

Red Cow Design & Planning Limited Trading As  
**CUNNINGHAM DESIGN & PLANNING**  
Consulting Engineers

Block C  
N4 Axis Centre  
Longford  
Co. Longford

Tel: 043 33 40450  
Mob: 087 850 9554  
Email: [mark@cunninghamdp.ie](mailto:mark@cunninghamdp.ie)  
Website: [www.cunninghamdp.ie](http://www.cunninghamdp.ie)

---

## BUILDING LIFE CYCLE REPORT

for

**Proposed Residential Development at Bloomfield Park, Bracklin Road,  
Edgeworthstown, Co. Longford**



**March 2022**

**Mark Cunningham BEng, MSc, CEng, MIEI.**

# Table of Contents

INTRODUCTION.....	3
PROPOSED DEVELOPMENT.....	4
<b>PART 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 .....</b>	<b>5</b>
1.1. Property Management of the Common Areas of the development.....	5
1.2. Service Charge Budget .....	5
<b>PART B - MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS.....</b>	<b>7</b>
2.1. Energy and Carbon Emissions .....	7
2.2. Materials .....	9
2.2.1. Buildings .....	9
2.2.2. Material Specification .....	10
2.3. Landscape .....	12
2.4. Waste Management.....	12
2.5. Health & Well Being .....	13
2.6. Management.....	13
2.7. Transport.....	14
APPENDIX A.....	15
APPENDIX B:.....	18

## INTRODUCTION

The development at Bloomfield Park, Bracklin Road, Edgeworthstown, Co. Longford includes 25 Duplex units containing a 2 bedroom unit at Ground Floor and a 3 bedroom unit on the upper 2 floors. These units are deemed apartments and the applicable guidelines are the Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities were published in December 2020. The Apartment 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 which states;

***“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.***

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:

**Part 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**

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

## PROPOSED DEVELOPMENT

The development will consist of the construction of 100 no. dwellings and associated ancillary infrastructure as follows:

- 46 no. 2 storey houses
  - 24 no. 3 bedroom houses [House Types 3A & 3B],
  - 20 no. 4 bedroom houses [House Types 4A, 4B and 4D],
  - 2 no. 5 bedroom houses [House Type 5];
- 4 no. 3 storey houses [House Type 4C],
- 50 no. apartments/duplex apartments in 5 no. 3 storey buildings – (25 no. 2 bedroom apartments and 25 no. 3 bedroom duplex apartments) all with terrace;
- Open space of c. 0.5 hectares, hard and soft landscaping (including public lighting) and open space (including boundary treatment), communal open space for duplex apartments; regrading/re-profiling of site where required [including import/export of soil as required] along with single storey bicycle/bin stores, estate management store and ESB substation;
- Vehicular and pedestrian access (including construction access) from the Bracklin Road and from a new junction off the Bracklin Park Link Road as well as 162 no. car parking spaces and 150 no. cycle spaces for the duplex apartments;
- Surface water attenuation measures and underground attenuation systems as well as connection to water supply, and provision of foul drainage infrastructure;
- All ancillary site development/construction/landscaping works, along with provision of footpath/public lighting/roadworks/landscaping on the Bracklin Park Link Road.

## Part 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

### 1.1. 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, including communal areas of open space, residential amenity facilities and any public areas not taken in charge by the local authority, are kept within the agreed Annual operational budget.

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.

A Property Management Company would also have 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 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 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.

### 1.2. 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 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 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.

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.*

**PART B - MEASURES SPECIFICALLY CONSIDERED BY THE PROPOSER TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS.**

2.1. 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.

**BER Certificates**

A Building Energy Rating (BER) certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation, and lighting and occupancy. It is proposed to target an A2 rating for the houses and apartments - this will equate to emissions of 25-50 kwh/m<sup>2</sup>/yr with CO<sub>2</sub> emissions circa 10kgCO<sub>2</sub>/m<sup>2</sup> year

**Expected benefit of the above;**

Higher BER ratings reduce energy consumption and running costs.

**Fabric Energy Efficiency**

Building Fabric Performance

The U-values being proposed will be in line with the requirements set out by the current regulatory requirements of the Technical Guidance Documents Part L 2019 “Conservation of Fuel and Energy Buildings other than Dwellings”.

U-values

The U-Values that will be targeted for the dwellings in this development will exceed the minimum targets set out in Part L 2011 or Part L 2019 as may be appropriate. The table below sets out the minimum requirements of each of these standards and the targets range that will be adopted for the site.

U-Values	Target Values Proposed (Range)	Part L 2019 Compliant Values
Floor	0.10 to 0.18 W/m <sup>2</sup>	0.18 W/m <sup>2</sup>
Roof (Pitched)	0.11 to 0.16 W/m <sup>2</sup>	0.16 W/m <sup>2</sup>
Walls	0.12 to 0.18 W/m <sup>2</sup>	0.18 W/m <sup>2</sup>
Windows	1.2 to 1.4 W/m <sup>2</sup>	1.4 W/m <sup>2</sup>

Thermal Bridging

Thermal bridges occur at junctions between planar elements of the building fabric and are typically defined as areas where heat can escape the building fabric due to a lack of continuity of the insulation in the adjoining elements. Careful design and detailing of the manner in which insulation is installed at these junctions can reduce the rate at which the heat escapes. Standard good practice details are available and are known as Acceptable Construction Details (ACDs). Adherence to these details is known to reduce the rate at which heat is lost. The rate at which heat is lost is quantified by the Thermal Bridging Factor of the dwelling which is entered into the overall dwelling Part L calculation. It is intended that all building junctions will either be designed in accordance with the Acceptable Construction Details (issued by The Department of the Environment) or that thermal modelling will be carried out for all thermal bridges on the dwellings within proposed development. The resultant Thermal Bridging Factor will be in the range of 0.04W/m<sup>2</sup>K to 0.08W/m<sup>2</sup>K.

### Air Tightness

A major consideration in reducing the heat losses in a building is the air infiltration. This essentially relates to the ingress of cold outdoor air into the building and the corresponding displacement of the heated internal air. This incoming cold air must be heated if comfort conditions are to be maintained. In a traditionally constructed building, infiltration can account for 30 to 40 percent of the total heat loss, however construction standards continue to improve in this area.

In order to ensure that a sufficient level of air tightness is achieved, air permeability testing will be specified carried out on all dwellings. A design air permeability target of 3 m<sup>3</sup>/m<sup>2</sup>/hr has been identified for the duplex apartments and houses on the site.

#### **Expected benefit of the above;**

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 good package planned for provision in the apartments will be of a very high standard and have a high energy efficiency rating. It is expected that the below appliance ratings will be provided:

- Oven - A plus
- Fridge Freezer - A plus
- Dishwasher - AAA
- Washer/Dryer - B

#### **Expected benefit of the above;**

The provision of high rated appliances in turn reduces the amount of electricity required for occupants.

### **External Lighting**

The proposed lighting scheme within the development consists of range of luminaires, each selected to suit the specific location on the site. All fittings selected will be LED and will be mounted on columns ranging in height up to but not exceeding 6m.

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.

#### **Expected benefit of the above;**

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.

The following are **Low energy technologies** that 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 the A2 BER Rating.



Measure	Description	Benefit
<b>Demand Controlled Mechanical Ventilation</b>	Centralised mechanical ventilation will be provided to all dwellings to ensure that the air quality within the dwellings will be adequate. The system will be designed to respond to occupancy usage patterns and to humidity levels within the dwelling.	Mechanical ventilation provides enhanced air quality in modern air tight dwellings which are otherwise designed to minimise unwanted air infiltration
<b>PV Solar Panels</b>	<p>PV Solar Panels will be considered as an option for both houses and apartments in order to meet the renewable energy contribution required by Part L of the Building Regulations. These panels convert sunlight into electricity which can be used within the dwelling.</p> <p>The panels are typically placed on the South facing side of the building to maximise the solar exposure.</p>	<p>PV Solar Panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment.</p> <p>They also reduce the overall requirement to purchase electricity from the grid.</p>
<b>Air Source Heat Pump</b>	<p>As part of the overall energy strategy for houses, the use of Air Source Heat Pumps will be assessed to determine their technical and commercial feasibility.</p> <p>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.</p> <p>For apartments, there are products which incorporate air source heat pump technology but which do not require the traditional “outdoor unit” making them suitable for apartments. These are generally referred to as “Exhaust Air Heat Pumps” and are capable of extracting energy from the air within the apartment through a ducting system.</p>	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 4 to 5 times more heat energy to the dwelling than the electrical energy they consume.
<b>ECAR Charging Points</b>	Ducting and on street infrastructure will be considered for the housing 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. Furthermore, all houses with on-curtilage parking will be wired to allow future installation of EV charging points by house purchasers.	Providing the option of E-car charging points will futureproof the development

## 2.2. Materials

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


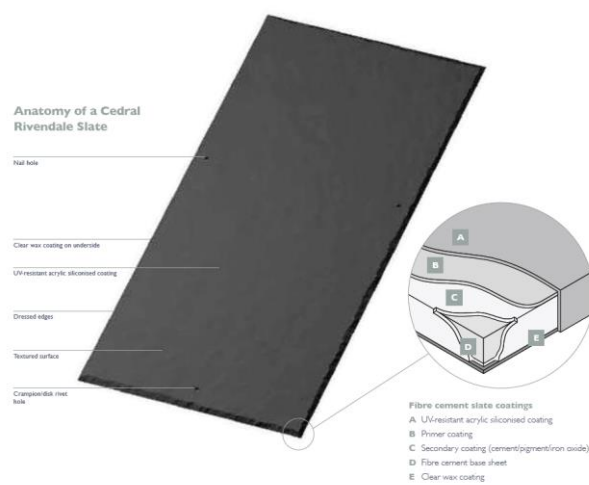
### 2.2.1. Buildings

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
Openable window sections are provided to all stair cores within the development providing natural daylight to circulation areas.	Avoids the requirement for continuous artificial lighting
Openable window sections are provided to all stair cores within the development 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.
Natural ventilation through grills, louvres and treepits are proposed to provide fresh air to basement and sub-basement areas.	Avoids costly mechanical ventilation systems and associated maintenance and future replacement
External paved and landscaped areas	All of these require low/minimal maintenance

### 2.2.2. Material Specification

Measure Description	Benefit
<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.</p> <p>All common parts of the proposed houses and apartments 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"> <li>• Annex A Climatic Agents affecting Durability</li> <li>• Annex B Guidance on materials and durability</li> <li>• Annex C Examples of UK material or component failures</li> <li>• Annex D Design Life Datasheets</li> </ul>	<p>Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.</p>

<p>The architectural approach to the scheme proposed the extensive use of robust materials of brickwork and textured render to the building envelope.</p>		<p>These traditional materials will require minimal on-going maintenance and have a longer life-cycle expectancy.</p>
<p>Use of factory finished and alu clad or uPVC windows and doors.</p>		<p>Requires no on-going maintenance.</p>
<p>Roof tiles proposed to the main roof.</p>	 <p><b>Anatomy of a Cedral Rivendale Slate</b></p> <ul style="list-style-type: none"> <li>Nail hole</li> <li>Clear wax coating on underside</li> <li>UV resistant acrylic siloxane coating</li> <li>Dressed edges</li> <li>Textured surface</li> <li>Compendious metal hole</li> </ul> <p><b>Fibre cement slate coatings</b></p> <ul style="list-style-type: none"> <li>A UV resistant acrylic siloxane coating</li> <li>B Primer coating</li> <li>C Secondary coating (cement/pigment/iron oxide)</li> <li>D Fibre cement base sheet</li> <li>E Clear wax coating</li> </ul>	<p>Requires no on-going maintenance.</p>
<p>Reconstituted stone sills, window surrounds and copings are proposed.</p>		<p>Requires no on-going maintenance.</p>

### 2.3. Landscape

Measure	Description	Benefit
<b>Site Planning</b>	Generous and high-quality landscape with planting providing screening and ecological corridors within the proposed development. Significant tree planting and soft landscaping within streetscape and public spaces.	Natural attenuation and landscape maintenance
<b>Paving Materials</b>	Use of robust materials with high slip resistance to be used for paving. Products to have highly pigmented top layer to reduce fading over time. 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 with proven details.
<b>Planting details</b>	Shrub, hedging, herbaceous, and meadow installation planting details provided.	Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.

### 2.4. Waste Management

The following measures illustrate the intentions for the management of Waste.

Measure	Description	Benefit
<b>Construction and Demolition Waste Management Plan</b>	Details regarding Construction and Demolition Waste are set out in the Construction & Demolition Waste and By-Product Management Plan.	Construction and Demolition Waste Management Plan demonstrates how the scheme has been designed to comply with best practice.
<b>Storage of Non-Recyclable Waste and Recyclable Household Waste</b>	Inclusion of a centralised secure bin storage system in close proximity to duplex blocks. Houses will include storage of bins within their curtilage.  Details of operational waste are set out in the Operational Waste Management Plan.	Easily accessible by all residents and minimises potential littering of the scheme
	Domestic waste management strategy: Grey, Brown and Green bin distinction. Competitive tender for waste management collection.	Helps reduce potential waste charges.
<b>Composting</b>	Organic waste bins to be provided throughout.	Helps reduce potential waste charges.

## 2.5. Health & Well Being

The following are illustrations of how the health and well-being of future residents are considered.

Measure	Description	Benefit
<b>Natural / DayLight</b>	The design, separation distances duplex units 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.
<b>Accessibility</b>	All units will comply with the requirements of Part M/K.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
<b>Security</b>	The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: <ul style="list-style-type: none"> <li>• CCTV monitoring details</li> <li>• Secure bicycle stands – covered by CCTV</li> </ul>	Help to reduce potential security/management costs.
<b>Natural Amenity</b>	Appropriate areas of public open space are incorporated within the scheme. The main area of public open space will integrate with the public open space on the adjoining development site.	Proximity and use of parks promotes a healthy lifestyle

## 2.6. Management

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

Measure	Description	Benefit
<b>Home User Guide</b>	Once a purchaser completes their sale, a homeowner box will be provided which will include: <ul style="list-style-type: none"> <li>• <b>Homeowner manual</b> – 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.</li> <li>• <b>A Residents Pack</b> 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.</li> </ul>	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

## 2.7. Transport

Measure	Measure Description	Benefit
<b>Access to Public Transport (Bus Services)</b>	3 No. bus routes provided by Bus Eireann departing from Pound St. Edgeworthstown to Sligo/ Longford/ Mullingar/ Dublin which is approximately a 14-minute walk or 4-minute cycle from the proposed development.	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.
<b>Permeable Connections</b>	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure on-site, and their connectivity with the public road network providing convenient access to local services including shops, schools, restaurants and doctor's surgeries.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
<b>Bicycle Storage</b>	The provision of high quality secure and sheltered bicycle parking facilities, for both short term and long-term parking requirements.	Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle.
<b>E-car Facilities</b>	Ducting will be provided from a local landlord distribution board to designated E-car charging car park spaces. Ducting and on street infrastructure will also be considered for the housing development to provide EV charging facilities in on- street parking spaces. Furthermore, all houses with on- curtilage parking will be wired to allow future installation of EV charging points by house purchasers.	To accommodate the growing demand for E- car which assist in decarbonising society and reducing oil dependency.

## APPENDIX A:

### ITEMS INCLUDED IN A TYPICAL BIF

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

<b>BUILDING INVESTMENT FUND (SINKING FUND) CALCULATIONS</b>			
<b>Ref</b>	<b>Element</b>	<b>Life Expectancy</b>	<b>Amount</b>
<b>1.00</b>	<b>Roofs</b>		
1.01	Replacement felt roof covering incl. insulation to mainroofs.	18	
1.02	Replacement parapet details	18	
1.03	Replacement/ repairs to facias	18	
1.04	Replace roof access hatches	25	
1.05	Specialist Roof Systems - Fall arrest	25	
<b>2.00</b>	<b>Elevations</b>		
2.01	Minor repairs and preparation for decorations of rendered areas	18	
2.02	Replace exit/ entrance doors	25	
2.03	Replace Rainwater goods	25	
2.04	Periodic replacement and overhauling of external fixings	5	
<b>3.00</b>	<b>Stair cores &amp; lobbies</b>		
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's	12	
3.08	Replace ceramic floors tiles Entrance lobbies	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	
<b>4.00</b>	<b>Car Parking</b>		
4.01	Repaint parking spaces & Numbering	7	
4.02	Replace Bike stands	25	
<b>5.00</b>	<b>M&amp;E Services</b>		
5.01	General - Internal re-lamping	7	
5.02	Replace Internal light fittings	18	
5.03	Replace External light fittings	18	
5.04	Replace smoke detector heads	18	
5.05	Replace Fire alarm panel	18	
5.06	Replace security access control installation Bin Storage	15	
5.07	Sump pumps replacement	15	
5.08	External Mains Water connection	20	
5.09	Electrical Mains and Sub Mains distribution	20	



5.10	Emergency Lighting	20	
5.11	Overhaul and/or replace Waste Pipes, Stacks & Vents	20	
<b>6.00</b>	<b>Exterior</b>		
6.01	External boundary treatments - Recoat powder coated Finishes to railings	60	
6.02	Replace external signage	18	
6.03	15-year cutback & thinning of trees. Overhaul landscaping generally	20	
6.04	Replace CCTV provision	12	
6.05	External Handrails and balustrade	18	

# APPENDIX B: Phases of the Life Cycle of BS7543; 2015

Figure 4 Phases of the life cycle

