# Castle Park

## Building Life-Cycle Report

Castle Park, Castlelands (Townland), Mallow, Co Cork

LRD Planning Application - October 2024

DEADY GAHAN ARCHITECTS

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on behalf of
**Reside (Castlepark) Ltd.**

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## 1.1 Overview of Planning Policy

Deady Gahan Architects have been appointed to produce this Building Life-Cycle Report to accompany the Large-Scale Residential Development (LRD) planning application to Cork County Council for the proposed development in Castle Park, Castlelands (Townland), Mallow, Co Cork. This Building Life-Cycle Report also meets requirement for a Sustainability Assessment Report.

The aim of this document is to assess the long term running and maintenance costs of the development and demonstrate the provisions put in place as to reduce this cost as per the 2023 Sustainable Urban Housing; Design Standards for New Apartments - Guidelines for Planning Authorities (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 6.10 to 6.14 - "Operation & Management of Apartment Developments", specifically Section 6.12.

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

- "include a building life-cycle 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 6.12 of the Apartment Guidelines. This report is broken into two sections as follows:

Section 02:

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 03:

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

## 1.2 Proposed Development

It is proposed that the site will accommodate a total of 469 no. residential units, an interpretive centre/cafe, and a 122 child crèche.

The layout approach taken is to provide a mix of dwellings ranging from; 1 and 2 bed apartments/duplex units, 1 bed bungalow units, 2 and 3 bed townhouse units as well as 3 and 4 bed semi-detached units. This proposed mix will provide a good range of residential units to meet the varying requirements of the end user and satisfy the housing requirements of the area.

The apartments/duplex units act as important feature units, and will be the main focus of this report.

| CASTLE PARK LRD | | | | | |
|---|---|---|---|---|---|
| Unit Type | Description | No. of Bedrooms | Bed Space | Proposed Unit Area (sq.m.) | No. of Unit |
| A1 | 4-bed semi-detached | 4 bed | 6 | 138.2 | 61 |
| A2 | 4-bed semi-detached | 4 bed | 6 | 140.0 | 7 |
| B1 | 3-bed semi-detached | 3 bed | 5 | 116.6 | 82 |
| B2 | 3-bed semi-detached | 3 bed | 5 | 118.5 | 6 |
| B3 | 3-bed semi-detached | 3 bed | 5 | 116.0 | 4 |
| C1 /C2 / C3 | 3-bed semi-detached / detached | 3 bed | 5 | 110.5 | 40 |
| D1 | 3-bed end townhouse | 3 bed | 5 | 116.6 | 45 |
| D2 | 3-bed mid townhouse | 3 bed | 5 | 116.6 | 12 |
| D3 | 3-bed end townhouse | 3 bed | 5 | 118.5 | 3 |
| E1 | 2-bed mid townhouse | 2 bed | 4 | 92.4 | 42 |
| F1/F2/F3 | 1-bed bungalow w/study | 1 bed | 2 | 66.9 | 3 |
| M1/M2/M3 | 2-bed duplex | 2 bed | 4 | 89.0 | 10 |
| N1/N2/N3 | 1-bed GF apartment | 1 bed | 2 | 51.7 - 53.5 | 10 |
| J1/J2/J3 | 1-bed GF apartment | 1 bed | 2 | 55.5 | 72 |
| K1/K2/K3 | 2-bed duplex | 2 bed | 4 | 89.4 | 72 |
| **4 bed** | | 68 | | 14.5% | |
| **3 bed** | | 192 | | 40.9% | |
| **2 bed** | | 124 | | 26.5% | |
| **1 bed** | | 85 | | 18.1% | |
| **houses** | | 305 | | 65.0% | |
| **duplex-apartments** | | 164 | | 35.0% | |
| **TOTAL NUMBER OF UNITS** | | **469** | | | |
| **SITE AREA (RED LINE BOUNDARY)** | | **18.2 Ha** | | | |
| **DEVELOPABLE AREA** | | **12.7 Ha** | | | |
| **DENSITY** | | **36.9 UNITS / HA** | | | |
| **OPEN SPACE** | | **17.5%** | | | |
| **122-child CRECHE** | | **G.I.A. 788.6 sq.m.** | | | |
| **INTERPRETIVE CENTRE AND CAFÉ** | | **G.I.A. 58.7 sq.m.** | | | |

## 2.1 Establishment of an Owners Management Company

The applicant has placed the future long term running and maintenance costs as a central component in the design process. They have utilised the recommendations as set out in the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities (2023) to inform these costs.

As per section 6.13 of Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities – The Multi-Unit Developments Act, 2011 (MUD Act) sets out the legal requirement for the "Establishment of an Owners Management Company (OMC)". Common areas of the development are to be transferred to the OMC. Such common areas include external walls, footpaths and landscaped areas. These all contribute to the overall long term running and maintenance costs. It will ultimately be the OMC, or those engaged by the OMC that will have responsibility for the long term running and maintenance costs as examined at design stage. All apartments will be under the OMC.

The OMC will engage a Property Management Company (PMC), as a matter of priority, to carry out the ongoing management of the completed development. The contract between the OMC and the PMC will be for a maximum period of c. 3 years and in the form prescribed by the PSRA. The Property Management Company will have the responsibility for dealing with all property management functions including the maintenance and running costs of the above mention common areas and that same adhere to the agreed Annual Operational Budget.

The appointed Property Management Company also has other responsibilities including the following:

• The preparation of an annual service charge budget relating to the common areas of the development

• Fair and equitable apportionment of the annual operational charges in line with the MUD Act

• Transfer of documentation in line with Schedule 3 of the MUD Act

• Estate Management and the procurement/management of third party contractors for the upkeep of common areas

• 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 the common areas

• Staff administration

• Insurance management

• Accounting services

## 2.2 Residents Service Charge Budget

The long term running and maintenance costs on a per residential unit basis are reflected in the annual service charge payable by each residential unit. The compiling of the service charge budget is one of the key responsibilities of the Property Management Company, which in turn, must be agreed with the Owners Management Company by means of a general meeting of the members concerned.

Section 18 (3) of the The Multi-Unit Developments Act, 2011 (MUD Act) breaks the service charge budget down into the following categories:

a) Insurance

b) General maintenance

c) Repairs

d) Waste management

e) Cleaning

f) Gardening and landscaping

g) Concierge and security services

h) Legal services and accounts preparation

i) Other expenditure arising in connection with the maintenance, repair and management of the common areas anticipated to arise

The MUD act also stipulates the establishment of building investment fund (sinking fund) as part of the service charge budget. This sinking fund covers reasonable expenditure incurred on the refurbishment, improvement and maintenance of a non-recurring nature or advice from a suitably qualified person in relation to same. A Building Investment Fund report should be prepared and regularly updated by the OMC to help determine the annual contribution to sinking fund. Section 19 (5) of the MUD Act apportions a nominal figure of €200 per unit for the sinking fund or "*such other amount as may be agreed by a meeting of the members as the contribution in respect of the year concerned"*.

The next section of this report examines the "*measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents*". These measures, considered at early design stage by the applicant have a major bearing on the day to day service charges incurred in the finished development and also on potential non-recurring costs covered by the sinking fund. Examples that will be highlighted include the considered use of landscaping finishes to reduce day to day service charges and the considered selection of building materials to reduce potential non-recurring costs affecting the sinking fund.

## 3.1 Design Efficiency Considerations

The life-cycle cost of the developments is determined by the overall efficiency of the design, the durability of the materials used, and the maintenance requirements of the common spaces within the development. The Apartments/Duplex units have been specifically designed to maximise the efficiency of the common space while providing comfortable access for the end user.

Maintenance costs can only be evaluated after the detailed design and construction of the development and will not be included within this document.

Apartment Buildings

### 3.1.1 Building Form

The Apartments/Duplex units come under the umbrella of the Owners Management Company and have been designed in accordance with all aspects of current building regulations and particular measures have been implemented at the early stage of design to reduce potential costs for the effective functioning of the completed development.

Some of these specific design measures have been included in the following schedule:

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| Internal circulation areas have been minimised | To maximise the use of space and to avoid unnecessary expense in cleaning and renewal of finishes |
| Access to the units is via own door to avoid lifts | This eliminates the need for lifts |
| All circulation areas receive natural daylight | To avoid the requirement for continuous artificial lighting and reduces associated costs of same |
| All circulation areas have natural/passive ventilation | To avoid mechanical ventilation systems, maintenance and future replacement |
| Dual or triple aspect glazing where possible | To increase natural light and to add the benefit of passive solar gain to reduce heating costs. |

### 3.1.2 Material Specification

BS 7543:2015, 'Guide to Durability of Buildings and Building elements, Products and Components' has been referenced in conjunction with the current building regulations. This standard provides guidance on the durability, design life and predicted service life of buildings and their parts and further helps predict and reduce associated costs for Operational Management Company and thus, the individual resident.

The performance and durability of common areas of the proposed apartments as discussed previously are designed 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 and Annex D Design Life Data sheets.

Some of these specific design measures have been included in the following schedule:

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| EXTERNAL BUILDING ENVELOPE | |
| Use of brickwork for large amounts of facades | Brick requires no on-going maintenance |
| Adequate amount of painted render | Painted render requires minimum maintenance of washing and repainting |
| Use of selected double glazed alu clad / Upvc windows | They requires no maintenance to upkeep the visual appearance |
| Use of durable roof coverings (slate / tile) with proven detailing to roof elements. | To reduce on-going maintenance requirement |
| Secure ground level refuse storage areas near the building | To avoid access lifts/ramps and any handling/moving equipment |

## 3.2 Energy and Carbon Emissions

By taking due consideration of the energy and carbon emissions associated with the individual units of the proposed development, this will reduce the overall impact of the development on the environment, whilst reducing individual unit running costs for residents.

Measures taken, in particular in relation to the construction stage, include the following:

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| BER CERTIFICATION<br>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.<br>It is proposed to target an A2 rating for the apartments. | Higher BER ratings reduce energy consumption and running costs. |
| FABRIC ENERGY EFFICIENCY<br>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, titled "Conservation of Fuel and Energy Buildings other than Dwellings".<br>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. | 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. |
| WHITE GOODS<br>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:<br>• Oven - A plus<br>• Fridge Freezer - A plus<br>• Dishwasher - AAA<br>• Washer/Dryer - B | The provision of high rated appliances in turn reduces the amount of electricity required for occupants. |
| EXTERNAL LIGHTING<br>Latest design standards and technologies to be utilised, including low level lighting with minimal upward light spill and low voltage LED lights, all approved by the local authority<br>The operation of the lighting shall be on a dusk-dawn profile to reduce unnecessary artificial light usage. | As well as the aim of reducing lighting costs apportioned to the service charge budget, the external lighting plan will ensure safety for pedestrians, motorists and cyclists alike whilst deterring any potential anti-social behavior. |

## 3.3 Low Energy Technologies

To achieve the best possible BER rating, as discussed above, the following low energy technologies will be considered to achieve the required NZEB (Near Zero Energy Building) standards:

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| AIR TO WATER HEAT PUMPS<br>Air to Water Heat Pumps will be considered to provide space heating & domestic hot water with low energy usage. | Air to Water Heat Pumps offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment. Although a certain amount of electricity is used to power an air to water heat pump, the high efficiencies of such system means they are classed as a renewable heating source and running costs can typically be up to one third of a conventional heating system. |
| VENTILATION<br>Natural/passive ventilation is being evaluated as one ventilation strategy to minimise energy usage and noise levels. | No mechanical parts or associated noise, maintenance etc. for occupants. Provides a supply of fresh air which is essential in modern well insulated and airtight buildings. |
| MECHANICAL VENTILATION HEAT RECOVERY<br>Mechanical heat recovery ventilation will be considered to provide ventilation with reduced energy consumption. | Reduced energy consumption and lower operational costs. |
| ELECTRIC CAR CHARGING POINTS<br>Electric vehicle parking spaces will been spread throughout the development to cater for the Duplex Units and the Ground Floor Apartments. | Providing the option of electric car charging points will allow occupants to avail of electric car ownership and use. |

## 3.4 Human Health and Wellbeing

The built environment has been designed in order to maximise the quality of life within the development.

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

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| NATURAL / DAY LIGHT<br>The design, separation distances and layout of the apartment units 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<br>Compliance with Parts M and K of the current Building Regulations. | Reduces the potential need/cost for changes in design to accommodate resident's future changing circumstances. |
| PUBLIC OPEN SPACES / AMENITY SPACES<br>Generous open spaces have been placed throughout the site and especially close to the apartment units. | Encourages improved wellbeing through social interaction, exercise and play. |
| SECURITY<br>The layout of the development is designed to incorporate passive surveillance. The ground floor apartments and duplex units are designed with secure, passively surveyed, own door access. | Reduction in potential security / management costs. |

## 3.5 Management

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

| MEASURE DESCRIPTION | BENEFIT |
|---|---|
| On purchase, a homeowner pack will be provided for the occupants which will includes:<br><br>A Homeowner manual which will provide important information for the purchaser on details of their new property / dwelling. It typically includes details of the property such as the MPRN and GPRN, information in relation to connections with utilities and communication providers, contact details for all relevant suppliers, and user instructions for appliances, devices and system in the dwelling.<br><br>A Residents' pack prepared by the owners management company which will typically provide information on contact details for the managing agent, emergency contact information, information on transport links in the area, and a clear set of regulations and rules associated with the development. | Information provided to residents will allow them to be as informed as possible so that any issues can be addressed in an efficient and convenient manner. |

## 4.0 Conclusion

In conclusion, various aspects of the Apartments/Duplex units within this development contain measures to reduce the life-cycle cost.

These high density buildings have been situated primarily on the southern part of the site in order to give distinctiveness to the layout, maximise building efficiency and reduce maintenance cost per person.

Energy reducing methods such as Air Source Heat Pumps have been considered to reduce energy consumption and reduce energy cost for the end user.

The 2023 Sustainable Urban Housing; Design Standards for New Apartments - Guidelines for Planning Authorities, has been utilised in order to effectively manage and reduce costs for the benefit of the residents.

# Appendix A: 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** |
| 1.00 | Roofs | |
| 1.01 | Replacement felt roof covering incl. insulation to main roofs/ overhaul to green roofs. | 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 |
| 1.06 | Overhaul waterproofing details to penthouse paved areas | 12 |
| | | |
| 2.00 | Elevations | |
| 2.01 | Recoat metal panels to penthouse apartments | 25 |
| 2.02 | Minor repairs and preparation for decorations of rendered areas | 18 |
| 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 |
| 2.06 | Periodic replacement and overhauling of external fixings | 5 |
| 2.07 | Replace Balcony floor finishes | 25 |
| | | |
| 3.00 | Stair cores & lobbies (3No. Cores) | |
| 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 | Basement & Car Parking | |
| 4.01 | Remove/ Replace ceiling insulation | 25 |
| 4.02 | Repaint parking spaces & Numbering | 7 |
| 4.03 | Replace store doors, ironmongery & digi-locks | 15 |
| 4.04 | Replace Bike stands | 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 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 |