

LIFE CYCLE REPORT

FOR

**KNOCKNACARRA DISTRICT CENTRE,
RAHOON, GALWAY**



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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 design, construction and operation of new buildings, has a significant role to play in reducing energy demand and increasing energy efficiency into the future. The integration of energy issues into the life cycle of this Development, from the neighborhood, street and individual building scale, can result in significant savings at the local level.

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 04:

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 05:

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

2. PROPOSED DEVELOPMENT

Glenveagh Living Limited, intend to apply to An Bord Pleanála for planning permission for a strategic Housing Development at Gort na Bro, Ragoon, Galway.

The proposed development consists of the construction of 332 residential units up to 7 storeys with 2667 m² of commercial space at ground floor level. A partially under-podium car parking facility will be constructed at ground floor level supplying car parking spaces. A landscaped courtyard podium and a portion of the first floor will be constructed above the car park. The proposals include the provision of a total of 291 surface cycle stand spaces located at ground level, and 386 enclosed bicycle parking stands distributed in individual blocks.

The Knocknacarra District Centre is designed in a way to enhance the neighbourhood and its environs, while ensuring existing and proposed residents have an accessible and permeable sense of place. There are two national primary schools in close proximity to the development, Gealscoil Mhic Amhlaigh which is adjacent to the development, and St. John the Apostle which is within a 5 minute walk. The secondary schools Coláiste Coribe and Solerna are also easily accessible by walking or cycling. Along the southern boundary of the site runs the Western Distributor Road. The Galway Transport Strategy sets out to upgrade the existing public transport link along this road by developing a high quality and high frequency bus corridor. In turn this will increase uptake of public transport and reduce commuting time to National University of Ireland Galway, UC Hospital and the city centre to minutes.

The proposed development allows for improved connectivity with cycle routes, footpaths ensuring permeability within the neighborhood and the local schools. With permeability an important focus, the development will provide links in and around the urban village to public transport links while also retaining the bus stop on the link road to ensure easy access to public transport.

The development will consist of:

1. Construction of 332 no. residential units:
 - 93 no. 1 bed apartments
 - 219 no. 2 bed apartments
 - 20 no. 3 bed apartments
2. Provision of 2,667 sq.m of commercial floorspace
3. Provision of 93 sq.m of community use facilities
4. Provision of 470 sq.m of tenant amenity accommodation including shared workspaces, shared dining and lounge facilities
5. Provision of 174sq.m creche facility including an external secure play area.
6. Provision of 85 no. car parking spaces and provision of realigned road between Gort na mBro and Gateway Retail Park Road.
7. Change of use of underground void to 183 bay underground car park.
8. Provision of shared communal and private open space, car parking, bicycle parking, bin storage, public lighting, site landscaping, services, signage, substation and all associated site development works.

3. EXECUTIVE SUMMARY

The following document reviews the outline specification set out for the Knocknacarra Project Mixed-use development and explores the practical implementation of the Design and Material principles which has informed design of building roofs, facades, 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 and hardscape in the public realm will contribute to lower maintenance costs for future residents and occupiers.

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

4.1 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

4.2 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.

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

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.

Information in this section are based on ‘Mechanical & Electrical Services Basis of Design’ & ‘Energy Statement’ prepared by ETHOS Engineering.

These documents address how the proposed development will comply with NZEB (Part L 2019 Dwellings). The principles underpinning Part L compliance are energy demand reduction through passive measures and increased supply from renewable and efficient sources.

The energy strategy for the development will consider Galway City Council policies and objectives as outlined in the Galway City Council Development Plan 2017-2023. The Galway City Council require applications to meet the highest standards of sustainable design and construction and conform in full with the sustainable energy policies set out in Chapter 9 of the City Development Plan 2017-2023 (Environment and Infrastructure). high standards of energy conservation and improved energy performance in the development will limit greenhouse gas emissions.

5.1. ENERGY AND CARBON EMISSIONS

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	<p>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.</p> <p>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</p> <p>BER is prepared using DEAP (Domestic Energy Assessment Procedure) methodology. This is a national standard and compliance is compulsory for all new dwellings. Three design aspects demonstrate compliance:</p> <ol style="list-style-type: none"> 1. The limitation of primary energy use and CO2 emissions 2. Building fabric 3. The use of renewable energy sources 	Higher BER ratings means smaller energy consumption and running costs.

<p>Fabric Energy Efficiency</p>	<p>The U-values 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”. 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.</p> <table border="1" data-bbox="395 472 962 772"> <thead> <tr> <th rowspan="2">Element</th> <th colspan="2">U value (W/m².K)</th> </tr> <tr> <th>Draft Part L 2018 (NZEB)</th> <th>Targeted</th> </tr> </thead> <tbody> <tr> <td>Pitched Roof</td> <td>0.16</td> <td>0.16</td> </tr> <tr> <td>Flat Roof</td> <td>0.20</td> <td>0.15</td> </tr> <tr> <td>Walls</td> <td>0.18</td> <td>0.18</td> </tr> <tr> <td>Ground Floors</td> <td>0.18</td> <td>0.15</td> </tr> <tr> <td>Exposed floors</td> <td>0.18</td> <td>0.15</td> </tr> <tr> <td>External doors, windows and roof lights</td> <td>1.40</td> <td>1.30</td> </tr> <tr> <td>Glazing gv (EN410)</td> <td></td> <td>0.4-0.6*</td> </tr> </tbody> </table>	Element	U value (W/m ² .K)		Draft Part L 2018 (NZEB)	Targeted	Pitched Roof	0.16	0.16	Flat Roof	0.20	0.15	Walls	0.18	0.18	Ground Floors	0.18	0.15	Exposed floors	0.18	0.15	External doors, windows and roof lights	1.40	1.30	Glazing gv (EN410)		0.4-0.6*	<p>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.</p>
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<p>Energy Labelled White Goods</p>	<p>Appliances account for a large percentage of the residential energy use & carbon emissions. 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</p>	<p>The provision of high rated appliances in turn reduces the amount of electricity required for occupants.</p>																										
<p>External Lighting</p>	<p>The proposed lighting scheme within the development consists of range of fittings (32W to 105W) LED luminaires mounted on columns as indicated on the drawing (GW3-ETH-ZZ-00-DR-E-SS100_P3). The luminaire selected to light the roads is the METRO. 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 GCC 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.</p>	<p>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. This is provided in the most efficient manner based on lighting simulation.</p>																										

5.2 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
Tank Room	The new mains water supply will serve tanks in each of the separate plant rooms; one for cold water supply tank, one for the mains water supply tank, one for the sprinkler water tank and lastly one for the housekeeping water tank. Connection will be provided with a pulsed output water meter. Sub-metered branches will be provided to each apartment with pulsed signal provided for cold water consumption monitoring via the BMS.	Separate tanks will offer to record consumption
Pumps	All pumps serving the plant to be A rated energy efficiency.	High efficiency band for appliances ensures reduction in required primary energy
PV Panels	Using generated power on site results in much lower emissions associated with the dwelling. Allowance per apartment shall be 360Wp 72 cell monocrystalline panels & number to be based on DEAP calculation. The generated electricity will be consumed by the occupiers & therefore reducing the demand on the grid.	On-site produced renewable electricity to be used for the heating and hot water needs
BMS	Advanced Building Energy Management system will control the building systems to ensure its operation to maximum efficiency.	Optimised plant operation will use less primary energy
Heating	The space heating to the apartments shall be via electric radiators. Heating shall be a combination of a high heat retention storage heater & a direct electric panel heater which provides convected heat.	No storage losses compared to LPHW system. Renewable electricity from PV panels can be utilised.
Hot Water	Hot water within each apartment to be provided by hot water heat pump. The heat pump consists of an integrated stainless-steel tank and 1.65kW heat pump. It is an air source heat pump that extracts energy from the outside air and will have two separate ducts for supply and extract to the outside only.	The hot water heat pump will be capable of taking a low voltage signal from a PV system to optimise the use of generated PV energy.
Hot Water	DEAP 4 which is the updated version for assessing the building energy rating will give credit for water efficient showers, taps, wash hand basins and baths. The installation of flow restrictors shall be implemented. Good practice would include: Shower – 6L/min Bath Volumes – Can vary but 175-130 L would be usual. 150L would be a recommended design target.	The system would help with reduction in hot water usage and improve the energy performance of the dwelling.
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 by eliminating cold air infiltration while maintaining good indoor air quality.
LED lighting design	A full lighting design analysis using appropriate software will provide an appropriate LED lighting design in relation to the dwelling	Optimal lighting design will reduce energy used for artificial lighting.
ECAR Charging Points	Within the parking areas, 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 basement 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

5.3. BUILDING MATERIALS, FINISHES & TREATMENTS

We have reviewed 'Knocknacarra Urban Design Report' prepared by REDDY's Architecture to compile assessment in this section. 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:

5.3.1. 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.
Landscaping	External paved, semi permeable and landscaped areas	All of these require low/minimal maintenance & support the wider SUDS strategy for the development, protects the roof membrane and will thus minimize ongoing maintenance in the future.
Roofs	Roof areas of the building will be utilised for PV panels	the roof membrane and will thus minimize ongoing maintenance in the future.

5.3.2 MATERIAL SPECIFICATION

Measure	Description	Benefit
Durability	<p>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:</p> <ul style="list-style-type: none"> •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 design will indicate what services will penetrate through the roof level. Fall arrest will be provided on the 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	Pre-cast concrete roof slabs with concrete topping screed laid to falls to central gullies. Waterproofing provided by a waterproof layer.	Well designed detailing of 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/m ² K. 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 kitchens 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

5.4 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
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.

5.5 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 to serve the apartment buildings. 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.

5.6 HEALTH & WELLBEING

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	Lanscaped public square, Adjacent Green areas/ sportsgrounds and lanscaped courtyard garden for the residents.	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

5.7 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 guides 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.

5.8 TRANSPORT

The assessment provided is based on ‘Gateway Urban Village Knocknacarra Traffic and Transport Assessment Combined’ & ‘Mobility Management Plan’ documents prepared by ATKINS.

Traffic and Transportation (TTA) Methodology was prepared based on The Galway Transport Strategy report. This document encompasses all modes of transport within the environs of Galway City.

Measure	Description	Benefit
Access to Public Transport (Bus Services)	A number of bus routes in the area would service the proposed development. These services include: 405 Between Eyre Square and the Gateway Retail Park Gateway Link Road stop – 1 min walk 412 From The Cathedral to Knocknacarra Western Distributor Road stop – 5 minutes walk 414 Between Cathedral, Knocknacarra and Barna Bothar Stiofain stop – 5 minutes walk 411 From Henry St to Knocknacarra Rahoon Road – 8 minutes walk	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 There are footpaths and on-road cycle lanes both sides of the Western Distributor Road.	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	Car Club spaces will be provided for the development, in general one car club space can replace 10 – 15 residential parking spaces. Car club spaces will be provided within the development, exact number to be agreed. All residents in the development will have access to this car club and the car club will also be open to other users and locals within the area.	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 of roof covering incl. insulation to main roofs	18
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 nosing	12
3.08	Replace ceramic floors tiles	20
5	M&E SERVICES	
5.01	General - Internal relamping	7
5.02	Replace Internal light fittings & PIR sensors	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
5.10	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

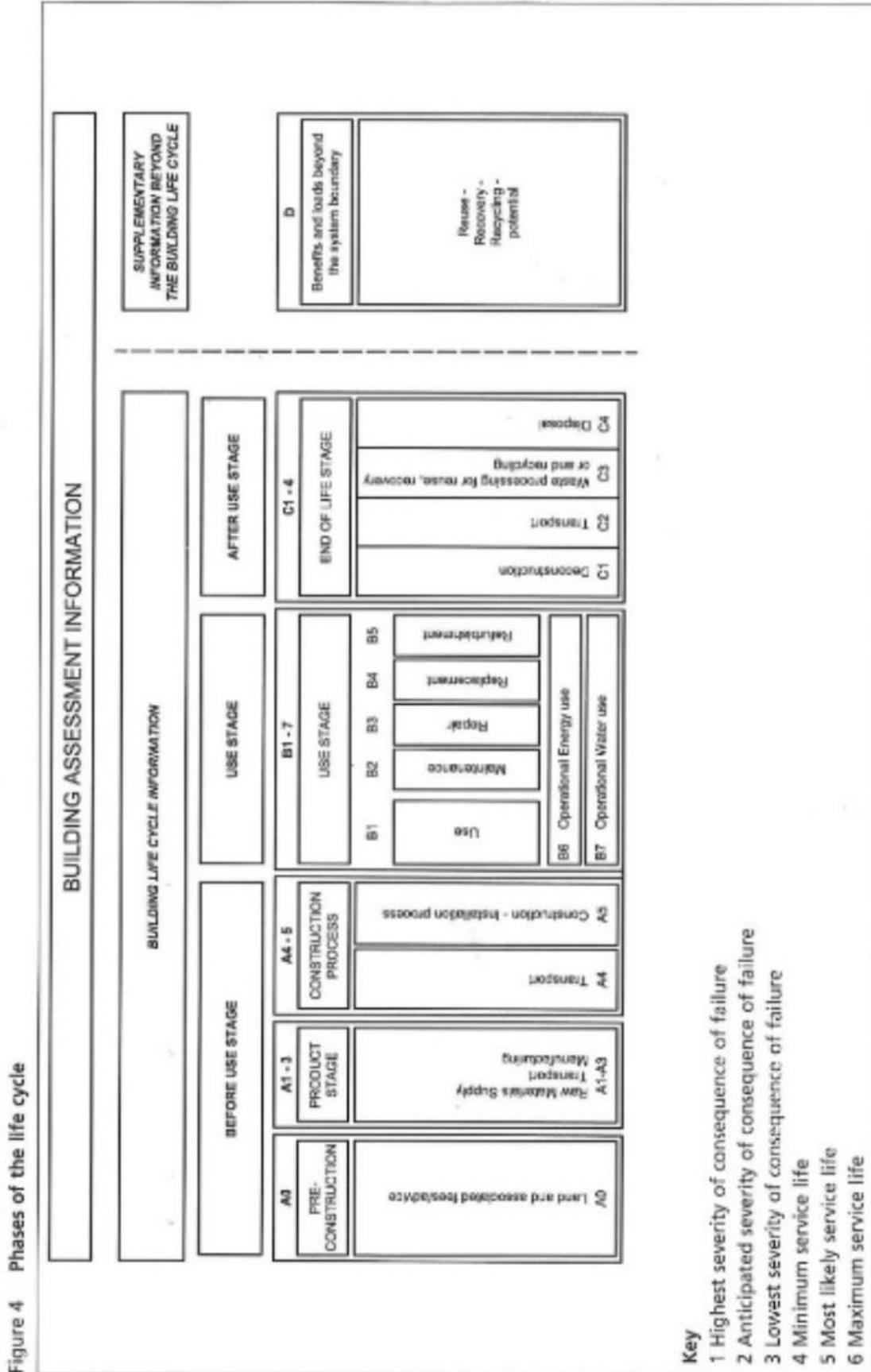


Figure 4 Phases of the life cycle