

BUILDING LIFE CYCLE REPORT

For

Proposed STRATEGIC HOUSING DEVELOPMENT

AT LANDS AT THE FORMER GREENPARK RACECOURSE, DOCK ROAD, LIMERICK

Prepared on behalf of

VOYAGE PROPERTY LIMITED

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1.0 INTRODUCTION AND OVERVIEW

1.1 Planning Policy Context

The Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities were published in December 2020. These 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. This Building Lifecycle Report sets out to address the requirements of Section 6.13 of the Apartment Guidelines 2018.

Section 6.13 of the Apartment Guidelines 2018 requires that apartment applications shall:
“include a Building Lifecycle Report, which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application.”
“demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.”

1.2 Site Location

The site



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The overall Greenpark site is bordered to the east by a number of established residential estates, to the north-west by the N69 Dock road, to the north-east by a number of residences and the Dock Road Industrial Estate, while the Ballynaclogh River runs close to the southern perimeter of the subject lands.

The proposed residential development (Phase 1) site is bordered to the east by Log Na gCapall residential estate and to the southeast by Vance's Land, to the north by the former Greenpark Racecourse and to the west by Greenpark Lagoon and the B Ballynaclogh River.

The first phase of the development includes a strategic housing development (SHD) application for 371 dwelling units (of a proposed 920 units), creche and other associated ancillary uses in line with the masterplan. The later phased office campus will be developed to the IDA standards and specifications, ranging from 3-5 storeys in height.

1.3 Existing Site Condition

The site area currently comprises an area of undulating scrub land immediately to the west of an existing residential development and approximately 280m south east of Limerick Greyhound Stadium. The M20 motorway is situated some 190m south of the site, orientated roughly east-west. The site is located at the former Limerick Racecourse and will be accessed via the N69 Dock Road to the west of the site. The site is bounded to the east by existing housing estates at Log na gCapall and Greenpark Avenue.

The site slopes generally from east to west, existing levels vary between 2.5m OD and 10m OD approximately. The lower levels of the site are within the flood plain of Ballynaclogh River.

The baseline conditions consider the existing site area as an unused area to the east of Limerick Greyhound Stadium immediately to the west of an existing residential development. The site was previously developed, the Limerick racecourse was located on the site. The site is now unused and overgrown. The most notable features local to the study area is the Ballynaclogh River which is a tributary of the River Shannon and is located approximately 150m from the western and southwestern edges of the site. The site area is surrounded by residential/business buildings and leisure area.



1.4 Description of Proposed Development

The design and scale of the development has been fully cognisant of the context. We propose 371 dwellings made up of housing, duplex own door apartment and three apartment buildings. The proposed mix is 157 houses, 76 duplex and 138 apartments. There are 157 houses made up of 37 two bed houses, 110 three bedroom houses and 10 four bedroom houses. There are 76 Duplex own door apartments made up of a mix of 24 one bedroom, 38 two bedroom and 14 three bedroom apartment duplex typologies. There are 138 apartments made up of 46 one bedroom apartments and 92 two bedroom apartments. The apartment buildings range from 4-5 storeys high with semi-private garden space and shared curtilage parking to the west.

A nett density of 47 dwellings per hectare has balanced the requirements of sustainable development and takes into account the receiving environment. The development will provide sustainability for both the new residential neighbourhood and adjoining developments in Limerick. There is also a strong design emphasis on street engagement and passive surveillance in the design of the housing. We have provided high quality open spaces. Materials selected of brick, smooth sand-cement render and slate coloured roof tiles all redolent of the area around the south circular Road area but in a more modern aesthetic.

The breakdown of residential development comprises 371 no. residential units consisting of the following:

- 37 no. two-bedroom two-storey houses;
- 110 no. three-bedroom two storey houses;
- 10 no. four-bedroom two-storey houses;
- 76 own door duplex in a combination of two bedroom over one bedroom (24 blocks/48 units) and three bedroom over two bedrooms (12 blocks/24 units)
- 138 apartments, 46 one bedroom and 92 two bedroom apartments.



2 Assessment of Long Term Running & Maintenance Costs

2.0 Owners Management Company and Property Management Company

The Owners Management Company will engage a suitably qualified Property Management Company at an early stage of the development to ensure that all property management functions are dealt with for the development and that the maintenance and running costs of the development's common areas are kept within agreed budgets. The Property Management Company will enter into a contract directly within the Owners Management Company (OMC) for the ongoing management of the completed development.

The Property Management Company will use best practice policies and procedures to oversee the management of the entire development. It is envisaged that the proposed development will be managed under a structure between Voyage Properties and a specialist management team appointed by the Clients.

The operation of a highly visible management regime is one of the key objectives of the development and is in line with good estate management practices. The Estate Director will be responsible for the overall management of the development and their key responsibilities will be; team management, health and safety, risk management, mobility management, implementation of estate policies and procedures, tenant management, security, cleaning and maintenance.

2.1 Property Management of Common Areas

The proposed development has been designed and configured to provide the occupants, residents and neighbours with generous communal facilities and social spaces within the development.

The following is proposed:

Residential amenity areas at ground floor level.

Landscaped communal open spaces on ground floor for the use of the apartment dwellers

Dedicated car parking at ground floor level in marked spaces for residents controlled by the Management Company

Secure bike spaces (separate rooms)

Secure Bin stores

2.2 Placemaking

A key component of the Property Management companies' remit will be fostering, encouraging and ensuring a sense of place is developed and maintained within the development and its surrounds. Place making is essentially creating a community through events, classes, food markets and a high level of engagement with residents and the surrounding community that encourages them to interact with each other and make use of the surrounding environment. It is proposed that this will be done by linking the occupiers of the blocks and member of the surrounding community with a community forum hosted by the Management Company and Voyage Properties.

We have visited a number of developments with similarities to Greenpark in terms of size and location, where the on-site Property Management team have successfully created a sense of place by being the focal point of events which links the residents and the local community.

2.3 Maintenance Management

It is proposed that the maintenance of the development will be managed by a suitably qualified Maintenance Manager who will ensure that all maintenance works is undertaken in accordance with servicing requirements. It will be the responsibility of the Property Management company to ensure all maintenance works are undertaken when required and to the required standard.

2.4 Management of Car and Bicycle Parking

Car parking will be provided on surface level for residents of the Development in marked spaces. There is a strong provision of car sharing through the means of GoCar parking to 13 (5 spaces blocks A&B, 3 spaces block C and 5 spaces for duplex).

It is proposed to provide a total of 510 parking spaces within the full development which includes the GoCar parking spaces which provide an equivalent parking provision of 757 spaces.

All houses with on-curtilage car parking will be first fixed for EV charge points. All common area parking spaces will have ducting run to them to facilitate future installation of additional EV charge points. 10% of common area parking spaces will have EV charge points installed.

For further information please refer to the Traffic and Transportation Section from Punch Consulting / Mobility Management Plan.

2.5 Bicycle Parking

Cycle parking along with cycle facilities have been provided to promote the use of sustainable modes of transport and to reduce car dependency associated with the development.

Bicycle parking will be provided on the basis of one cycle space per apartment. Three dedicated secure cycle parking rooms are located at ground level to the rear of the apartment buildings in secure stores. Visitor bicycle facilities are provided at various locations on site at grade.

The Operational Management Plan, included as part of this submission, provides further details on the Car Parking Strategy for the entire development.

2.6 Service Charge Budget

The Property Management Company will have a number of key responsibilities most notably, the compiling of the service charge budget for the development for agreement with the OMC. In accordance with the MUD Act 2011, the service charge budget typically covers items such as cleaning, landscaping, external lighting, CHP management, refuse management, utility bills, insurance, maintenance of mechanical / electrical lifts / life safety systems, security, property management fee within the development common areas.

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 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, as required by the Multi-Unit Developments (MUD) Act, 2011. In line with the requirements of the MUD Act 2011, 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 in the BIF report, can only be determined after detailed design and the procurement and construction of the development.

3 Measures to Manage & Reduce Costs

3.0 Treatments, Materials & Finishes

The materials proposed for the external façades will be easy to maintain and have excellent life-cycle qualities. The choice of external materials has been driven by our Client's requirement for a fully sustainable, green and robust design solution. The high-quality façade materials are designed to look as good over their design life with brick, high quality render finishes and high quality glazing all designed to ensure minimal staining.

choice of contextual materials such as brick of various colours and textures to identify different blocks, glazed screens, self coloured render and coloured metal panels on balconies will provide different treatments giving modulation to facades. Balconies are simply detailed with robust metal balustrades. Please refer to Materials and Finishes Report.

3.1 Buildings

The proposed 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 and public areas

The scheme provides for a total of 138 apartments in three separate blocks but managed by the same management company. Each apartment benefits from private amenity area (balcony / terrace), open plan living areas and equally sized bedrooms.

3.2 Construction Methodology

The primary structure from ground to 3rd or 4th floor level is pre-cast reinforced concrete frame. The construction methodology proposed includes high quality detailing and materials will maximise efficiency and indoor environment quality. The structural scheme provides support for masonry outer leaf, finished in brick or rendered blockwork. The balconies are supported with a proprietary thermal connector back to structure or through steel support columns. Polyester powder coated aluminium framed composite windows and doors and metal balustrades to balconies are the secondary building elements that will help reduce construction and maintenance costs.

3.3 Material Specification

Consideration is given to the requirements of Building Regulations in relation to durability and design life. The development is designed to incorporate the guidance, best practice principles to ensure that the long-term durability and maintenance of materials is an integral part of the design and specifications of the proposed development. Precast concrete structure is proposed for the residential blocks providing robust enclosure and separation of dwelling units as well as a suitable support to the secondary façade enclosing elements.

High quality brickwork and render finish is proposed on the external facade. These will require minimal ongoing maintenance or associated costs. The use of highly specified, robust factory finished windows and doors and steel balustrade balconies will also reduce ongoing maintenance costs. A preliminary specification has been drafted so as to ensure quality from the outset.

3.4 Performance

We have reviewed the designs with our energy consultants Woods Bagot and come up with design solutions that will enhance the performance of the dwellings and will be easy to maintain. The design solution will exceed the performance requirements of Part L of the Building

Regulations by being from A2 to A3 rated and fully NZEB compliant. Design solutions will be fully sustainable by optimising efficient lighting, heating, cooling and ventilation technologies. We are exploring high performance windows to given enhanced 'u' values for the facades that deliver 'u' values well in excess of Part L standards and insulated pre-fabricated foundations that ensure minimal thermal conductivity at the perimeter.

3.5 Whole Life Design

The principle is the creation of homes that are universally accessible and adaptable over time and meet the changing needs throughout the lifetime of a family, or to meet the varying needs of changing residents. We have considered how the residences can be adapted for their life time that are universally accessible and adaptable over time. We have placed a premium on rationalising levels to ensure where possible level access is provided. Internal apartments are rationalised to improve accessibility. Bathrooms are optimised so that they can be adapted in the future.

3.6 Durability

Durability often goes hand-in-hand with low maintenance. The demands for innovative building techniques and the inclusion of materials and components with lower life-cycle costs test the knowledge and skills of building designers. Robustness of the design and construction is paramount to ensuing materials selected will be lasting and look well throughout their life. Brickwork and rendered blockwork will be robust and good detailing shall ensure minimal staining on facades. Hard-wearing internal lobby and stairwell features including porcelain tiles, vinyl slip-resistant floor finish and tile wall finishes in varying colours will ensure the buildings remain robust.

3.7 Landscaping

The landscaped space between and around the buildings and the site edges provides public amenity and biodiversity. It is also an integral part of the architectural design of the site. Design extends to both soft and hard landscape and supports an accessible, safe and high-quality approach to building approach and site permeability.

3.8 Waste Management

An Operational Waste Management Plan (OWMP) has been prepared by our Environmental Consultant for this development which details the estimated quantity of waste arising and the strategy for the management of waste during the operation of the development. This document will be implemented and further developed as the development is operated.

The OWMP aims to ensure waste management prescriptions that adhere to a waste management hierarchy are implemented at this site thus ensuring re-use, recycling and recovery of waste opportunities are maximised and that disposal of waste to landfill will be considered as the last resort. The OWMP sets out the proposal for waste collection at the site to ensure that waste collections are completed in the required intervals so as to prevent any potential impact on the surrounding environment.

Please refer to the Operation Waste Management Plan which accompanies this application.

3.9 levels of privacy and security

The apartments have been designed with the health and wellbeing of the user in mind. Individual apartment units have been designed to comply with current apartment design guidelines with floor areas in excess of minimum area criteria.

Access to daylight, sunlight and view over landscaped spaces has driven the block and apartment unit planning. The units have been designed to comply with the building regulations as required, including landscape for compliance with Part M accessibility requirements. The scheme has been designed to incorporate passive surveillance of communal areas for security and to promote positive use of external space for all. Another factor in of the health and wellbeing proposal of the scheme is the communal amenity spaces. These areas will provide spaces for residents to gather, to relax, to work, to exercise which will foster a sense of community.

3.10 Residential Management

The Property Management Company will have the following responsibilities once the development is completed:

Timely formation of an Owners Management Company. All future purchasers will be typically obliged to become members;

Preparation of annual service charge budget for the development's common areas;

Apportioning of the Annual operational charges in line with the Multi Unit Development (MUD) Act (equitable division);

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;

Estate Management / Third Party Contractors Procurement and Management;

OMC Reporting / Accounting Services /Corporate Services /Insurance Management;

After Hours Services and Staff Administration.

The management of the property will be ultimately be the responsibility of the final owners.

Consideration has been given to ensuring homeowners have a clear understanding of the property which they will own and the following will be provided at a minimum to ensure homeowners have a clear understanding of their property. Homeowner packs will be provided to new residents which will include a homeowner's manual to provide information to purchasers in relation to their new property.

This pack will typically include details of the property such as information in relation to connection with utilities and communication providers, contact details for all relevant suppliers and instructions for the use of any appliances and devices in the property. A resident's pack prepared by the operational management company will also be provided and will include information on contact details for the managing agent, emergency contact details, transport links and a clear set of rules and regulations for tenants of the property. This will ensure residents are appropriately informed, so any issues can be addressed in a timely and efficient manner and ensure the successful operation of this build to let scheme.

4 Energy & Carbon Emissions

4.0 Design

Landlord services shall be provided to common stair cores and shared areas. This will include general plant, site lighting, common stairwells/core (lifts etc), and emergency lighting and fire alarm services.

4.1 Nearly Zero Energy Building Standard (NZEB)

The development will be designed and constructed so as to ensure that the energy performance of the building is such as to limit the amount of energy required for the operation of the building and the amount of CO₂ emissions associated with this energy use insofar as is reasonably practicable. The key issues have been outlined within this section and the proposed design solutions to demonstrate compliance with regulations.

4.2 Thermal Insulation

The proposed thermal insulation standards shall be in line with current Part L 2017 (nZEB) regulations, the development shall meet the minimum requirements set by the building regulations.

The U Values shall be designed in the context of the balance of heat loss and heat gain, overheating, Building Regulations, Building Energy Rating and comfort conditions. These shall be improved upon where possible limiting the heat loss and, where appropriate, maximizing the heat gains through the fabric of the building.

4.3 Passive energy measures

The design shall endeavour to employ passive energy measures to minimise energy consumption. Passive design strategies will use ambient energy sources instead of purchased energies - electricity and natural gas - these shall include where applicable daylighting, natural ventilation, solar energy and heat pump technology. Renewable energy will be provided in compliance with Part L 2017 (nZEB) i.e. the nearly zero or very low amount of energy required shall be covered to a significant extent by energy from renewable sources, including energy from renewable sources produced onsite or nearby. With regard to the most suitable renewable building technologies, this site shall employ a combination of air source heat pump technology and photovoltaics.

5 Building Fabric Analysis

5.0 Paved roof decks

<i>Location</i>	Flat roof areas
<i>Description</i>	Selected paving slabs on; Pedestal support system on; Roof waterproofing system on; Insulation layer on; Screed layer on; Roof slab to structural engineer's detail.
<i>Lifecycle</i>	Average lifecycle of 30 years. Generally tends to be a long-lasting material if well maintained and installed appropriately.
<i>Required maintenance</i>	General repair works, watching out for displacement of slabs, mortar decay and removal of organic matter.
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	Paving slabs provide a durable and long-lasting roof terrace surface, requiring considerably less maintenance when compared to timber decking or gravel surfaces.
<i>Reference</i>	N/A

5.1 Fall arrest system for roof maintenance access

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • Fall Protection System on approved anchorage device. • Roofing for mechanical attachment through the insulation to various decks. Weathering to be strictly in accordance with membrane manufacturer's specifications. • <i>Overall system length</i>: Refer to roof plans for indicative layouts. Final layouts and system lengths by appointed sub-contractor. • <i>Intermediate support spacing</i> as per manufacturer's specification. • <i>Accessories/other requirements</i>: items required to complete the installation, e.g. bends and curves in rigid rails, corner units for flexible cable systems, turntables, rotary exit units. • <i>Installation</i>: In accordance with BS 7883 by the system manufacturer or a contractor approved by the system manufacturer.
<i>Lifecycle</i>	25-30 years dependent on quality of materials. Generally steel finishes to skyward facing elements can be expected to maintain this life expectancy.
<i>Required maintenance</i>	Check and reset tension on the line as per manufacturer's specifications. Check all hardware components for wear (shackles, eye bolts, turn buckles). Check elements for signs of wear and/or weathering. Lubricate all moving parts. Check for structural damage or modifications.
<i>Year</i>	Annually
<i>Priority</i>	High

<i>Selection process</i>	Fall protection systems are a standard life safety system, provided for safe maintenance of roofs and balconies where there is not adequate parapet protection. A FPS must comply with relevant quality standards.
<i>Reference</i>	N/A

5.2 Roof cowls

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • Roof Cowl System to be supplied with weather apron for flat roofs. • Stainless Steel goose neck tube to facilitate power supply to external roof level bolted to roof and weathered using proprietary weather apron.
<i>Lifecycle</i>	25-35 years
<i>Required maintenance</i>	Check fixings annually, inspect for onset of leading edge corrosion if epoxy powder coat finish and treat.
<i>Year</i>	Annually
<i>Priority</i>	Low
<i>Selection process</i>	Standard fitting for roof termination of mechanical ventilation system
<i>Reference</i>	N/A

5.3 Flashings

<i>Location</i>	All flashing locations.
<i>Description</i>	Lead to be used for all flashing and counter flashings.
<i>Lifecycle</i>	Typical life expectancy of 72 years recorded for lead flashings. Recessed joint sealing will require regular inspections.
<i>Required maintenance</i>	Check joint fixings for lead flashing, ground survey annually and close up inspection every 5 years. Re-secure as necessary.
<i>Year</i>	Ground level inspection annually and close up inspection every 5 years.
<i>Priority</i>	Medium
<i>Selection process</i>	Lead has longest life expectancy of comparable materials such as copper (63 years) and zinc (48 years). Lead is easily formed into the required shapes for effective weathering of building junctions according to Lead Sheet Association details.
<i>Reference</i>	N/A

5.4 Rainwater drainage

<i>Location</i>	Roofs
<i>Description</i>	<ul style="list-style-type: none"> • <i>Rainwater outlets:</i> Suitable for specified roof membranes. • <i>Pipework:</i> Cast Aluminium downpipes • <i>Below ground drainage:</i> To M&E/ Structural Engineers design and specification. • <i>Disposal:</i> To surface water drainage to Structural Engineers design. • <i>Controls:</i> To M&E/ Structural Engineers design and specification. • <i>Accessories:</i> allow for outlet gradings, spigots, downspout nozzle, hopper heads, balcony and main roof outlets.
<i>Lifecycle</i>	Aluminium gutters and downpipes have an expected life expectancy of 40 years in rural and suburban conditions (25 years in industrial and marine conditions), this is comparable to cast iron of 51 years and plastic, less so at 30 years.
<i>Required maintenance</i>	As with roofing systems routine inspection is key to preserving the lifecycle of rainwater systems. Regular cleaning and rainwater heads and gutters, checking joints and fixings and regularly cleaning polyester coated surfaces (no caustic or abrasive materials).
<i>Year</i>	Annually, cleaning bi-annually
<i>Priority</i>	High
<i>Selection process</i>	As above, aluminium fittings compare well against cast iron (in terms of cost) and plastic (in terms of lifespan and aesthetic)
<i>Reference</i>	N/A

5.5 Brickwork

<i>Location</i>	Façades
<i>Description</i>	<p>Buff or Dark Grey brick to façades.</p> <ul style="list-style-type: none"> • Brickwork outer leaf, insulated cavity concrete blockwork/Precast concrete inner leaf, with sand/cement scratch coat, metal clips and plaster board with smooth skim finish. • Mortar joints in brickwork to be white / grey finish with a flush joint.
<i>Lifecycle</i>	While bricks have a high embodied energy, they are an extremely durable material. Brickwork in this application is expected to have a lifespan of 86 years or more. The mortar pointing however has a shorter lifespan of 2550 years.
<i>Required maintenance</i>	In general, given their durability, brickwork finishes require little maintenance. Most maintenance is preventative: checking for hairline cracks, deterioration of mortar, plant growth on walls, or other factors that could signal problems or lead to eventual damage.
<i>Year</i>	Annual
<i>Priority</i>	Low

<i>Selection process</i>	Brick is an attractive finish that bears well against other finishing products such as render to blockwork wall in terms of lifespan (86 vs 53 years). The brickwork does require re-pointing however at 25-50 years.
<i>Reference</i>	N/A

5.6 Acrylic render

<i>Location</i>	Façades
<i>Description</i>	Acrylic finish render system on insulation layer on concrete blockwork/RC concrete leaf with sand/cement scratch coat, metal clips and plaster board with smooth skim finish.
<i>Lifecycle</i>	Renders in general are expected to have a lifecycle of circa 25 years.
<i>Required maintenance</i>	Regular inspections to check for cracking and de-bonding. Most maintenance is preventative.
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	Acrylic render is an attractive finish with the added benefit of this product being BBA certified against other render systems. Appropriate detailing will contribute to a long lifespan for this installation
<i>Reference</i>	N/A

5.7 External windows & doors

<i>Location</i>	Façades
<i>Description</i>	<ul style="list-style-type: none"> Selected Aluminium window system – All units to be double/triple glazed with thermally-broken, aluminium frames. All opening sections in windows to be fitted with suitable restrictors. Include for all necessary ironmongery; include for all pointing and mastic sealant as necessary; fixed using stainless steel metal straps screwed to masonry reveals; include for all bends, drips, flashings, thermal breaks etc.
<i>Lifecycle</i>	Aluminium has a typical lifespan of 44 years in comparison to uPVC which has a typical lifespan of 37 years.
<i>Required maintenance</i>	Check surface of windows and doors regularly so that damage can be detected. Vertical mouldings can become worn and require more maintenance than other surface areas. Lubricate at least once a year. Ensure regular cleaning regime. Check for condensation on frame from window and ensure ventilation.
<i>Year</i>	Annual
<i>Priority</i>	Medium
<i>Selection process</i>	Anodised aluminium is durable and low maintenance with an average lifespan of 44 years, exceeding uPVC (37 years).
<i>Reference</i>	N/A

5.8 Balconies - Metal structure

<i>Location</i>	Balconies
<i>Description</i>	<ul style="list-style-type: none"> • Steel balconies – Metal frame to engineer’s detail, galvanised, primed with painted finish to selected colour. • Thermally broken farrat-plate connections back to main concrete structure of building or metal frame structure • Pre-oiled Cedar ribbed treated deck boards on steel substructure to engineer’s specification. • Galvanised tray formed between steel substructure to engineer’s specification. • Fibre cement board with open joints to be provided to the balcony soffits.
<i>Lifecycle</i>	70 years dependent on maintenance of components.
<i>Required maintenance</i>	Check balcony system as per manufacturer’s specifications. Check all hardware components for wear. Check elements for signs of wear and/or weathering. Check for structural damage or modifications.
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Engineered detail; designed for strength and safety.
<i>Reference</i>	N/A

5.9 Concrete structure

<i>Location</i>	Concrete inset balconies (Where provided)
<i>Description</i>	<ul style="list-style-type: none"> • concrete terrace balconies at selected locations • Thermally broken concrete to concrete connectors back to main concrete structure of building – to Engineers Detail. • Resin finish to concrete deck. • Fibre cement board with open joints to be provided to the balcony soffits.
<i>Lifecycle</i>	While concrete has a high embodied energy, it is an extremely durable material. Concrete frame has a typical life expectancy of 81 years.
<i>Required maintenance</i>	Regular visual inspections of slab junction at connections and general concrete slabs
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Engineered detail; designed for strength and safety.
<i>Reference</i>	N/A

5.10 Balustrades and handrails

<i>Location</i>	Balconies
<i>Description</i>	<p>Glazed Balustrade Option:</p> <ul style="list-style-type: none"> • Approved metal balustrades. • <i>Guarding:</i> Manufacturer’s standard – painted mild steel vertical uprights • <i>Handrails:</i> Manufacturer’s standard - Powder coated aluminium handrails. • <i>Fixing:</i> In accordance with manufacturers details. <p>Metal Balustrade Panel Option:</p> <ul style="list-style-type: none"> • Galvanised, primed with painted finish.
<i>Lifecycle</i>	General glass and metal items with a 25-45 year lifespan.
<i>Required maintenance</i>	Regular visual inspection of connection pieces for impact damage or alterations.
<i>Year</i>	Annual
<i>Priority</i>	High
<i>Selection process</i>	Long lifespan versus timber options.
<i>Reference</i>	N/A



INTERNAL BUILDING FABRIC SCHEDULE

Floors

5.11 Common areas – apartment stair cores & entrances

<i>Location</i>	Ground floor entrance lobby
<i>Description</i>	□ Selected anti-slip porcelain or ceramic floor tile. □ Provide for inset matwell.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas, likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection, intermittent replacement of chipped / loose tiles.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Slip rating required at entrance lobby, few materials provide this and are as hard wearing.
<i>Reference</i>	N/A

<i>Location</i>	Liftcore and apartment lobbies
<i>Description</i>	Selected anti-slip porcelain or ceramic floor tile border with selected carpet inlay on underlay. Tiles in lifts to match adjacent apartment lobbies.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas for the tiling, 13year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection with regular cleaning.
<i>Year</i>	Quarterly inspection and cleaning as necessary.
<i>Priority</i>	Low
<i>Selection process</i>	Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility.
<i>Reference</i>	N/A

<i>Location</i>	Stairs
<i>Description</i>	Selected carpet finish on underlay with approved nosings.
<i>Lifecycle</i>	13-year lifespan for carpet. Likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection with regular cleaning
<i>Year</i>	Quarterly inspection and cleaning as necessary

<i>Priority</i>	Low
<i>Selection process</i>	Using carpet allows flexibility to alter and change as fashions alter and change providing enhanced flexibility
<i>Reference</i>	N/A

<i>Location</i>	All wet areas
<i>Description</i>	Selected anti-slip ceramic floor tile.
<i>Lifecycle</i>	Lifespan expectation of 20-25 years in heavy wear areas, likely requirement to replace for modernisation within this period also.
<i>Required maintenance</i>	Visual inspection, intermittent replacement of chipped / loose tiles.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Slip rating required at entrance lobby, few materials provide this and are as hard wearing.
<i>Reference</i>	N/A

5.12 Common areas – apartment stair cores & entrances

<i>Location</i>	Ground floor entrance lobby
<i>Description</i>	Selected contract vinyl wall paper feature.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard.
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish. Used as feature in common areas against paint.
<i>Reference</i>	N/A

<i>Location</i>	Lift core and apartment lobbies
<i>Description</i>	Selected contract vinyl wallpaper, class O rated.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard.
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged.
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish. Used as feature in common areas against paint.
<i>Reference</i>	N/A

<i>Location</i>	Stairs
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish.
<i>Reference</i>	N/A

5.13 Ceilings

<i>Location</i>	Common & tenant amenity areas
<i>Description</i>	Selected paint finish with primer to skimmed plasterboard ceiling. Acoustic ceiling to liftcore and apartment lobbies.
<i>Lifecycle</i>	2-10 years for finishes; 39 years for plasterboard
<i>Required maintenance</i>	Regular maintenance required, damp cloth to remove stains and replacement when damaged
<i>Year</i>	Bi-annually
<i>Priority</i>	Low
<i>Selection process</i>	Decorative and durable finish.
<i>Reference</i>	N/A

5.14 Internal handrails & balustrades

<i>Location</i>	Stairs & landings
<i>Description</i>	<ul style="list-style-type: none"> Painted mild steel railings fixed to stairs stringer / landing slab edge via polished steel brackets and clamps fixed to concrete slab to manufacturer's details & specifications. Timber handrail with clear matt varnish finish fixed to anchor bolted back to masonry wall or fixed back to glazed balustrade system to manufacturers details and specifications.
<i>Lifecycle</i>	25-30 years typical lifecycle.
<i>Required maintenance</i>	Regular inspections of holding down bolts and joints.
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	Hard wearing long life materials against timber options.
<i>Reference</i>	N/A

5.15 Internal doors and frames

<i>Location</i>	All buildings
<i>Description</i>	<ul style="list-style-type: none">• Selected white primed and painted solid internal doors.• All fire rated doors and joinery items to be manufactured in accordance with B.S. 476.• Stainless steel door handles, hinges and locking mechanisms.• Timber saddle boards.
<i>Lifecycle</i>	30 years average expected lifespan.
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear.
<i>Year</i>	Annual
<i>Priority</i>	Low, unless fire door High
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

5.16 Skirtings & architraves

<i>Location</i>	All buildings
<i>Description</i>	Skirtings and architraves. Painted MDF.
<i>Lifecycle</i>	30 years average expected lifespan.
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

5.17 Window boards

<i>Location</i>	Residential blocks
<i>Description</i>	Window boards. Painted MDF.
<i>Lifecycle</i>	31 years average expected lifespan.
<i>Required maintenance</i>	General maintenance in relation to impact damage and general wear and tear.
<i>Year</i>	Annual
<i>Priority</i>	Low
<i>Selection process</i>	Industry standard
<i>Reference</i>	N/A

5.18 BUILDING SERVICES - Mechanical Systems

<i>Location</i>	<i>Plant Rooms – Ground Floor Level</i>
<i>Description</i>	<i>Centralised Plant</i>
<i>Lifecycle</i>	<i>Annual Maintenance / Inspection to Heating System Annual Maintenance of Air Source Heat Pumps Annual Maintenance / Inspection to Heating and Water Pumps. Annual Maintenance / Inspection to Water Tanks. Annual Maintenance / Inspection to Booster-sets. Annual Maintenance / Inspection to DHS Tanks. Annual Maintenance / Inspection of district heating system pipework, valves, accessories and insulation. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage. Replacement of equipment at (End of Life) EOL to be determined at detailed design stage.</i>
<i>Required maintenance</i>	<i>Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme</i>
<i>Year</i>	<i>Annually</i>
<i>Priority</i>	<i>Medium</i>
<i>Selection process</i>	<i>All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the CIBSE recommended lifecycles.</i>
<i>Reference</i>	<i>n/a for this item.</i>

5.19 Soils and Wastes

<i>Location</i>	<i>All Areas / kitchens Pods etc</i>
<i>Description</i>	<i>Soils and Wastes Pipework</i>
<i>Lifecycle</i>	<i>Annual inspections required for all pipework within landlord areas. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.</i>
<i>Required maintenance</i>	<i>Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme</i>
<i>Year</i>	<i>Annually</i>
<i>Priority</i>	<i>Medium</i>
<i>Selection process</i>	<i>All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the CIBSE recommended lifecycles.</i>
<i>Reference</i>	<i>n/a for this item.</i>

5.20 Water Services

<i>Location</i>	Apartments, Kitchens, Pods etc
<i>Description</i>	Copper Water Services Pipework and associated fittings and accessories.
<i>Lifecycle</i>	Annual inspections required for all pipework within landlord areas. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Inspections, including legionella testing to be included as part of Development Planned Preventative Maintenance Programme
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

5.21 Heating Services

<i>Location</i>	Apartment
<i>Description</i>	Exhaust Air Heat Pump (EAHP) proposed to be installed at each unit.
<i>Lifecycle</i>	Annual Inspection of Heat Interface Unit in each unit. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual Service Inspections to be included as part of Development Planned Preventative Maintenance Programme
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

Electrical / Protective Services

5.22 Electrical Infrastructure

<i>Location</i>	Switch rooms / Risers
<i>Description</i>	Maintenance of Electrical Switchgear
<i>Lifecycle</i>	Annual Inspection of Electrical Switchgear and switchboards. Thermographic imaging of switchgear 50% of MV Switchgear Annually and LV switchgear every 3 years. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Every three years to be included as part of Development Planned Preventative Maintenance Programme
<i>Year</i>	Annually
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet and exceed ESB, ETCI , CIBSE recommendations and be code compliant in all cases.
<i>Reference</i>	n/a for this item.

5.23 Lighting Services internal

<i>Location</i>	All Areas – Internal
<i>Description</i>	Lighting – LED throughout with Presence detection in circulation areas and locally controlled in apartments.
<i>Lifecycle</i>	Annual Inspection of All Luminaires Quarterly Inspection of Emergency Lighting. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required per above remedial works.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current IS3217, Part M and DAC Requirements.
<i>Reference</i>	n/a for this item.

5.24 Lighting Services External

<i>Location</i>	All Areas – Internal
<i>Description</i>	Lighting – All LED with Vandal Resistant Diffusers where exposed.
<i>Lifecycle</i>	Annual Inspection of All Luminaires Quarterly Inspection of Emergency Lighting Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required as per the PPM schedule.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current IS3217, Part M and DAC Requirements.
<i>Reference</i>	n/a for this item.

5.25 Protective Services – Fire Alarm

<i>Location</i>	All areas – Internal
<i>Description</i>	Fire alarm
<i>Lifecycle</i>	Quarterly Inspection of panels and 25% testing of devices as per IS3218 requirements. Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Annual / Quarterly Inspections certification as required as per the PPM schedule.
<i>Year</i>	Annually / Quarterly
<i>Priority</i>	High
<i>Selection process</i>	All equipment to meet requirements and be in accordance with the current IS3218 and the Fire Cert
<i>Reference</i>	n/a for this item.

5.26 Protective services – Fire Extinguishers

<i>Location</i>	All areas – Internal
<i>Description</i>	Fire Extinguishers and Fire Blankets
<i>Lifecycle</i>	Annual Inspection
<i>Required maintenance</i>	Annual with Replacement of all extinguishers at year 10
<i>Year</i>	
<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	All fire extinguishers must meet the requirements of I.S 291:2015 Selection, commissioning, installation, inspection and maintenance of portable fire extinguishers.
<i>Reference</i>	n/a for this item.

5.27 Services – Dry Risers

<i>Location</i>	Common Area Cores
<i>Description</i>	Dry Risers
<i>Lifecycle</i>	Weekly / Annual Inspection
<i>Required maintenance</i>	Visual Weekly Checks of Pipework and Landing Valves with Annual testing and certification by specialist.
<i>Year</i>	
<i>Priority</i>	Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Selection process</i>	The system shall be installed in accordance with BS 5041 & BS 9999
<i>Reference</i>	n/a for this item.

5.28 Sources of Renewable Energy

<i>Location</i>	Roof
<i>Description</i>	PV Array on roof Supporting the Part L / NZEB requirements in conjunction with Heat Pumps
<i>Lifecycle</i>	Quarterly Clean Annual Inspection Cost for replacement equipment to be updated on completion of design matrix of equipment at detailed design stage.
<i>Required maintenance</i>	Quarterly / Annual
<i>Year</i>	Annually
<i>Priority</i>	Medium
<i>Selection process</i>	All equipment to be detailed as part of the detailed design section of the development. This equipment will be selected in conjunction with the design and management team to meet and exceed the CIBSE recommended lifecycles.
<i>Reference</i>	n/a for this item.

6 Conclusion

6.0 In summary, this Building Lifecycle Report addresses the requirements of Section 6.13 of the Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities. Section 6.13 of the Apartment Guidelines December 2020 requires that apartment applications shall: “include a Building Lifecycle Report, which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents.”

6.1 This Building Lifecycle Report provides an assessment of the long term running & maintenance costs, the measures to manage and reduce costs and the energy strategy for the proposed development. The report outlines how the development at Greenpark will be designed and constructed so as to ensure that the energy performance of the development is such as to limit the amount of energy required for its overall operation.

Therefore, it is submitted that this Building Lifecycle Report outlines how the proposed development accords fully with the proper planning and sustainable development of the area, the Sustainable Urban Housing: Design Standards for New Apartments while providing an attractive, high quality, contemporary development which enhances the development at lands at the former Greenpark racecourse, Dock Road, Limerick.