms and waste receptacles.	Help reduce potential cross contamination of waste and reduce waste charges.

2.4 Health and Wellbeing

Measure	Description	Benefit
Natural Daylight	The buildings have been orientated to optimize natural daylight/sunlight to the proposed apartments and amenity spaces. Units and external amenity spaces benefit from an east west orientation which will provide good levels of natural light. The angled layout also aims to maximize southern light to the podium gardens.	Good daylighting levels reduce the need for artificial lighting thereby reducing costs. Greater light levels also contribute to the livability and amenity enjoyed by residents.
Security	The scheme has been designed to incorporate passive surveillance with the following security strategies likely to be adopted: • Secure bicycle stands – covered by CCTV • Routine access fob audits • Controlled access points between private and public amenity areas (podiums)	A robust security strategy, reduces potential security/management costs, lessens anti-social behavior and enhances the safety for residents.
Accessibility	All units, including access and egress, will comply with the requirements of Part M/K	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
Natural Amenity	Private open space is located at podium level. All the external ground floor landscape will be accessible to the residents and the public.	The quality and quantity communal amenity spaces facilitates community interaction, socialising and play – resulting in improved wellbeing.

2.5 Management

Consideration has been given to the ensuring the homeowners have a clear understanding of their property.

Measure	Description	Benefit
Home User Guide	Once a tenant moves into the property they will be provided with; • Home User Manual – this will provide important information for the tenant on details of their property. It typically includes details of the property such as MPRN and GPRN, information in relation to utility connections/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.	These clear lines of communication, information and prompt management of issues will over time result in a better development quality and longevity, for these apartments and townhouses

2.6 Transport

Measure	Description	Benefit
Access to Public Transport (Bus Services)	There are a number of bus routes that serve the subject site. These routes provide links from the subject site's general vicinity to the city centre and all intermediate destinations. Adjacent bus routes services include: 7b, 7d, 45a, 45b, 145, 155, 84 and 84a.	These bus services provide access to a range of destinations. The proximity, frequency and range of additional destinations served by these local bus services enhance the accessibility levels of the proposed residential development in addition to providing a viable and practical sustainable alternative to journeys undertaken by the private motor car.
Access to Public Transport (Train Services)	The subject site is located circa 800m (10min walk) from Shankill DART station. This DART station provides train connections to Dublin City Centre, national rail connections via Connolly Station, all stations along the DART route, connectivity to the LUAS via Connolly Station	Shankill DART station Train Station provide access to a range of destinations. The proximity, frequency and range of additional destinations served by Boombridge Train Station enhance the accessibility levels of the proposed residential development in addition to providing a viable and practical sustainable alternative to journeys undertaken by the private motor car.
Permeable Connections	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with adjoining public and third-party lands and the off-site networks, providing convenient access to local services including shops, schools, restaurants and doctor's surgeries.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities/services.
Bicycle Storage	The provision of high-quality secure bicycle parking facilities, for both short term and long-term parking requirement	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
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	Electric car charging will be provided within the development	To accommodate the growing demand for E-car which assist in decarbonising society and reducing oil dependency.
Car Sharing	2 'Gocar' or equivalent car sharing parking spaces are proposed within the development, and there are 'Gocar' car parking space(s) available at the Shankill DART station	Reduces the reliance on the private motor vehicle and reducing oil dependency

Section 3

FALLON DESIGN
M&E ENGINEERING

SUSTAINABILITY & ENERGY REPORT
MECHANICAL & ELECTRICAL
ABINGDON

Abingdon,
Shanganagh Road
Shankill,
Co. Dublin

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Date: Sep 2020

Contents:

Project Details:

Project: Abingdon, Shanganagh Road, Shankill, Co. Dublin

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1. Introduction

The following report will set out the mechanical and electrical strategy including Part L compliance for the proposed residential development at Abingdon, Shanganagh Road, Shankill, Co. Dublin. The compliance will be in accordance with the latest 2019 Part L: Conservation of Fuel & Energy – Dwellings.

2. Project Description

ES Shan Limited, are applying to An Bord Pleanála for permission for a strategic housing development at this site “Site to the south of Abingdon”, Shanganagh Road, Dublin 18.

The development will consist of a Strategic Housing Development for the construction of a Build to Rent (BTR) residential scheme comprising 193 no. apartments within 4 no. blocks ranging in height from 5 to 8 storeys. All apartments will be provided with associated private balconies/terraces facing north/ south/ east/ west. Provision of residential communal facilities, car parking spaces, bicycle parking spaces, and motorcycle spaces. Vehicular connection via Clifton Park. Along with two additional pedestrian/cyclist accesses to Rathsallagh Grove to the south. All associated site development works and services provisions including bin storage areas, substations/switch rooms, plant rooms, boundary treatments and landscaping.

3. Apartments – Mechanical Solution

3.1 Exhaust Air Heat Pump (EAHP) & Mechanical Extract Ventilation (MEV)

The heating and hot water strategy shall be used for the apartments in the development in accordance with current Part L of the building regulations and compliance demonstrated with the latest edition of the DEAP software.

3.2 Element 51 – Heating Centre

The proposed heating and hot solution for the apartments shall be designed as an exhaust air heat pump. An Exhaust Air Heat Pump (EAHP), is an energy recycling system. It extracts energy from the warm air as it leaves the home via the ventilation system and uses it to heat the radiators and Domestic Hot Water (DHW).

The installation of an EAHP is self-contained within each apartment and only requires an ESB connection and standard mains water connection.

An exhaust air heat pump can satisfy the heating requirements of a well-insulated apartment in some of the coldest conditions. When working efficiently, it can reduce energy consumption of heating by up to 50% when compared to conventional heating systems.

If there is an extended period of cold weather the heat pump will call on a suitably sized back up heater to assist in meeting the apartments requirement.

The extracted air from the wet rooms is passed through the ducting into the heat pump. At this point, if there is a heat or hot water demand, the air passes through the heat pumps evaporator, which transfers the heat into the heat pump's refrigerant circuit.

The cooled air is then discharged from the unit and exhausted outside. Meanwhile, the vapour compression cycle of the heat pump raises the temperature of the refrigerant and transfers the extracted heat into a water-based system that can either heat the domestic hot water via a coil in an indirect cylinder or heat the building via radiators.

The EAHP is controlled with a touchscreen wall controller in each apartment with a phone app function as standard.

A local 200 litre hot water storage cylinder shall be located in a hot press of each apartment and meets the demands of the resident's hot water. An electric immersion shall be installed for boost and fast recovery of the cylinder if required.

3.2.1 Element 56 – Space Heating

The units will be heated with steel, horizontal panel radiators in each room of the units and designed for the operating temperature of the heat pump.

Each unit shall have two heating zones, the first zone will be the main open plan kitchen / living room and the second zone will be the bedrooms.

Heating control in the kitchen / living room will be with a 2-port valve and the room thermostat. Heating control in the master bedroom will be with a 2-port valve and thermostat. TRV's will control the space temperature in all other bedrooms.

3.2.2 Element 57 – Ventilation

The ventilation for the apartments shall be provided by the EAHP and be classed as mechanically ventilated. The central extract shall operate on the principle of mechanical extract ventilation (MEV).

MEV will be commissioned with two dedicated extract flow rates for the unit, one for background ventilation and one for boost ventilation.

- The background ventilation rate will be maintained 24/7 in order to ventilate the unit and maintain the heat pump operation volume flow rate.
- The boost ventilation will be activated by a drop-in air or water temperature and raise the volume flow rate to a maximum pre-set value.
- Passive wall inlet vents are required in all habitual rooms.

4. Electrical Services

Element 61- Mains Distribution

A new ESB electrical supply will be brought to each apartment in accordance with ETCI and ESB standards. A centrally located meter enclosure shall be provided with direct access from the public road.

Element 63 – Lighting Services

Low energy LED lighting shall be designed and specified in accordance the BER requirements in each unit and in the landlord areas in accordance with Part L.

Low energy LED public lighting shall be designed in accordance with CIBSE lighting guide and local County Council public lighting standards.

5. Electric Vehicle (EV):

Element 62- General Services

With introduction of new guidelines from the Irish government and the growing demand for alternative sources of fuel, the publics need for EV charging options is ever increasing in popularity. The following allowance will be included in the development for EV charging.

Apartments:

Electric car park spaces shall be provided with EV charging points for the development as per the drawings. The remainder of the apartment car park spaces shall be enabled for 3rd party management company operated EV charging points. This will be managed with pre-paid open access for all residents and the number and points can be added as demand from the residents increases.

Visitor / Public Spaces:

Visitor spaces shall be supplied and installed with EV points to allow the visitors of the apartments charge their electric cars. The supplies will be located around the development in the dedicated visitors' spaces and ducted to ESB mini-pillars for installation and operation by a third party.

6. Proposed Building Fabric Summary:

6.1 Construction Method:

The proposed construction method for the building shall be in accordance with the engineer's drawings and façade finishes as per the Architectural specification. The following shall outline the back-stop thermal performance achieved as part of the detailed design stage in accordance with the current Part L 2019 requirements achieving nearly energy zero standards;

Fabric	U Value
Floor	0.15 W/m^{2}K
Wall	0.18 W/m^{2}K
Roof: Type No 1 Type No 2	 0.14 W/m^{2}K 0.16 W/m^{2}K
Main Door	1.2 W/m^{2}K
Windows	1.3 W/m^{2}K

6.2 Air Tightness:

Air tightness Target: < 3m^3/hr/m^2 at 50 Pascals

Air tightness Method: Air tight membrane with internal plaster

6.3 Thermal Bridging:

Thermal Bridging Factor: 0.08 W/m^{2}K

Key junction details will meet ACD standards. The relevant construction drawings must be will be signed off by the developer, builder, site engineer & project Architect in compliance with the requirements of SEAI and B(C)AR.

Glossary of Terms:

- HP Heat Pump
- CH & DHW Central Heating & Domestic Hot Water
- kWh's Kilowatt Hours
- EAHP Exhaust Air Heat Pump
- MEV Mechanical Extract Ventilation
- TRV Thermostatic Radiator Valve
- DCV Demand Control Ventilation

Appendix A

Phases of the Life Cycle of BS7543; 2015

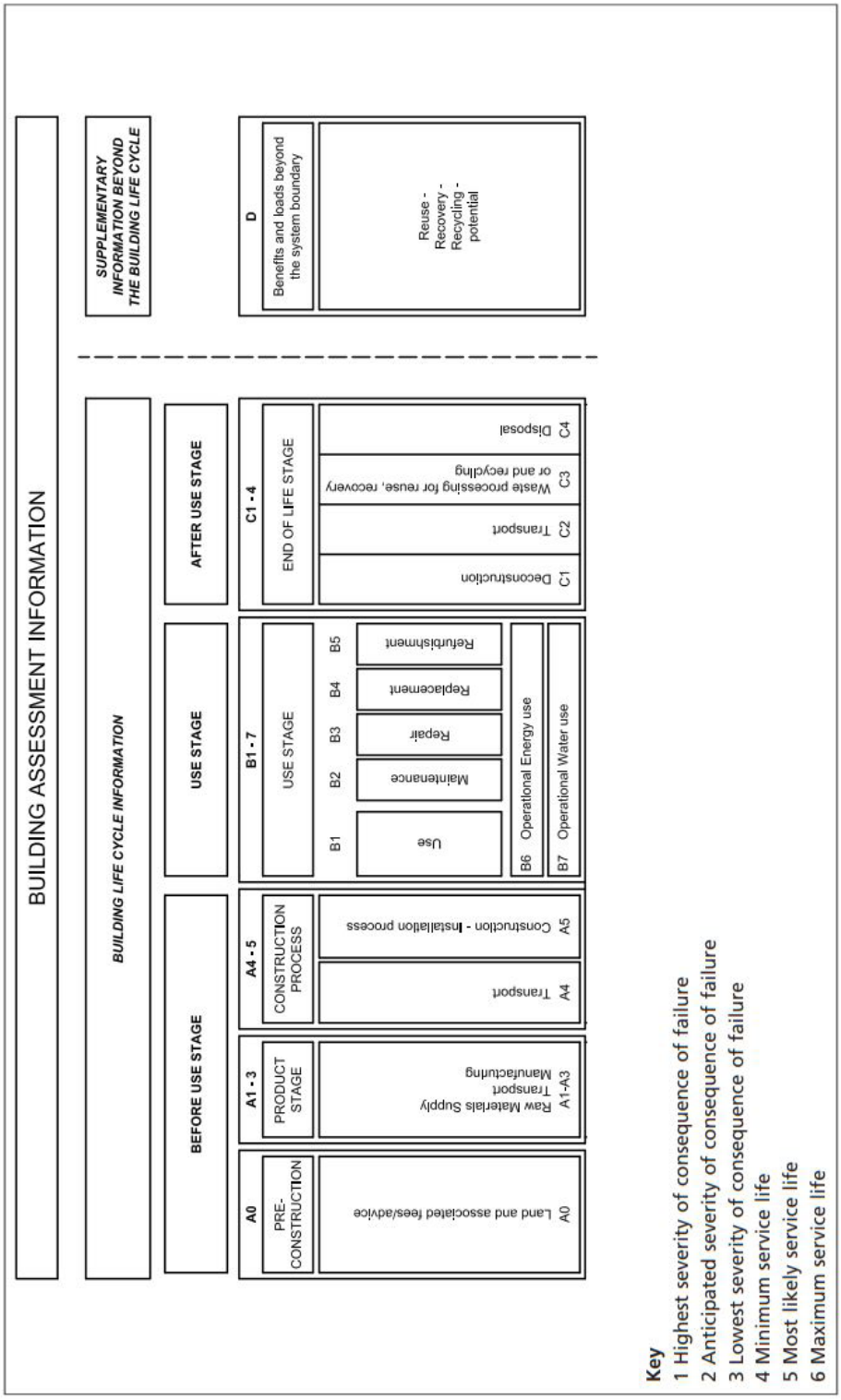

Figure 4 Phases of the life cycle

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