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BUILDING LIFE CYCLE REPORT

In respect of:

Planning Application

at BTS Residential, Scholarstown House, located at the junction of Scholarstown Road and Orlagh Grove , Dublin 16, D16 E2H9.

Prepared by:

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On behalf of the applicant:

Emmaville Ltd.

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1.0 Introduction

This Building Life Cycle report has been prepared in support of the planning application proposed by Emmaville Ltd. (the Applicant) for a new residential development, on lands measuring approximately 0.79ha, located on a site that lands at the junction of Scholarstown Road and Orlagh Grove, Dublin 16, D16 E2H9.

SDCC Development Plan Chapter 12.6.7 notes:

Ensuring the consideration of the long-term running costs and the eventual manner of compliance of the proposals with the Multi-Unit Developments Act, 2011 (MUD Act) should be considered. The MUD Act sets out the legal requirements regarding the management of apartments developments.
As such, planning applications for apartment developments shall include a building lifecycle report. The contents of this, in line with the Sustainable Urban Housing: Design Standards for New Apartments (2020) 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.

- Property Management of the Common Areas of the development.
- Service Charge Budget;
- The report should demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.

The report is broken into two sections as follows:

Section A: 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 B: Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents

Section C: Provides a detailed energy report for the proposed development.

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2.0 Proposed Development

The proposed development is as follows:

Emmaville Limited intend to apply for: Permission for development at this site: Scholarstown House, Scholarstown Road, Dublin 16, D16 E2H9.
The application site is bounded to the south by Orlagh Grove residential estate, to the east by St Colmcille's Community School, to the north by Scholarstown Road, and to the west by Orlagh Ave residential estate and other adjoining institutional lands.

The application site contains a Protected Structure i.e., Scholarstown House.

The development will consist of the following:

(a) The demolition of the 4 no. existing shed structures on site within the curtilage of the protected structure;

(b) The retention and conversion of Scholarstown House (Protected Structure) into two no. units comprised of 1 no. 2-bed and 1 no. 3-bed units served by private open space in the form of ground floor terraces. The proposed works to Scholarstown House include but are not limited to internal re-configuration; the re-location of the staircase to its original location within the house; the removal of non-original features including the closing up of non-original openings; and the creation of a new door opening within the existing alcove, and the blocking up of a window opening both located on the northern elevation.

(c) The construction of a 5-storey apartment block containing 74 no. apartment units comprised of 32 no. 1-bed apartments, 33 no. 2-bed apartments, and 9 no. 3-bed apartments all served by private open space in the form of balconies and/or ground floor terraces.

(d) The proposed development also includes 100 sq.m of residential amenities and facilities consisting of but not limited to a reception, communal amenity room and parcel room.

(e) The development will be served by a total of 40 no. car parking spaces including 8 no. EV parking spaces and 183 no. cycle parking spaces accessed via a new pedestrian and vehicular access off Orlagh Grove with the existing entrances on Scholarstown Road and Orlagh Grove being re-configured to provide for pedestrian and cycle access.

(f) The development will also consist of all ancillary development works required to facilitate the development including but not limited to, plant rooms, a substation, bin stores, landscaping, boundary treatments and lighting.

3.0 Section A

Long-Term Running Costs

The aim of the developer is to manage and minimise potential unnecessarily high running costs on a per residential unit basis. Alanna Homes has a proven track record in the delivery of high-quality homes and apartments and have applied their experience to ensure the provision of a product which will be well managed and easily maintained.

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 running and maintenance costs of the common areas of the development are kept within the annual operational budget.

The property management company will enter into a contract directly with the Owner's Management Company (OMC) for the ongoing management of the built development. It is intended that this is a contract for a maximum of 5 years and in the form prescribed by the PSRA.

The property management will also have the following responsibilities for the apartment development once completed:

- Timely formation of an Owner's 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.
- Estate management.
- Third Party Contractors procurement and management.
- OMC Reporting.
- Accounting Services.
- Corporate Services.
- Insurance Management.
- After Hours Services.
- Staff Administration.

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3.2 Service Charge Budget

The property management company has a number of key responsibilities, primarily 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
- Landscaping
- 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, 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.

3.3 Sinking Fund

It is expected that a sinking fund allowance will account for future major maintenance and upgrade costs. A 10-year Planned Preventative Maintenance (PPM) strategy will determine the level of sinking fund required.

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.

4.0 Section B

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

4.1 Energy and Carbon Emissions

The following is an illustration of the energy measured 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, lighting and occupancy. A Nearly Zero-Energy Building (NZEB) rating will be achieved in accordance with Part L 2019 (Housing) and Part L 2020 (Other than Housing) which set building fabric and energy performance requirements.	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, 'Conservation of Fuel and Energy Buildings other than Dwellings'.	Lower U-values and improved air tightness is being considered to help minimise heat losses through the building fabric, lower of energy consumption and thus minimise carbon emissions to the environment.
Energy Labelled White Goods	The white goods package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.

Internal Common Areas & External lighting	Low energy luminaires and automatic controls such as time sensors are to be provided for electric lighting to maximize efficiency in use. LED lamps will be preferred as far as is practical. Public / external lighting will be provided to ensure 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. The luminaires selected are chosen for the following reasons: ▪ Low Level lighting ▪ Minimal upward light spill ▪ Low voltage LED lamps ▪ Prep to be approved by South Dublin City Council	Low energy lamps and automatic controls improve energy efficiency. The site lighting has been 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 fauna and flora in the area.

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The following are the **low energy technologies** that are being considered for the development and during the design stage of the development in order to meet the requirements of Part L of the Building Regulations and to meet the Near Zero Energy Building standard, if required. The specific combination from the list below will be decided upon and then implemented to achieve an NZEB rating. All apartment units have been oversized to allow for in-unit plant, such as air source heat pump to be installed without affecting development standards.

Measure	Description	Benefit
Condensing boilers	Condensing boilers are being investigated as they have a higher operating efficiency, typically over 90% than standard boilers and have the benefit of lower fuel consumption resulting from the higher operating efficiencies.	Higher BER ratings reduce energy consumption and running costs Condensing boilers use the heat losses from the boiler flue to preheat the circulating heating water By preheating the heating water, the boiler can achieve efficiencies in excess of 90%
Natural Ventilation	Natural ventilation is being evaluated as a ventilation strategy to minimize energy usage and noise levels	The main advantages of natural ventilation are- • Low noise impact for occupants and adjacent units • Completely passive therefore no energy required. • Minimal maintenance required. • Reduced environmental impact as minimal equipment disposal over life cycle. • Full fresh air resulting in healthier indoor environment

Mechanical Ventilation Heat Recovery	Centralised mechanical ventilation will be provided to dwellings to ensure that the air quality within the dwellings will be adequate. The inclusion of Heat Recovery Ventilation into the centralised ventilation system will be considered and assessed in order to minimise the energy usage within the dwelling.	Mechanical Heat Recovery Ventilation provides ventilation with low energy usage. The MVHR reduces overall energy and ensures a continuous fresh air supply.
PV Solar Panels	PV solar panels are being considered which converts the electricity produced by the PV system (which is DC) into AC electricity, and in order to meet the renewable energy contribution required by Part L of the Building Regulations. The panels are typically placed on the south facing side of the building for maximum heat gain and in some instances, can also be used to assist the heating system.	PV solar panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment. They also reduce the overall requirement to purchase electricity from the grid.
Air Source Heat Pump	As part of the overall energy strategy for the development, the use of Air Source Heat Pumps will be assessed to determine their technical and commercial feasibility. These systems extract heat energy from the outside air and, using a refrigerant cycle, raise the temperature of the heat energy using a refrigerant vapour compression cycle.	Air source heat pumps use electrical energy from the grid to drive the refrigerant cycle but do so extremely efficiently. Modern heat pumps will typically provide 2.5 to 4 times more heat energy to the dwelling than the electrical energy they consume.
E-CAR charging points	Charging stations shall be provided to designated E-car charging car parking spaces. The management company has the option to install a number of E-car charging points within the surface car parking spaces to cater for E-car demand of the residences..	Providing the option of E-car charging points will allow occupants to avail of the ever-improving efficient electric car technologies.

4.2 Materials

The practical implementation of the Design and Material principles has informed design of the building facades, internal layouts and detailing of the proposed apartment buildings.

4.2.1 Buildings

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
Natural lighting provided where possible at ends of corridors and elevator lobbies/stair cores.	Avoids the requirement for continuous artificial lighting
Natural/Passive ventilation system to and openable windows to areas of regular use and circulation	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
External lighting will comply with the latest standards and achieve: Low level lighting Utilise low voltage LED lamps Minimum upward light spill Be pre-approved by / in accordance with the South Dublin City Council	Lighting will be designed to achieve required standards, provide a safe environment for pedestrians, cyclists, vehicular traffic, provide surveillance and limit the impact on the artificial lighting on surrounding existing flora and fauna
External paved and landscaped areas	All of these require low/minimal maintenance

4.2.2 Material Specification

Implementation of the Design and Material principles to the design of the building envelope, internal layouts, facades and detailing has informed the materiality of the proposed development.

The proposed envelope of the building is a mix of brick and durable render finish, with high-performance double-glazed aluminium windows. Based on comparison with similar schemes developed, the proposed materials are considered durable and would not require regular replacement or maintenance.

Measure Description	Benefit
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 areas of the scheme, and their durability and performance are designed and specified in accordance with Figure 4: Phases of Life Cycle BS 7543:2015. 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.
Use of brickwork	Requires minimal maintenance and does not require regular replacement
Use of factory finished and alu clad/aluminium windows and doors, and powder coated steel balconies	Requires minimal maintenance and does not require regular replacement

4.3 Landscaping

Element	Measure Description	Benefit
Site Layout and Design	High quality landscaping with landscape, cycles and pedestrians prioritised over car. An increase in soft landscaping. Please refer to Landscape Report for further detail.	SUDs drainage system and landscape maintenance preferable Attenuation reduces the burden on vulnerable rainwater goods. Fewer elements would 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. High quality landscaping both hard surface (for the cycle /car parking and pavements) and soft landscaping with planting and trees. The landscaping will be fully compliant with the requirements for Part M / K of the Technical Guidance Documents 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.	Required ongoing maintenance significantly reduced through use of robust materials installed with proven details. Plenty of room for cycles and pedestrians along with car spaces provide a good balance between pedestrians and car users. Wheelchair user-friendly
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.
Balcony & Decking Materials	Use of robust high-quality materials and detailing to be durable for bikes, play, etc.	Ensures the longevity of materials.
Materials	Sustainable, 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.	Robust materials and elements reduce the frequency of required repair and maintenance

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4.4 Waste Management

Measure	Description	Benefit
Operational Waste Management Plan	The application is accompanied by a Operational Waste Management Plan	The report demonstrates how the scheme complies with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at the source Centralized bin storage areas are provided Competitive tender for waste management collection	Helps reduce potential waste charges Easily accessible by all residents and minimises potential littering of the scheme
Composting	Organic waste bins to be provided throughout	Helps reduce potential waste charges

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4.5 Human Health and Wellbeing

Measure	Description	Benefit
Natural / day light	The design, separation distances and layout of the apartment blocks have been designed to optimise 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 Building Regulations, Technical Guidance Documents Parts K and M	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 ▪ Secure bicycle stands ▪ Overlooked communal open spaces	Helps to reduce potential security/ management cost
Natural Amenity	Existing trees and hedgerows.	Facilitates community interaction, socialising and play - resulting in improved wellbeing

4.6 Management

Consideration has been given to ensuring that homeowners have a clear understanding of their property:

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 the property. Typically it includes details of the property such as MPRN and GPRN information in relation to connection with utilities and communication providers. Contact details for all relevant suppliers and user instructions for appliances and devices in the property. 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.

4.7 Transport

Measure	Description	Benefit
Access to Public Transport	The subject site benefits from excellent public transport accessibility levels. The site has close proximity to the Scholarstown bus stops (No 1149 and 4487), 2 minutes' walk away from the application site, offering a good public transport service with direct links to city centre. There are also numerous bus connections a short walk away at Knocklyon.	The availability, proximity and ease of access to public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Permeable Connections	The development facilitates potential future interconnections by pedestrian and cycling routes to adjoining lands / environs.	Ensures the long term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
Bicycle Storage	Secure high quality secure bicycle parking both for short and longer term parking requirements.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
ECAR facilities	Ducting will be provided for all the proposed car parking spaces.	To accommodate the growing demand for e-cars which assist in de-carbonising society and reducing oil dependency.

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Appendix A

Figure 1- TGD Part L 2021, Table 1

Table 1	**Maximum elemental U-value (W/m^2K)[1, 2]**	
Column 1 Fabric Elements	**Column 2 Area-weighted Average Elemental U-value (Um)**	**Column 3 Average Elemental U-value – individual element or section of element**
Roofs Pitched roof - Insulation at ceiling - Insulation on slope Flat roof	 0.16 0.16 0.20	 0.3
Walls	0.18	0.6
Ground floors[3]	0.18	0.6
Other exposed floors	0.18	0.6
External doors, windows and rooflights	1.4[4,5]	3.0

Notes:

1. *The U-value includes the effect of unheated voids or other spaces.*
2. *For alternative method of showing compliance see paragraph 1.3.2.3.*
3. *For insulation of ground floors and exposed floors incorporating underfloor heating, see paragraph 1.3.2.2.*
4. *Windows, doors and rooflights should have a maximum U-value of 1.4 W/m^2K.*
5. *The NSAI Window Energy Performance Scheme (WEPS) provides a rating for windows combining heat loss and solar transmittance. The solar transmittance value g_{perp} measures the solar energy through the window.*

Appendix B

ITEMS INCLUDED IN A TYPICAL BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund.

	BUILDING INVESTMENT FUND (SINKING FUND) CALCULATIONS		
Ref	**Element**	**Life Expectancy**	**Amount**
1.00	**Roofs**		
1.02	Replacement parapet details	20	
1.03	Replacement/ repairs to facias	20	
1.04	Replace roof access hatches	25	
1.05	Specialist Roof Systems - Fall arrest	25	
2.00	Elevations		
2.02	Minor repairs and preparation for decorations of rendered areas	15	
2.03	Replace exit/ entrance doors	25	
2.04	Replace Rainwater goods	25	
2.05	Recoat powder coated Finishes to balconies / Grills to Basement vents	20	
2.07	Replace Balcony floor finishes	25	
	Creche		
3.00	Stair cores & lobbies		
3.01	Decorate Ceilings	7	

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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 nosing's	12	
3.08	Replace ceramic floors tiles Entrance lobbies	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	
4.00	Shared surface Car & Bike Parking		
4.01	Remove/ Replace ceiling insulation	25	
4.02	Repaint parking spaces & Numbering	7	
4.03	Replace store doors, ironmongery & digi-locks to bike parking	15	
4.04	Replace Bike stands to bike parking	25	
4.05	Replace basement access control at entrance & core entrances	12	
5.00	M&E Services		
5.01	General - Internal re-lamping	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/ disabled refuge call points	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	

5.10	External Mains Water connection	20	
5.12	Electrical Mains and Sub Mains distribution	20	
5.13	Emergency Lighting	20	
5.14	Overhaul and/or replace Waste Pipes, Stacks & Vents	20	
6.00	Exterior		
6.01	External boundary treatments - Recoat powder coated Finishes to railings	60	
6.02	Replace external signage	18	
6.03	Replace cobblelock areas	18	
6.04	15-year cutback & thinning of trees. Overhaul landscaping generally	20	
6.05	Replace CCTV provision	12	
6.06	External Handrails and balustrade	18	

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Appendix C

Phases of the Life Cycle of BS7543; 2015

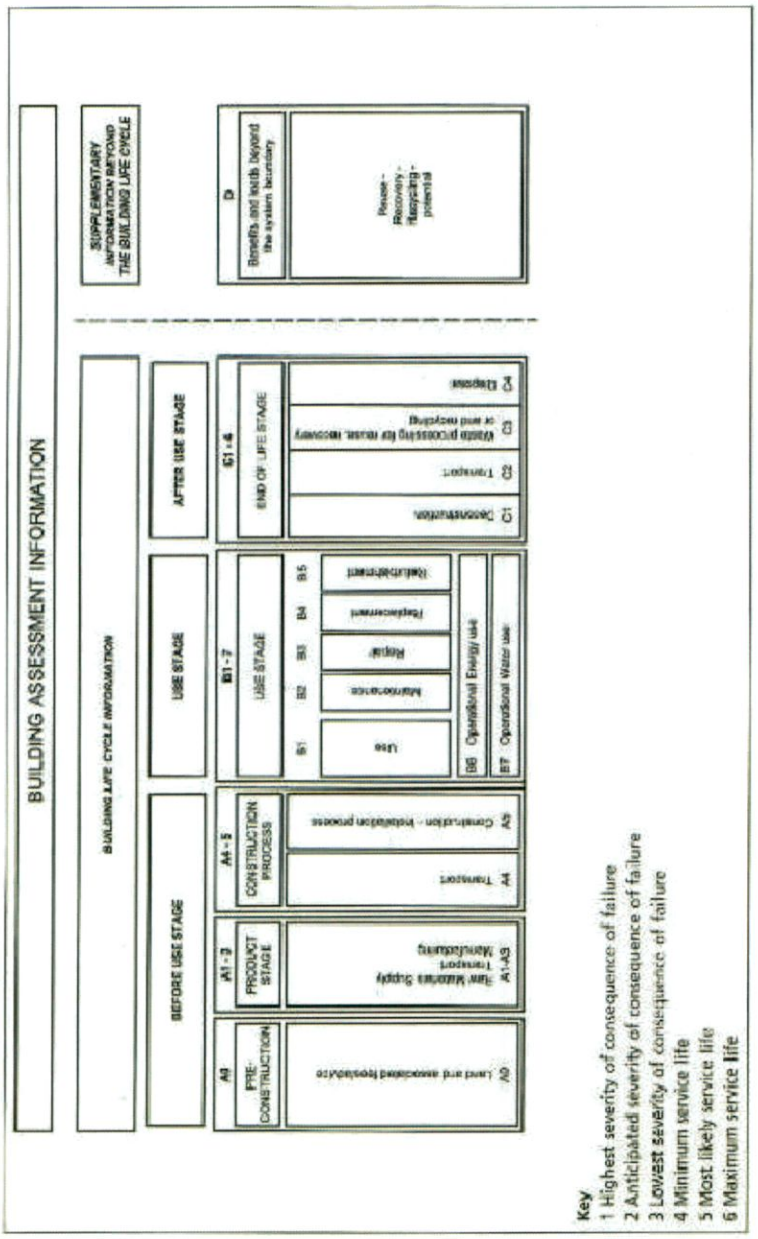

Figure 4 Phases of the life cycle