CAIRN

Building Life Cycle Report

Clonburris T3

June 2024

Built For Good

Table of Contents

Prepared By:

McCrossan O Rourke Manning Architects

DBFL Consulting Engineers

Waterman Moylan Engineers

CSR Landscape Architects

John Spain & Associates

On behalf of:

Cairn Homes Properties Ltd

Document Control Sheet:

Rev	Status	Author	Checked	Issue Date
A	Draft	NC		13/06/2024

INTRODUCTION

This **Building Lifecycle Report** has been prepared in tandem with Compliance Submission 8(A)ii which granted permission for 157 no. units under Planning Reference SDZ22A/0017.

The Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities were updated in July 2023 (hereafter referred to as the Apartment Guidelines). 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 6.12.

Section 6.12 of the Apartment Guidelines 2023 requires that apartment applications shall:

"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 6.12** of the Apartment Guidelines. The report is broken into two sections as follows:

Section 01:

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 02:

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

PROPOSED DEVELOPMENT

Construction of Construction of 157 dwellings consisting of:

a) 81 houses and 76 apartment units;

b) Vehicular access will be provided from the permitted street under SDZ21A/0022 and the permitted Clonburris Southern Link Street (SDZ20A/0021) and R113 (Fonthill Road) to the east; and

c) All ancillary site development works including footpaths, landscaping boundary treatments, public and private open space areas, car parking (170 spaces) and bicycle parking (170 spaces), single storey ESB substations, bin and bicycle stores and all ancillary site development/construction works.

SECTION 01

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 Property Services Regulatory Authority (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 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 MUD Act 2011.

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 draft service charge for the first year is set out in **Appendix A**.

SECTION 02

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.

<table>
<tr><th>Measure</th><th>Description</th><th>Benefit</th></tr>
<tr><td>BER Certificates</td><td>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 a mix of A2/A3 rating for the apartments this will equate to the following emissions.

A2 – 25-50 kwh/m^2/yr with CO2 emissions circa 10kgCO2/m^2 year

A3 – 51-75 kwh/m^2/yr with CO2 emissions circa 12kgCO2/m^2 year</td><td>Higher BER ratings reduce energy consumption and running costs.</td></tr>
<tr><td>Fabric Energy Efficiency</td><td>Building Fabric Performance:

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 - Dwellings” & Part L “Conservation of Fuel and Energy - Buildings other than Dwellings”. The current regulation is Part L 2022 for both residential and non-residential developments. The dwellings built under this planning permission will be designed and constructed to meet the relevant regulation, as appropriate.

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 2022. Table 1 sets out the minimum requirements of each of these standards and the targets range that will be adopted for the site.

<table>
<tr><td>U-Values</td><td>Range of Target Values Proposed</td><td>Part L 2022 Compliant Values</td></tr>
<tr><td>Floor</td><td>0.10 to 0.18 W/m^2 K</td><td>0.18 W/m^2 K</td></tr>
<tr><td>Roof (Flat)</td><td>0.15 to 0.18 W/m^2 K</td><td>0.20 W/m^2 K</td></tr>
<tr><td>Walls</td><td>0.12 to 0.18 W/m^2 K</td><td>0.18 W/m^2 K</td></tr>
<tr><td>Windows</td><td>1.2 to 1.4 W/m^2 K</td><td>1.6 W/m^2 K</td></tr>
</table>
Table 1: Minimum requirements for each U-Value Standard.

Thermal Bridging:</td><td>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.</td></tr>
</table>

Measure	Description	Benefit
	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 adjoin 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 target the range of 0.04 W/m^2 K to 0.08 W/m^2. **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 $m^3/m^2/hr$ has been identified for the apartments and houses on the site.	
Energy Labelled White Goods	The white good package planned for provision in the dwellings will be of a very high standard and have a high energy efficiency rating. It is expected that the below appliance ratings will be provided: • Oven - A plus • Fridge Freezer - A plus • Dishwasher - AAA • Washer/Dryer - B	The provision of high rated appliances in turn reduces the amount of electricity required for occupants.
External Lighting	The proposed lighting scheme within the development consists of 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 from 4m to 6m. • Low level lighting • Minimal upward light spill • Low voltage LED lamps • Pre-approved by South Dublin County Council Each light fitting shall be controlled via an individual Photoelectric Control Unit (PECU). The operation of the lighting shall be on a dusk-dawn profile.	The site lighting will be designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.

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/A3 BER Rating.

Measure	Description	Benefit
Condensing Boilers	If gas fired heating is adopted, condensing boilers will be provided 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.	• 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%.
Demand Controlled Mechanical Ventilation	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.
PV Solar Panels	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. The panels are typically placed on the most suitable orientation available of the building to maximise the solar exposure.	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 houses, 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. 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.	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.
ECAR Charging Points	Ducting and on street infrastructure will also 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 allow occupants to avail of the ever-improviing efficient electric car technologies.
Natural	Natural ventilation is being evaluated as ventilation	The main advantages of natural ventilation are:

Measure	Description	Benefit
Ventilation	strategy to minimize energy usasge and noise levels.	• Completely passive therefore no energy is required. • Reduced environmental impact as minimal equipment disposal over building life cycle.

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.

Buildings:

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

Measure Description	Benefit
Daylighting 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.
External paved and landscaped areas.	All of these require low/minimal maintenance

Material Specification:

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 parts of the proposed apartment building and, the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015. (Please see Appendix B for this figure). The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543: 2015 including: • Annex A Climatic Agents affecting Durability • Annex B Guidance on materials and durability • Annex C Examples of UK material or component failures • Annex D Design Life Data sheets	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.
The architectural approach to the scheme proposes the extensive use of robust materials of brickwork and render to	These traditional materials will require minimal on-going

the building envelope. The selection of these durable and easily maintained materials will promote a quality appearance over the lifetime of the development. 	maintenance and have a longer life-cycle expectancy.
Use of factory finished and alu clad or uPVC windows and doors, and powder coated steel balconies.	Requires no on-going maintenance.

2.3. Landscape

Measure	Description	Benefit
Site Planning	Generous and high-quality landscape with ecological corridors designed within the proposed development. Pedestrians prioritized over cars. Significant tree planting and soft landscaping within courtyards and public spaces. Extensive use of SuDS measures.	Natural attenuation, filtration and infiltration of surface water, and landscape maintenance preferable.
Green Roofs	Use of green roofs and traditional roof coverings with robust and proven detailing to roof elements. 	Attenuation reduces the burden on vulnerable rainwater goods, resulting in fewer elements that could require replacement or repair.
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 with 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.

2.4. Waste Management

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

Measure	Description	Benefit
Construction and Demolition Waste Management Plan	Details regarding Construction and Demolition Waste Management Plan prepared by Byrne Environmental Ltd.	The Construction and Demolition Waste Management Plan demonstrates how the scheme has been designed to comply with best practice.
Operational Waste Management Plan	Details regarding Operational Waste Management Plan prepared by Byrne Environmental Ltd.	The Operational Waste Management Plan demonstrates how the scheme has been designed to comply with best practice.
Storage of Non-Recyclable Waste and Recyclable Household Waste	Residential waste storage allows for a weekly (seven day) storage capacity for MDR, food, glass and residual (i.e. nonrecyclable). Residential bins will be provided within dedicated bin storage to the east of the apartment block.	Easily accessible by all residents and minimises potential littering of the scheme.
	Domestic waste management strategy: **i.** Grey, Brown and Green bin distinction. **ii.** Competitive tender for waste management collection.	Helps reduce potential waste charges.
Composting	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
Natural/ Day Light	The design, separation distances and layout of the apartment block has 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 was provided within the design statement of the original planning 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 of undercroft parking area. • Secure bicycle stands – covered by CCTV • Routine access fob audits.	Help to reduce potential security/ management costs.
Natural Amenity	Large public areas of open space are evenly distributed throughout the site where they can be overlooked by surrounding residential units.	Proximity and use of parks promotes healthy lifestyles, community interaction, socializing, and play resulting in overall improved wellbeing.

2.6. Management

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

Measure	Description	Benefit
Home User Guide	Once a 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.

2.7. Transport

Measure	Measure Description	Benefit
Access to Public Transport (Rail)	Clondalkin Fonthill Rail Station is located approximately 200m east of the subject site on the R113 Fonthill Road North. Train services to Heuston Station call at Clondalkin Fonthill Station with regular services throughout the day serving the destinations of Drumcondra, Connolly, Tara Street, Pearse and Grand Canal Dock.	The train provides an alternative high frequency public transport option to the bus for commuting to the city centre. The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.
Access to Public Transport (Bus Services)	Route number L54 travel along R113 Fonthill Road North approximately 200m to the east of the subject site. Route numbers 13, 51D, 68, and 151 travel along New Nangor Road approximately 900m to the south of the subject site. In addition, route numbers G2 and W2 travel along Ninth Lock Road approximately 1.3km to the northeast of the subject site. These Dublin Bus services operate daily and offer relatively frequent services (i.e. every 10 minutes at peak times).	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	Pedestrians and cyclists will also be able to access the subject site via the Clonburris Southern Link Street. Additional access will be offered via a proposed pedestrian and cycle route along the northern border of the subject site.	Ensure the long-term attractiveness of walking and cycling to a range of local education, retail and community facilities and services.
Bicycle Storage	The provision of high quality secure 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.
E-car Facilities	Ducting will be provided from a local landlord distribution board to designated E-car charging car park spaces.	To accommodate the growing demand for E-car which assist in de-carbonising society and reducing oil dependency.

Appendix A:

DRAFT SERVICE CHARGE FOR FIRST YEAR

Parkleigh
SEVEN MILLS – DUBLIN 22

CUSHMAN & WAKEFIELD

Draft Service Charge for First Year

		Estate	Duplex	Total
Management & Administration		€	€	€
Management Fees	Fees to administer services of management company	55891	0	55891
Audit & Accountancy	Accountants fees for preparation of statutory financial reports	1950	0	1950
Company Secretarial	Fees associated with maintaining company register with companies offices	750	0	750
Legal & Professional Fees		1500	0	1500
Bank Charges	Bank charges for operation of managent company bank account	750	0	750
Insurance				
Public Liability & Building Insurance	Insurance in respect of All Risks property insurance and public liability insurance	2500	41440	43940
Directors & Officers Liability Insurance	Insurance for officers of company	750	0	750
Health & Safety Risk Management				
Health & Safety Risk Assessment	Annual 3rd party risk inspection of common areas	1500	0	1500
Utilities				
Common Area Electricity	Power supply to street lighting, mechanical equipment	4500	4500	9000
Building Services				
Pest Control	Pest control contract for public realm and underground car park	1500	0	1500
Landscaping		20000	0	20000
Landscaping Improvements		2500	0	2500
Playground Repairs & Inspections		4500	0	4500
Duplex Block Repairs & Maintenance		0	9500	9500
Sinking Fund				
Sinking Fund		7500	7500	15000
Estate Service Charge				
Contribution to Estate SC		181652	0	181652
Total		287744	62940	350684

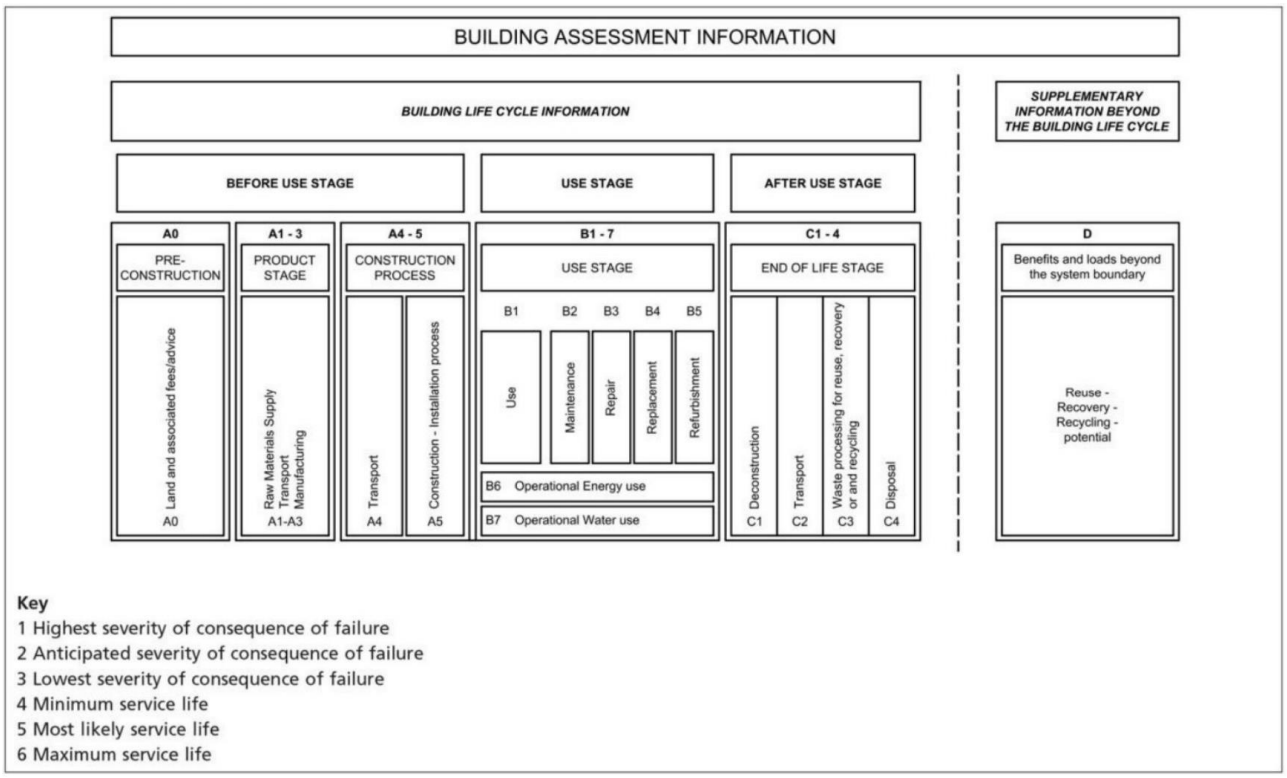
Financed By:-	Number of Units	S/c Estate		S/C Duplex	Total S/C per Unit	Total per Type
Retail	0	0		0	0	0
Employment / Commercial	3	507		0	507	1522
Community	1	507			507	507
Apartments	244	507		0	507	123826
Housing Units	171	507		0	507	86780
Duplex Blocks	148	507		425	933	138048
Total	567					350684

Financed by:						
Unit Type	Number of Units	S/c Estate		S/C Duplex	Total S/C per Unit	Total per Tenure
Retail	0	1890		0	1890	0
Employment / Commercial	3	2646		0	2646	7939
Community	1	378			378	378
One Bedroom Apartments	92	378		0	378	34782
Two Bedroom Apartments	147	454		0	454	66690
Three Bedroom Apartments	5	529		0	529	2646
Two Bedroom Simplex	74	491		395	886	65592
Three Bedroom Duplex	74	567		456	1023	75683
Two Bedroom Houses	6	491		0	491	2949
Three Bedroom Houses	153	567		0	567	86765
Four Bedroom Houses	12	605		0	605	7259
		0			0	0
Total	567					350684

Unit Type	Number	Weight	Estate			Duplex		
Retail	0	5	0	0.66%	0.00%			
Employment / Commercial	3	7	21	0.92%	2.76%			
Community	1	1	1	0.13%	0.13%			
One Bedroom Apartments	92	1	92	0.13%	12.09%			
Two Bedroom Apartments	147	1.2	176.4	0.16%	23.18%			
Three Bedroom Apartments	5	1.4	7	0.18%	0.92%			
Two Bedroom Simplex	74	1.3	96.2	0.17%	12.64%	96.2	0.63%	46%
Three Bedroom Duplex	74	1.5	111	0.20%	14.58%	111	0.72%	54%
Two Bedroom Houses	6	1.3	7.8	0.17%	1.02%			
Three Bedroom Houses	153	1.5	229.5	0.20%	30.15%			
Four Bedroom Houses	12	1.6	19.2	0.21%	2.52%			
			761.1		100.00%	207.2		100%

Appendix B:

Phases of the Life Cycle of BS7543; 2015



Key

1 Highest severity of consequence of failure
2 Anticipated severity of consequence of failure
3 Lowest severity of consequence of failure
4 Minimum service life
5 Most likely service life
6 Maximum service life