



**ARMSTRONG
FENTON**
ASSOCIATES

PROJECT: Strategic Housing Development
for proposed residential development on lands at
Season Park, Season Park Road,
Newtownmountkennedy,
Co. Wicklow

REPORT: Building Life Cycle Report

CLIENT: Dwyer Nolan

DATE: 26 | 03 | 22

**Planning &
Development
Consultants**

1.0 Introduction

This Building Life Cycle report has been prepared in support of a Strategic Housing Development proposed by Dwyer Nolan Developments Limited (the applicant) for a new residential development, on lands at Season Park, south of Season Park Road, Newtownmountkennedy, Co. Wicklow.

The development will consist of 179 no. dwellings, comprised of 121 no. houses, 6 no. duplex units & 52 no. apartments. The houses are comprised of 2 storey detached, semi-detached & terraced houses with 4 no. 2 beds, 86 no. 3 beds and 31 no. 4 beds. The duplex units are accommodated in 3 storey Blocks (i.e. Type H) and are comprised of 6 no. 3 bed units at first & second floor. There are 6 no. 1 bed apartments and 46 no. 2 bed apartments (labelled types G, H, J & J1). The proposed development also provides for a crèche (189.9m²), with community use facility overhead (99.45m²) in a 3 storey building.

The 2020 Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities (hereafter referred to as the “*Apartment Guidelines*”) contain a requirement to include details on the management and maintenance of apartment schemes. This is set out in Sections 6.11 to 6.14 under “*Operation & Management of Apartment Developments*”.

Specifically, Section 6.13. of the Apartment Guidelines requires that applications for apartment developments 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:

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

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

2.0 Proposed Development

The proposed development is as follows:

Dwyer Nolan Developments Ltd intends to apply to An Bord Pleanála for permission for a strategic housing development on a site located on lands at Season Park, Newtownmountkennedy, Co. Wicklow. The site is bounded by Season Park Road (L1037) to the north, by agricultural lands to the west and south, although the latter has permission for development under Ref. No.'s 06/6101, PL27.227704 & 18/381.

The development will consist of 179 no. dwellings, comprised of 121 no. houses, 6 no. duplex units & 52 no. apartments. The houses are comprised of 2 storey detached, semi-detached & terraced houses with 4 no. 2 beds, 86 no. 3 beds and 31 no. 4 beds. The duplex units are accommodated in 3 storey buildings (i.e. Type H) and are comprised of 6 no. 3 bed units at first & second floor. There are 6 no. 1 bed apartments and 46 no. 2 bed apartments (i.e. Types G, H, J & J1), accommodated in 20 no. 3 storey buildings. The proposed development also provides for a crèche (189.9m²), with community use facility overhead (99.45m²) in a 3 storey building.

Access to the development will be via (i) a new vehicular entrance point off Season Park Road to the north, and (ii) via a proposed road extending south and east of the proposed housing, connecting into Main Street, Newtownmountkennedy at Fisher's Corner (as previously permitted under Ref.s 06/6101 & PL27.227704).

The proposed development provides for (i) all associated site development works above and below ground, (ii) public open spaces (9,819m²) and communal open spaces (886m²), (iii) hard & soft landscaping and boundary treatments, (iv) surface car parking (Total: 339 no. spaces), (v) bicycle parking (Total: 158 no. spaces), (vi) bin storage, (vii) public lighting (viii) substation (24m²) all on an overall application site area of 8.5Ha.

2.1 Design Concept

The proposed development responds to its context by creating a strong street edge with new buildings along Season Park Road and by providing units with back gardens along all sensitive boundaries within the site. The scheme incorporates areas of open space with housing surrounding with dwellings directly overlooking it to provide active surveillance.

The development's character provides units of distinct architectural quality. The development's design provides 6 no. recognizable neighbourhoods within the overall development which assist in wayfinding and create a sense of place in each instance. Please refer to the enclosed Architectural Design Statement prepared by Davey + Smith Architects for full details of the 6 no. character areas, listed as A) Season Park Woods, B) Eastern Quarter, C) The Central Avenue, D) East-West Street, E) The Central Green and F) Western Fringe. The site is accessible, catering for access to adjoining lands, with the street layout designed to be compliant with DMURS guidance.

The main access point to the development is located within from the north off Season Park Road and the south via the roadway linking the development with the centre of Newtownmountkennedy. The northern entrance to the scheme provides a landscaped strip on entrance to the site from the roadway.

Fourteen bespoke unit types have been developed to fit into the urban design proposal for the site. These include own-door, single storey apartments, duplexes, walk-up apartments and a wide range of houses types which all address various conditions across the development.

Specific focus has been given to maximise the extent of active edges at corner conditions. Units which address these conditions include side entry E types, wide frontage F types and J type apartments.

Type J is made up of 3 x 2Bed apartments organised over three floors. These units have been designed to bookend a typical street and turn the corner to form a strong active edge on the side elevation which address amenity spaces or the central avenue.

The duplexes (Type H) are also located along the central avenue, where they form a contiguous urban frontage to the development. The ground floor units have terraces to the east overlooking the Avenue and to the west where they address the communal amenity space. The duplex apartments have generous west facing balcony from their open plan living areas

Creche

A 189.9m² creche building for c. 46 no. children is proposed at a central location within the development overlooking a central park area and in close proximity to the site entrance. The creche will include a secure external play space and dedicated parking / set down spaces. It will serve the needs of the development and potentially the wider community.

Community Use Room

A community use room of c.99.45m² is proposed in the same building as the proposed creche, located on the 2nd floor above the creche. It will serve the needs of the community proposed in this development and wider community.

3.0 Section A

An Assessment of Long Term Running and Maintenance Costs as they would Apply on a Per Residential Unit Basis at the Time of Application

Property Management Company and Owner's Management Company (OMC)

3.1 Property Management of the Common Areas of the development

A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that running and maintenance costs of the common areas of the development are kept within the annual operational budget.

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

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

- Timely formation of an Owner's Management Company (OMC) which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members of this OMC.
- Preparation of annual service charge budget for the development common areas.
- Fair and equitable apportionment of the annual operational charges in line with the MUD Act.
- Estate management.
- Third Party Contractors procurement and management.
- OMC Reporting.
- Accounting Services.
- Corporate Services.
- Insurance Management.
- After Hours Services.
- Staff Administration.

3.2.1 Service Charge Budget

The property management company has a number of key responsibilities, most notably, 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 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.

Notwithstanding the above, it should be noted that the detail associated with each element heading, i.e. specification and estimate of the costs to maintain / repair or replace, can only be determined after detailed design and the procurement / construction of the development and therefore has not been included in this document.

4.0 Section B

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

4.1 Energy and Carbon Emissions

The following are an illustration of the energy measured that are planned for the units to assist in reducing costs for the occupants:

| Measure | Description | Benefit |
|------------------|--|--|
| BER Certificates | A Building Energy Rating (BER) Certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation, lighting and occupancy. A Nearly Zero-Energy Building (NZEB) rating will be achieved in accordance with Part L 2019 (Housing) and Part L 2020 (Other than Housing) which set building fabric and energy performance requirements. | Higher BER ratings reduce energy consumption and running costs |

| | | |
|---|--|--|
| <p>Fabric Energy Efficiency</p> | <p>The U Values being investigated will be in line with the requirements set out by the current regulatory requirements of Technical Guidance Document Part L, “Conservation of Fuel and Energy Buildings other than dwellings”.</p> <p>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. See below Table 1 of Part L, Building Regulations.</p> <p>All windows shall be triple glazed windows with a combined thermal transmittance not greater than 1.0W/m²K. All windows shall comply with BS EN ISO 10077-1: 2006 - ‘Thermal performance of windows, doors and shutters. Calculation of thermal transmittance’. Building fabric will include insulation levels, sufficient to meet the Part L 2019 U-values.</p> | <p>Lower U-values and improved air tightness is being considered to help minimize heat losses through the building fabric, lower energy consumption and thus minimize carbon emissions to the environment.</p> |
| <p>Energy Labelled White Goods</p> | <p>Should the applicant provide a white goods package for the apartments, they will be A rated appliances to achieve a high energy efficiency rating.</p> <p>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 would be provided:</p> <ul style="list-style-type: none"> • Oven - A plus • Fridge Freezer - A plus • Dishwasher - AAA • Washer/Dryer – B | <p>The provision of high rated appliances in turn reduces the amount of electricity required for occupants.</p> |
| <p>Internal Common Areas & External lighting</p> | <p>Low energy luminaires and automatic controls such as motion sensors are to be provided for electric lighting to maximize efficiency in use. LED lamps will be preferred as far as is practical.</p> <p>Public / external lighting will be provided to ensure a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area.</p> <p>The proposed lighting scheme within the development consists of 6m pole mounted fittings as indicated on the drawings. The luminaires selected are from ASD Lighting chosen for the following reasons:</p> <ul style="list-style-type: none"> ▪ Low Level lighting ▪ Minimal upward light spill ▪ Low voltage LED lamps | <p>Low energy lamps and automatic controls improve energy efficiency.</p> <p>The site lighting has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing fauna and flora in the area.</p> |
| <p>Air Source Heat Pumps</p> | <p>The thermal energy from the outside air is absorbed and transferred to the space heating and domestic hot water generation systems. This is included in the design put forward for permission.</p> | <ul style="list-style-type: none"> ▪ Reduced carbon emissions ▪ Low fuel costs ▪ No fossil fuel requirement |

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

| Measure | Description | Benefit |
|---|--|--|
| Condensing boilers | Condensing boilers are being investigated as they have a higher operating efficiency, typically over 90% than standard boilers and have the benefit of lower fuel consumption resulting from the higher operating efficiencies. | <p>Higher BER ratings reduce energy consumption and running costs</p> <p>Condensing boilers use the heat losses from the boiler flue to preheat the circulating heating water</p> <p>By preheating the heating water, the boiler can achieve efficiencies in excess of 90%</p> |
| Natural Ventilation | Natural ventilation is being evaluated as a ventilation strategy to minimize energy usage and noise levels. Will be employed via rapid openings in the building i.e., windows. MVHR is required where the buildings air tightness is under 3 | <p>The main advantages of natural ventilation are-</p> <ul style="list-style-type: none"> • Low noise impact for occupants and adjacent units • Completely passive therefore no energy required. • Minimal maintenance required. • Reduced environmental impact as minimal equipment disposal over life cycle. • Full fresh air resulting in healthier indoor environment |
| Mechanical Ventilation Heat Recovery | Mechanical heat recovery ventilation is not considered for the project. | Mechanical Heat Recovery Ventilation provides ventilation with low energy usage. The MVHR reduces overall energy and ensures a continuous fresh air supply. |
| PV Solar Panels | <p>PV solar panels are being considered which converts the electricity produced by the PV system (which is DC) into AC electricity, and in order to meet the renewable energy contribution required by Part L of the Building Regulations and BER commitments.</p> <p>The panels are typically placed on the south facing side of the building for maximum heat gain and in some instances, can also be used to assist the heating system.</p> | 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. |

| | | |
|---------------------------------------|---|--|
| <p>Combined Heat and Power</p> | <p>Combined heat and power (CHP) is not suitable for this type of development</p> | <p>N/A</p> |
| <p>Air Source Heat Pump</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. Waste air heat recovery is to be employed in Apartments. External Heat pumps to be provided to all Houses. All shall be designed, installed and commissioned as per SR50-4:2021 recommendations and BER, Part L, Part F and BCAR to be satisfied</p> | <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 2.5 to 4 times more heat energy to the dwelling than the electrical energy they consume.</p> |
| <p>E-CAR charging points</p> | <p>Charging shall be provided from a local landlord distribution board to designated E-car charging car parking spaces. This will enable the management company the option to install a number of E-car charging points within the car parking spaces to cater for E-car demand of the residences. 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.</p> <p>Houses with parking on curtilage shall be provided with either a dedicated 3.7Kw car charger or as a option but the relevant underground cabling and ducting will be provide throughout the site as part of the site development works.</p> <p>Apartment will be provided with 22kw Fast chargers using Pay as you go due to the parking being "common" to the development. All other car parking shall be as per Part L: 2021 requirements, in addition a number of 50kw fast or rapid chargers, subject to ESB shall be provided (6nr.) with parking provided with ducts in ground to 1 in 10 parking spaces to allows for future requirements.</p> | <p>Providing the option of E-car charging points will allow occupants to avail of the ever improving efficient electric car technologies.</p> |

4.2 Materials

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

4.2.1 Buildings

Apartment buildings are designed in accordance with the Building Regulations, in particular Part D “*Materials and Workmanship*”, which includes all elements of the construction. The design principles and specification are applied to both the apartment units and the common parts of the building and specific measures taken include:

| Measure Description | Benefit |
|--|---|
| Daylighting and openable windows to areas of regular use and circulation | Avoids the requirement for continuous artificial lighting |
| Natural/Passive ventilation system to and openable windows to areas of regular use and circulation | Avoids costly mechanical ventilation systems and associated maintenance and future replacement |
| External paved and landscaped areas Traditional pitched roofs with concrete roof tiles are proposed to the housing & duplex units | All of these require low/minimal maintenance. All of these require low/minimal maintenance |

4.2.2 Material Specification

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.

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

The proposed envelope of the buildings are a mix of brick and durable render finish / metal cladding, with high-performance double-glazed aluminium windows. The choice of materials also has a strong durability with minimal maintenance and upkeep requirements. Based on comparison with similar schemes developed, the proposed materials are considered durable and would not require regular replacement or maintenance.

| Measure Description | Benefit |
|--|--|
| <p>Consideration is given to the requirements of the building regulations and includes reference to BS 7543:2015, “<i>Guide to Durability of Buildings and Building Elements, Products and Components</i>”, which provides guidance on the durability, design life and predicted service life of buildings and their parts.</p> <p>All common areas of the scheme, and their durability and performance are designed and specified in accordance with Figure 4: Phases of Life Cycle BS 7543:2015. The common parts are designed to incorporate the guidance, best practice, principles and mitigations of Annexes of BS 7543:2015 including: Annex A - Climatic Agents affecting durability Annex B- Guidance on materials and durability Annex C Examples of UK material or component failures Annex D Design Life Data sheets</p> | <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>Use of brickwork and pigmented render systems to envelope</p> | <p>Requires minimal maintenance and does not require regular replacement</p> |
| <p>Factory finished and aluminium (or similar) windows and doors and powder coated steel balconies</p> | <p>Requires minimal maintenance and does not require regular replacement</p> |

| Measure | Description | Benefit |
|--------------------------------|--|---|
| <p>BER Certificates</p> | <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, lighting and occupancy. It is proposed to achieve NZEB rating in accordance with current standards/guidance.</p> | <p>Higher BER ratings reduce energy consumption and running costs</p> |

4.3 Landscaping

| Element | Measure Description | Benefit |
|--|--|---|
| Site Layout and Design | <p>Generous and high-quality mature landscaping, with landscape and pedestrian parks between residential buildings are proposed.</p> <p>The open spaces are substantial and have a mixture of soft and hard landscaping.</p> <p>Significant tree planting and soft landscaping within public spaces</p> | <p>SUDs drainage system and landscape maintenance preferable</p> <p>Attenuation reduces the burden on vulnerable rainwater goods.</p> <p>Fewer elements would require replacement or repair.</p> |
| Paving Materials | <p>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.</p> <p>High quality landscaping both hard surface (for the cycle /car parking and pavements) and soft landscaping with planting and trees. The landscaping will be fully compliant with the requirements for Part M / K of the Technical Guidance Documents and will provide level access and crossings for wheelchair users and pedestrians with limited mobility.</p> <p>Designated car parking including accessible car parking can reduce the travel distances for visitors with reduced mobility.</p> | <p>Requires ongoing maintenance significantly reduced through use of robust materials installed with proven details.</p> <p>Plenty of room for bicycles and pedestrians along with car spaces provide a good balance between pedestrians and car users.</p> <p>Wheelchair user-friendly</p> |
| Planting Details | <p>Proven trees staking details. Shrub, hedging, herbaceous and lawn installation planting details provided.</p> | <p>Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.</p> |
| Balcony & Decking Materials | <p>Use of robust high-quality materials and detailing to be durable for bikes, play, etc.</p> | <p>Ensures the longevity</p> |
| Materials | <p>Sustainable, robust materials, with high slip resistance to be used for paving. Durable and robust equipment (e.g. play, exercise, fencing etc.) to be used throughout.</p> | <p>Robust materials and elements reduce the frequency of required repair and maintenance</p> |

4.4 Waste Management

| Measure | Description | Benefit |
|---|--|--|
| Construction and Operational Waste Management Plan | The application is accompanied by a Construction and Waste Management Plan | The report demonstrates how the scheme complies with best practice. |
| Storage of Non-Recyclable Waste and Recyclable Household Waste | <p>Domestic waste management strategy: grey, brown and green bin distinction.</p> <p>Centralized bin storage areas are provided at grade within the apartment buildings / basement / undercroft areas.</p> <p>Competitive tender for waste management collection</p> | <p>Helps reduce potential waste charges</p> <p>Easily accessible by all residents and minimises potential littering of the scheme.</p> |
| Composting | Organic waste bins to be provided throughout | Helps reduce potential waste charges |

4.5 Human Health and Wellbeing

| Measure | Description | Benefit |
|----------------------------|--|--|
| Natural / day light | The design, separation distances and layout of the apartment / duplex buildings have been designed to optimise the ingress of natural daylight / sunlight to the proposed dwellings to provide good levels of natural light | Reduces reliance on artificial lighting, thereby reducing costs |
| Accessibility | All units will comply with the requirements of Building Regulations, Technical Guidance Documents Parts K and M | Reduces the level of adaptation, and associated costs potentially necessitated by residents' future circumstances. |
| Security | <p>The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted:</p> <ul style="list-style-type: none"> ▪ CCTV monitoring details ▪ Secure bicycle stands / storage ▪ Overlooked communal open spaces | Helps to reduce potential security/ management cost |
| Natural Amenity | Numerous public parks located throughout the development, communal open spaces for the apartments. Existing trees and hedgerows are retained / augmented and developed. Connections to adjoining lands and thus onwards to the town centre. | Facilitates community interaction, socialising and play - resulting in improved wellbeing |

4.6. Management

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

| Measure | Description | Benefit |
|------------------------|--|---|
| Home User Guide | <p>Once a purchaser completes their sale, a homeowner box will be provided which will include:</p> <p>Homeowner Manual - This will provide important information for the purchaser on details of the property. Typically it includes details of the property such as MPRN and GPRN information in relation to connection with utilities and communication providers. Contact details for all relevant suppliers and user instructions for appliances and devices in the property.</p> <p>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</p> | Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner. |

4.7 Transport

| Measure | Description | Benefit |
|------------------------------|--|---|
| Permeable Connections | The development facilitates potential future interconnections by pedestrian and cycling routes to adjoining lands / environs | Ensures the long term attractiveness of walking and cycling to a range of local education, retail and community facilities and services . |
| Bicycle Storage | Secure high quality secure bicycle parking both for short and longer term parking requirements | Accommodates the uptake of cycling and reducing the reliance on the private motor vehicle. |
| ECAR facilities | Ducting provided from a local landlord distribution board to designated e-car charging car spaces. | To accommodate the growing demand for e-cars which assist in decarbonising society and reducing oil dependency |

Appendix A

Figure 1- TGD Part L 2019, Table 1

| Table 1 Maximum elemental U-value (W/m²K)^{1, 2} | | |
|---|--|--|
| Column 1 Fabric Elements | Column 2 Area-weighted Average Elemental U-value (Um) | Column 3 Average Elemental U-value – individual element or section of element |
| Roofs | | |
| Pitched roof | | |
| - Insulation at ceiling | 0.16 | 0.3 |
| - Insulation on slope | 0.16 | |
| Flat roof | 0.20 | |
| Walls | 0.18 | 0.6 |
| Ground floors ³ | 0.18 | 0.6 |
| Other exposed floors | 0.18 | 0.6 |
| External doors, windows and rooflights | 1.4 ^{4,5} | 3.0 |
| Notes: | | |
| 1. The U-value includes the effect of unheated voids or other spaces. | | |
| 2. For alternative method of showing compliance see paragraph 1.3.2.3. | | |
| 3. For insulation of ground floors and exposed floors incorporating underfloor heating, see paragraph 1.3.2.2. | | |
| 4. Windows, doors and rooflights should have a maximum U-value of 1.4 W/m ² K. | | |
| 5. The NSAI Window Energy Performance Scheme (WEPS) provides a rating for windows combining heat loss and solar transmittance. The solar transmittance value g_{perp} measures the solar energy through the window. | | |

Appendix B

ITEMS INCLUDED IN A TYPICAL BIF

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

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

| | | | |
|-------------|---|----|--|
| 3.02 | Decorate Walls | 7 | |
| 3.03 | Decorate Joinery | 7 | |
| 3.04 | Replace fire doors | 25 | |
| 3.05 | Replace carpets (stairwells & lobbies) | 12 | |
| 3.06 | Replace entrance mats | 10 | |
| 3.07 | Replace nosing's | 12 | |
| 3.08 | Replace ceramic floors tiles Entrance lobbies | 20 | |
| 3.09 | Fixed Furniture & Equipment - Provisional Sum | 18 | |
| | | | |
| 4.00 | Shared surface Car & Bike Parking | | |
| 4.01 | Remove/ Replace ceiling insulation | 25 | |
| 4.02 | Repaint parking spaces & Numbering | 7 | |
| 4.03 | Replace store doors, ironmongery & digi-locks to bike parking | 15 | |
| 4.04 | Replace Bike stands to bike parking | 25 | |
| 4.05 | Replace basement access control at entrance & core entrances | 12 | |
| | | | |
| 5.00 | M&E Services | | |
| 5.01 | General - Internal re-lamping | 7 | |
| 5.02 | Replace Internal light fittings | 18 | |
| 5.03 | Replace External light fittings (lights at entrance lobbies) | 18 | |
| 5.04 | Replace smoke detector heads | 18 | |
| 5.05 | Replace manual break glass units/ disabled refuge call points | 18 | |
| 5.06 | Replace Fire alarm panel | 18 | |
| 5.07 | Replace lift car and controls | 25 | |
| 5.08 | Replace AOV's | 25 | |
| 5.08 | Replace security access control installation | 15 | |
| 5.09 | Sump pumps replacement | 15 | |
| 5.10 | External Mains Water connection | 20 | |
| 5.12 | Electrical Mains and Sub Mains distribution | 20 | |

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

Appendix C

Phases of the Life Cycle of BS7543; 2015

Figure 4 Phases of the life cycle



