

BUILDING LIFE CYCLE REPORT

APARTMENTS & DUPLEX UNITS

LONGVIEW STRATEGIC RESIDENTIAL
HOUSING DEVELOPMENT

AT: LAHARDANE & BALLINCOLLY, CORK.

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NOVEMBER 2019

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CONTENTS:

- 1.0 Introduction
- 2.0 Summary of Proposed Development
- 3.0 Assessment of operating and maintenance of Public areas
 - 3.1 Establishment of an Owners Management Company for common areas of the development.**
 - 3.2 Residents Service Charge Budget**
- 4.0 Design Approach – Measures considered to control and manage maintenance costs
 - 4.1 Building Form**
 - 4.2 External Building Fabric**
 - 4.3 Landscape**
 - 4.4 Energy Efficiency & Carbon Emissions**
 - 4.5 Waste Management**
 - 4.6 Health & Well Being**
 - 4.7 Transport & Accessibility**
 - 4.8 Management**
- Appendix A Items included in a typical Building Investment Fund
- Appendix B Phases of the Life Cycle of BS7543;2015

1.0 Introduction

The design of a residential development should be considered in a holistic manner and take account of the Sustainability, Comfort and Long-term maintenance with the related financial implications on residents and owners. All are fundamentally affected by the selection of materials & technologies and how they are applied.

Building materials proposed for use on elevations and in the public realm achieve a durable standard of quality that will not require regular fabric replacement or maintenance outside of the general day to day care. The choice of high quality and long-lasting materials such as brickwork, render and raised seam metal roof cladding in conjunction with a high quality and durable selection of hard landscaping materials throughout will contribute to lower maintenance costs for future residents and owners.

Furthermore, basic principles, including orientation and setting on site, passive solar gain/ mitigating against over-heating and early emphasis on a highly insulated building envelope have been considered from pre-liminary design stage and will contribute towards minimising heating and cooling costs throughout the lifetime of the building. Emphasis on the thermal envelope of dwellings provides an opportunity for practical and cost-efficient future reductions in energy requirements with the introduction of Photo Voltaic Solar Panels. Refer to the Horgan Carroll Residential Energy Conservation Strategy.

The following assessments are based on the drawings and design information current at the date of this report and are subject to change pending, a positive planning decision, detailed design and revisions to the Building Regulations which may occur over the duration of the construction programme.

This report should be read in conjunction with the drawings and other documentation accompanying this Strategic Housing Development Application.

The Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities were published in March 2018. The Apartment Guidelines introduced a requirement to include details on the management and maintenance of Apartment schemes. This is set out in section 6.11 – 6.14 – “Operation & Management of Apartment Developments”, specifically Section 6.13.

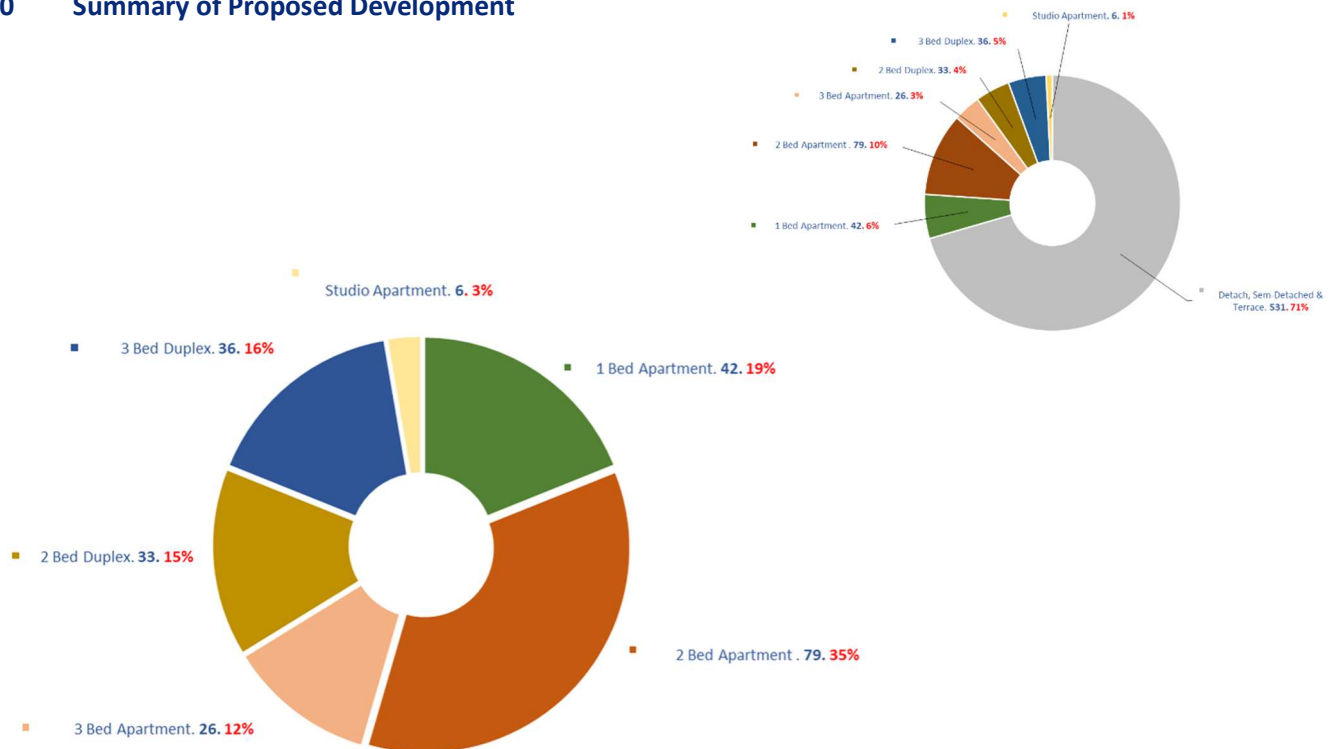
Section 6.13 of the Guidelines require that apartment applications shall:

“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 the 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 will address the requirements of Section 6.13 of the Apartment Guidelines.

2.0 Summary of Proposed Development



222 Apartment Units

The proposed development will consist of a strategic housing development including 753 residential units to be constructed in a series of phases (six neighbourhoods in total), a local centre including retail (2 no. units), a crèche, doctors surgery and community use unit and all associated and ancillary infrastructure, services and site development works at Lahardane and Ballincolly (Townlands), Ballyvolane, Cork City

The proposed 753 no. residential units are comprised of the following:

- 67 no. detached houses including 31 no. 4 bedroom units and 36 no. 3 bedroom units
- 278 no semi-detached houses including 41 no. 4 bedroom units and 237 no. 3 bedroom units
- 186 no. terrace houses including 18 no. 4 bedroom units, 96 no. 3 bedroom units and 72 no. 2 bedroom units
- 69 no. duplexes including 36 no. 3 bedroom units and 33 no. 2 bedroom units
- 153 no. apartments including 6 no. studio apartments, 42 no. 1 bedroom apartments, 79 no. 2 bedroom apartments and 26 no. 3 bedroom apartments. Three apartment blocks will be provided (2 no. in Neighbourhood 6 and 1 no. in Neighbourhood 2)

The proposed development includes a number of open spaces and play areas in addition to general landscaping, boundary treatments (including walls and landscaping to the houses to the north) and lands to the east, and landscaped parkland / greenway. The proposal includes an internal distributor road providing access to neighbouring lands, associated internal roads, car parking, pedestrian and cycle paths (providing access to neighbouring lands), public lighting, internal bus stops and turning area, bin storage (in apartment locations) and cycle parking and all site services infrastructure. The associated site and infrastructural works include water supply, foul and surface / storm water drainage infrastructure to local services and drains and 5 no. unit sub stations. The proposed development makes provision for two no. pumping stations (and connections to / from same), one in neighbourhood 5 and one adjacent to the Ballyhooly Road, with access, to serve this site and future lands as required by Irish Water.

Two no. vehicular accesses are proposed from the Ballyhooly Road and one no. access to / from the local road to the north of the site (pedestrian access points will also be allowed for to the local road to the north), all including local road widening within applicant lands, re-surfacing and boundary works Signalisation of the Lower Dublin Hill / Ballyhooly Road Junction is also proposed along with the provision of a new bus stop on the eastern side of the Ballyhooly Road close to the junction of Lower Dublin Hill and the Ballyhooly Road. The application also provides for the reservation of lands to accommodate the widening of the Ballyhooly Road and the provision of new pedestrian and cyclist infrastructure along the eastern side of the Ballyhooly Road with crossing of same close to Mervue Lawn south of the proposed development.

3.0 Assessment of operating and maintenance of Public areas.

“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 the application”.

3.1 Establishment of an Owners Management Company for common areas of the development.

A property management company will be engaged prior to commencement of the detailed design / construction phase to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development are kept within the agreed annual operational budget.

The Property Management Company will enter into a contract directly with the Owners Management Company (OMC) for the ongoing management of the built development. This contract will be for the maximum period of 10 years and in the form prescribed by the PRSA.

The Property Management Company also has the following responsibilities for the apartment development once constructed:

- Timely formation of an Owners Management Company (OMC)
- Preparation of annual service charge budget for the development common areas.
- Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (MUD Act).
- Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act including completion of Developer OMC Agreement and the transfer of common areas.
- Transfer of documentation in line with Schedule 3 of the MUD Act.
- Estate Management.
- Third Party Contractors Procurement and management.
- OMC Reporting.
- Accounting Services.
- Insurance Management.
- After hours Services.
- Staff Administration.

***Part V units located within Duplex Apartment complexes will be managed by the Local Authority (Cork City Council)**

3.2 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 including each apartment and duplex units. 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.

A number of individual Property Management Companies and Owners Management Companies will be required resulting from the nature and scale of the proposed development. PMC & OMC will be required for the following:

- N1 Duplex Apartment block, Units 67-75 incl. associated landscape and amenity areas.
- N2.1 Duplex Apartment block, Units 1-12 & 68-75 incl. associated landscape and amenity areas.
- N2.2 Apartment Complex units 76 – 102, Retail units, Doctors Surgery & Creche incl. associated Public realm, landscape and amenity areas.

- N2.3 Duplex Apartment block, Units 142 – 156 incl. associated landscape and amenity areas.
- N5 Duplex Apartment Block, Units 69-80 & 81-92 incl. associated landscape and amenity Areas.
- N6 126 Apartment complex including Block A & B and associated landscape and amenity areas.

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

- Insurance
- General maintenance
- Repairs
- Waste management
- Cleaning
- Gardening and landscaping
- Concierge and security services
- Legal services and accounts preparation.
- 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 an 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 the 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”*.

4.0 Design Approach – Measures considered to control and manage maintenance costs

“Demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents”

This report refers to the Multi Storey Apartments at N2 & N6 and Duplex Apartments at N1, N2 & N5. Design development has been progressed in compliance with the Building Regulations including Part D “Materials and Workmanship” and reference has been made to BS 7543:2015, “Guide to Durability of Buildings and Building elements, Products and Components”. BS 7543:2015 provides guidance on the durability, design life and predicted service life of buildings and their parts and assists in predicting and reducing associated costs for the Operational Management Companies and thereafter, future residents.

Duplex apartments are provided with own door access to the public realm. Common areas of the proposed apartments are designed in accordance with Figure 4: Phases of the Life Cycle of BS7543;2015 (Refer to Appendix B). the common areas are designed to incorporate the guidance, best practice principals 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.

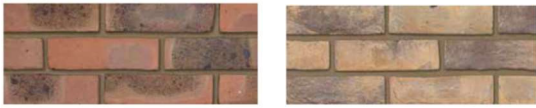

Annex D: Design Life Data sheets.

The following assessments are based on the drawings and design information current at the date of this report and are subject to change pending, a positive planning decision, detailed design and revisions to the Building Regulations which may occur over the duration of the construction programme.

4.1 Building form:

Measure	Description	Benefit
Layout	Internal Circulation areas have been minimised within the confines of TGD Part M compliance and user comfort.	Providing cost efficiency in cleaning, maintenance/ renewal of finishes and ancillary heating costs.
Limited heating of Circulation Areas	Internal circulation areas are to be included within the insulated envelope of the building and provided with limited space heating.	Minimises the risk of condensation within the public areas and a reduction in maintenance / renewal of finishes, providing comfort to users and assisting in the provision of a stable temperature within apartments.
Daylight to circulation areas	Stair cores are located on external walls with windows at all floor levels.	Avoids the requirement for continuous artificial lighting and reduces associated running, maintenance and future replacement costs.
Natural / Passive ventilation to circulation areas.	Stair cores are located on external walls with windows at all floor levels. Vertical natural air vents are provided to provide ventilation as and where required under Technical Guidance Document Part B – Fire Safety.	Avoids the requirement for mechanical ventilation and reduces associated running, maintenance and future replacement costs.
Natural Ventilation to basement car park N6, Blocks A & B.	Utilising and working with existing topography, the apartment complex at N6 has been designed to incorporate a semi-basement car park. The car park includes an open side and an open well to the roof/ podium garden above. The design avoids the requirement for mechanical ventilation.	Avoids the requirement for mechanical ventilation, associated build costs and reduces associated running, maintenance and future replacement costs.
Large lightwell to the semi-basement car park.	Utilising and working with existing topography, the apartment complex at N6 has been designed to incorporate a semi-basement car park. The car park includes an open light well to the roof/ podium garden above.	Provides a visual connection between the first-floor podium/ roof garden and the basement car park, avoids the requirement for continuous artificial lighting and reduces associated running, maintenance and future replacement costs of the basement car park.
Dual Aspect Apartments	77% of apartments (Multi-storey & Duplex units) are dual aspect. 67% of Multi-storey apartments are dual aspect & 100% of Duplex units.	Dual aspect apartments have increased levels of natural light and passive heat gain. Improving resident comfort and reducing lighting and heating costs.

4.2 External Building Fabric Schedule:

Measure	Description	Benefit
Use of brickwork to majority of multi-storey facades.	<p>Selected brickwork is proposed to the majority of Multi-storey Apartments at N2 & N6.</p> <p>The multi-storey apartment scheme located at the N2 neighbourhood centre is entirely clad in a selected brickwork.</p> <p>Predominately brick cladding is proposed to the external perimeter of the multi-storey apartment scheme at N6. The exterior of this element of the development varies from three to six storey.</p>  <p>Three storey duplex buildings contain a mix of pre-coloured render and brickwork.</p>	<p>Brickwork requires no-on-going maintenance work and retains a high quality of visual appearance indefinitely. The use of brickwork avoids associated maintenance and future replacement costs.</p> <p>The use of predominantly brick to the external perimeter reduces to a minimum the maintenance work required to elements of the building which involve working at heights avoiding associated maintenance and future replacement costs.</p>
Use of pre-coloured render	Pre-coloured render in the format of a selected knapp finish or a wet dash appearance generally.	Pre-coloured render requires no-on-going maintenance work and retains a high quality of visual appearance indefinitely. The use of pre-coloured render avoids associated maintenance and future replacement costs.
UPVC / Alu-clad windows & doors	Factory finished UPVC / Alu-clad windows and doors throughout.	Requires no on-going maintenance and retains a high quality of visual appearance indefinitely.
Mono-pitched raised seam roof.	<p>The design of the proposed apartment blocks includes for a substantial element of raised seam cladding on plywood decking on mono-pitch roof's.</p> 	<p>Raised seam roofing avoids on-going maintenance work and retains a high quality of visual appearance indefinitely.</p> <p>The attic space resultant from the mono-pitch roof provides a landlord service area which can accommodate individual condensing units which are ancillary to the heat pumps within each apartment. The arrangement provides direct access to the open air as is required, while protecting the condensing units from the elements, thus avoiding associated maintenance and a reduction in future replacement costs.</p> <p>The arrangement also negates the requirement for a series of condensing units being located on the exterior of the building in an unsightly manner.</p>
Flat roof, Selected single ply or similar approved warm roof.	Most Multi Storey apartment roofs are flat in nature. Flat roof's will consists of single ply membrane or similar approved roofing membranes on a warm roof.	Minimises ongoing maintenance.

<p>Selected roof tile</p>	<p>Duplex units are provided with ventilated, pitched roofs finished with selected roof tiles.</p> 	<p>Requires no on-going maintenance and retains a high quality of visual appearance indefinitely.</p>
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4.3 Landscaping:

Measure	Description	Benefit
<p>Site Layout and Design</p>	<p>Generous and high-quality landscaped corridors with Pedestrian and bicycle priority link a series of neighbourhood home zones, play areas, neighbourhood centre and public transport node points.</p> <p>In addition, the greenway/ pedestrian priority route incorporates outdoor gym facilities, amphitheatres, kick about spaces, local and neighbourhood play areas, natural play areas and circuitous amenity walkways and cycle paths.</p>	<p>Encourages improved wellbeing through social interaction, exercise and play.</p> <p>Assists in the reduction of potential security requirements / costs.</p>
<p>Hard Landscaping Surfaces</p>	<p>Hard landscape materials have been selected with quality, robustness and ease of maintenance in mind. Hot rolled asphalt will be used for road surfaces while home zone areas and traffic calming raised tables will be highlighted with colored chippings in the asphalt. Roadside footpaths will have a concrete finish while footpaths through open spaces will be finished out in bitumen macadam or concrete.</p> <p>Hardstand areas in public open spaces and within the curtilage of the apartment blocks and houses will be finished out with a combination of concrete sett pavers and compacted gravel for visual effect and variation through the site.</p>	<p>Requires minimal on-going maintenance and retains a high quality of visual appearance indefinitely.</p> <p>Robust materials and elements reduce the frequency of required repair.</p>
<p>Soft Landscaping</p>	<p>Planting proposals have generally been formulated to complement the local landscape setting. Native trees have been selected in significant numbers for planting along boundaries and across open spaces while non-native species have also been selected where spatial constraints and management requirements are important considerations, such as along roads and in close proximity to houses.</p> <p>Shrubs and groundcover planting are provided to the front of plot boundary walls which face onto roads and open spaces and in planting beds within the curtilage of the houses and apartment blocks to provide visual interest and a sense of seasonality and diversity.</p>	<p>Reduced frequency of maintenance</p>
<p>Sustainability & Biodiversity</p>	<p>Considerable effort has been made to respond positively to the surrounding boundary conditions where possible. Existing boundaries are maintained</p>	<p>Reduced frequency of maintenance</p>

	<p>and supplemented to minimize the impact on existing habitats as well as existing residents of the immediate surrounding area. All unusable / unsuitable areas for development will be used to improve the bio-diversity of the site. This will positively contribute to the character and identity of the development.</p> <p>Existing trees and hedges along site boundaries will be retained and protected during site works. Retention of the hedgerows is accommodated by the exclusion of plot boundary walls which would have an adverse impact on the root protection zones. As a sustainable alternative weld mesh fencing will be provided adjacent to the hedgerows along with additional planting within garden spaces.</p>	
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4.4 Energy Efficiency, Low Energy Technologies & Carbon Emissions:

Measure	Description	Benefit
Fabric Energy Efficiency	<p>Emphasis is placed on minimising heat loss through the thermal envelope of all residential units to a standard above the requirements of NZEB / TGD Part L 2019. Elements include:</p> <p>Wall 0.18 W/m²K (0.18) Roof 0.13 W/m²K (0.16) Flat Roof 0.18 W/m²K (0.20) Ground Floor 0.13 W/m²K (0.18) Windows 1.0/1.2 W/m²K (1.40)</p> <p>Emphasis on a high standard of Air-Tightness with an maximum envisaged Air Permeability rate of 3.6 m³/(h.m²).</p> <p>A Thermal Bridging Factor of 0.08w/m²K has been applied when preparing the sample energy assessments. In accordance with Paragraph 1.3.3.2, Part L, it is reasonable to apply such a value where Acceptable Construction</p>	<p>Reduced U-Values result in reduced heating and cooling costs in addition to reduced Carbon emissions.</p>
		<p>A high standard of Air Tightness result in reduced heating and cooling costs in addition to reduced Carbon emissions. Air tightness must be considered in conjunction with adequate and efficient ventilation.</p>
		<p>Good junction detailing will result in reduced heating and cooling costs in addition to reduced Carbon emissions.</p>
BER Certification & Compliance with TGD Part L 2019.	<p>Preliminary DEAP calculations set out on the Residential Energy Conservation Strategy for each house type and show compliance with the minimum standards set out in TGD Part L and achievement of NZEB standards including:</p> <p>MCPC 0.35 (Maximum Permitted) MEPC 0.30 (Maximum Permitted) RER 0.20 (Minimum Permitted)</p> <p>REFER to the Horgan Carroll Residential Energy Conservation Strategy for detail DEAP assessments and detailed confirmation of NZEB & Part L compliance.</p>	<p>All units will achieve an A2/A3 BER with variations on the Primary Energy Values. Lower primary energy requirements result in reduced running costs and Carbon emissions.</p>
Public lighting	<p>Public lighting within the development are set out on MHL lighting plan drawings. The light fittings selected are as follows:</p>	<p>Public lighting has been designed to:</p> <ul style="list-style-type: none"> - Provide a safe environment for pedestrians and cyclists.

	<p>Neighbourhood Lamps - Philips Luma Micro LED BGP615 DW50 3.4klm</p> <p>Secondary Pathways - Philips Luma Micro LED BGP615 DW50 1.4klm</p> <p>Main Distributor - Philips Luma Micro LED BGP615 DW50 5.0klm .</p> <p>Fittings are selected based on the following:</p> <ul style="list-style-type: none"> - Low voltage LED lamps – Neighbourhood Lamps - 21W Secondary Pathways - 9W Main Distributor - 31W - Minimum light spillage - Pre-approved by Cork City / County Council 	<ul style="list-style-type: none"> - To deter anti -social behaviour. - To manage and minimise the environmental impact of artificial lighting. - Long life energy efficient lighting results in a reduction in energy requirements and reduction in running costs. - Reduction in maintenance requirements.
White goods	Where handover of apartments includes fit out, “A Rated white goods, where practical to be provided.	Reduction in energy requirements with resultant reduction in running costs.
“Future proofing” Photovoltaic solar Panels (PV)	<p>Placing an emphasis on the thermal envelope of buildings at the outset minimises the impact of future performance upgrades. The addition of photo voltaic solar panels can supplement Primary Energy Requirements without infrastructural works.</p> <p>Refer to DEAP studies within the Residential Energy Conservation Study.</p>	<p>Future provision of Photo Voltaic solar panels can result in 60-70% of the primary energy requirements for an apartment being provided from renewable energy (Combination of heat pump efficiency and PV supply) with a resultant reduction in space and water heating costs.</p>
	An Air to Water heat pump operating at a minimum of 496% on mains electricity provides water and space heating.	Future provision of Photo Voltaic solar panels can supplement the primary energy required to provide space and water heating with resultant reduction in space and water heating costs.
Air Source Heat Pump	Space and water heating are provided by means of an air to water heat pump which will provide an average efficiency of 496%.	Reduction in energy requirements with resultant reduction in running costs.
Ventilation	Natural ventilation in conjunction with mechanical extract to wet rooms is proposed for apartments.	<p>Natural ventilation is passive and has a limited impact on primary energy use.</p> <p>Minimal maintenance required.</p> <p>No mechanical parts or associated noise, maintenance for residents.</p> <p>The majority of apartments are dual aspect allowing natural cross ventilation resulting in reduced risk of overheating and greater comfort for residents.</p> <p>“Future proofing” The provision of cross ventilation reducing the risk of overheating mitigates the potential for future cooling requirements and the associated costs to residents for same.</p>
MEV	Low Energy Whole House Mechanical Extract Ventilation is proposed to provide air change and to	An energy and cost-efficient method of providing requisite air changes with

	mitigate against condensation and related air quality concerns in accordance with TGD Part F.	resultant costs savings and quality of environment to the resident.
ECAR Charging Points	<p>All commercial areas with dedicated car parking on site will be designed to allow for the ESB to introduce on site charge points in accordance with their prevailing design approach at a 10% rate as required by the Development Plan.</p> <p>All apartment buildings, e.g. the basement areas of the Apartment buildings at N6 will be designed so as to accommodate for EV Charging solutions at selected locations subject to ESB / Electricity Undertaking requirements and network planning; detailed ESB network design as part of M&E delivery on site will occur.</p> <p>E-charging points will be provided as demand requires.</p>	To accommodate and encourage the growing demand for e-cars which assist in reducing Carbon emissions.

***This section should be read in conjunction with the Horgan Carroll Residential Energy Conservation Strategy setting out the design focus on reducing Carbon Dioxide emissions beyond standards required under NZEB/ TGD Part L 2019. Reduced Carbon Dioxide emissions result in reduced primary energy usage and accordingly reduced resident running costs.**

4.5 Waste Management:

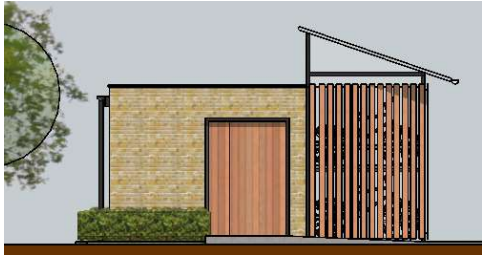
Measure	Description	Benefit
Construction Waste Management Plan	This application is accompanied by a Construction Management Plan prepared by MHL Consulting Engineers.	The plan demonstrates how the scheme has been designed to comply with national, regional and local waste legislation and current best practice.
Construction Operational Waste Management Plan	This application is accompanied by a Construction Operational Waste Management Plan prepared by MHL Consulting Engineers.	The plan demonstrates how the scheme has been designed to comply with national, regional and local waste legislation and current best practice.
Storage of Non-Recyclable waste and Recyclable household waste	Bin stores with access control are provided centrally to each of the individual apartment complex. Refer to Drawings 800 & 801 for bin storage locations and details. N6 – Blocks A & B are provided with access-controlled collection points located in proximity, street side to each individual stairwell/ pedestrian entrance. An additional bin store is located centrally to the basement car park/ stairwell for ease of use by residents.	Easily accessible to residents and waste management contractors. Access control to deter fly tipping.
	Domestic waste management strategy: All centralised collection points to consist of mixed non-recyclable waste, Dry mixed recyclables, glass and organic waste segregation.	Potential reduction in waste charges.
Storage of Non-Recyclable waste and Recyclable Commercial waste	Centralised bin stores with access control are provided to service the Creche Facility, Doctors Surgery, Community Room and both retail units. Refer to Drawings 800 & 801 for bin storage locations and details.	Easily accessible to users and waste management contractors. Access control to deter fly tipping.
	Commercial waste management strategy: All centralised collection points to consist of mixed non-recyclable waste, Dry mixed recyclables, glass and organic waste segregation. Both retail units are provided with storerooms for collection of Dry mixed recyclables and glass.	Potential reduction in waste charges.
Composting	Organic waste bins to be provided in the communal waste stores.	Potential reduction in waste charges and designed to comply with national, regional and local waste legislation and current best practice regarding segregation of biodegradable waste.

4.6 Health & Well Being:

Measure	Description	Benefit
Day light	<p>Apartment design, orientation, layout, arrangement of apartment blocks and living spaces have been considered to maximise day light hours to the primary living spaces within individual apartments and to optimise the ingress of natural daylight.</p> <p>The majority of Kitchen / Dining / Living rooms are orientated to the south, south east or south west.</p> <p>The majority of Apartments 77% are dual aspect.</p>	<p>Orientation, layout and Dual aspect apartments have increased levels of natural light and passive heat gain. Improving resident comfort and reducing lighting and heating costs.</p>
Security	<p>The scheme has been designed to maximise passive surveillance.</p> <p>Additional security controls such as CCTV management will be provided to Bicycle stores and recorded access control to same.</p>	<p>Assists in the reduction of potential security requirements / costs.</p>
Public Open / Amenity Space	<p>The provision of interconnected local and neighbourhood play areas, pedestrian and bicycle priority amenity routes through the site, both circuitous and providing connectivity to off-site facilities and amenities in the greater existing neighbourhood.</p>	<p>Encourages improved wellbeing through social interaction, exercise and play.</p>
Natural Amenity	<p>The sloping nature of the western half of the site at N1, N3, N4 & N6 has resulted in planted embankments separating rear gardens and separating neighbourhoods from the distributor roads.</p> <p>Such embankments provide an opportunity for ancillary green space, planted to result in a woodland setting. Benefits include:</p> <ul style="list-style-type: none"> - Strong ecological corridors which traverse the site reinforcing existing ditch lines and forming new routes. - Ancillary green space, which is excluded from useable amenity space calculations. 	<p>Encourages improved wellbeing through social interaction, exercise and play.</p> <p>Improves the privacy and between back to back properties, reduces noise transition between properties and encourages wildlife.</p>
Part M and Part K compliance.	<p>All residential units are designed to have level access for persons with disabilities as required under TGD Part M.</p> <p>All residential units are designed to include Part M compliant visitor toilets, minimum door & corridor widths and accessible light switches and sockets among other standards as required.</p>	<p>Reduces the requirements and associated costs for changes in design to accommodate resident's future changing circumstances.</p>

4.7 Transport & Accessibility:

Measure	Description	Benefit
Public Transport	<p>The surrounding areas of Dublin Hill and Ballincolly are served by the 207 bus. The existing closest bus stops are located at Brookwood and Kempton Park which serve the 207. The 207 runs from Ballyvolane to Donnybrook via Cork City Centre with a terminus at Glenheights Park on Glenheights Road and a terminus at Scairt Cross, Donnybrook. The route serves Glen Rovers Hurling Club, Ballyvolane Business Park, Ballyvolane Shopping Centre, Cork City Centre and Douglas. Services depart every 30 minutes from Glenheights between 07.10 to 23.00 Monday to Saturday and on Sundays from 09.30 to 23.00.</p> <p>The outbound route runs from Donnybrook to Ballyvolane through Patrick Street with the same frequency as the inbound route. The inbound route commences at Glenheights Park, travels via Ballyvolane Business Park, east along the North Ring Road, northeast along Ballyvolane Road past the shopping centre, then south along Ballyhooly Road through Dillon's Cross, St. Luke's and down Summerhill North, across Brian Boru Bridge to the bus station at Parnell Place before commencing its southbound part of the route.</p> <p>The existing bus route can be extended into the proposed development, this will increase connectivity and accessibility to surrounding amenities and Cork City. It is also proposed to develop a signalised pedestrian crossing and a bus stop to the south of the Ballyhooly Road/ Kilbarry Link Road Junction. It is proposed to have bus stops within the site on the distributor road. The two bus stops within the development are situated near the local centre and along the greenway between neighbourhoods as indicated on the site layout plan.</p> <p>The potential extension of the distributor road into neighbouring zoned land allows for the potential continuation of the bus route when these lands are developed in the future. The proposed developments entrance is also in close proximity to the bus terminus along Ballyhooly Road which will form a public transport hub in the area.</p>	<p>Availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on motor vehicles and assists in producing a modal shift.</p>
Pedestrian & Cyclist Permeability	<p>A high degree of permeability throughout the site is achieved by creating pedestrian & bicycle connections and access for all users throughout the development. Pedestrian and cycle paths are prioritised to destination areas of the site by providing an off-road series of interconnected pathways.</p> <p>Connectivity is prioritised to pedestrian and cycle movement by a series of pathways from within neighbourhoods.</p> <p>The street hierarchy is clearly defined by the distributor road from the Ballyhooly road that connects all the neighbourhoods together. This road has associated cycle and footpaths flanked on both</p>	<p>The provision of desire line and amenity routes within the development site assists in reducing the reliance on private motor vehicles.</p> <p>Provides for the long-term benefits of cycling to the health and well-being of residents.</p> <p>Increased pedestrian and bicycle use, facilitated by the provision of the proposed facilities, encourages the use of amenity spaces provided, stimulates more vibrant and active public spaces</p>

	<p>sides of the road to allow connectivity along the entire route which accentuates its order of hierarchy as the primary connection to each neighbourhood. Two bus stops are also located along this road as destination points. Feeder roads lead into each neighbourhood from the distributor road with accompanying footpaths and end in more intimate home zones</p> <p>The free movement of pedestrians and cyclists is maximised by providing connectivity desire lines with pathways designed to allow for pedestrian and cyclist easy movement between each residential street, neighbourhood and destination areas in the development.</p> <p>These conscious design decisions have been made to create awareness and give priority to pedestrians and cyclists.</p>	<p>and provides for additional passive surveillance of public spaces.</p>
<p>Bicycle Storage</p>	<p>580 bicycle storage spaces are provided within the proposed scheme in accordance with the criteria set out under <i>Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities</i>.</p> <p>Each individual apartment complex within the development includes an integrated bicycle store.</p> <p>A proportion of bicycle storage points as required under <i>The Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities</i> are provided for “visitors” and located in the open air close to apartment entrances and suitable for safe and secure storage of bicycles.</p> <p>The following is a summary of bicycle storage provision within the scheme:</p> <ul style="list-style-type: none"> N1 Duplex Apartment block, Units 67-75 30 Spaces – Stand-alone store N2.1 Duplex Apartment block, Units 1-12 & 68-75 68 Spaces - Integrated internal Store N2.2 Apartment Complex units 76 – 102 56 Spaces- Stand-alone store N2.3 Duplex Apartment block, Units 142 – 156 48 Spaces – Stand-alone store N5 Duplex Apartment Block, Units 69-80 &81-92 72 Spaces – Stand-alone store N6 126 Apartment complex, Block A & B 306 Spaces – Integrated internal Store.  <p>Typical integrated bin & Bicycle store.</p>	<p>Substantial and high-quality bicycle storage in the context of the importance placed upon bicycle and pedestrian connectivity, in addition to the provision of amenity routes within the development site assists in reducing the reliance on private motor vehicles.</p> <p>Increased bicycle use, facilitated by the provision of the proposed facilities, encourages the use of amenity spaces provided, stimulates more vibrant and active public spaces and provides for additional passive surveillance of public spaces.</p> <p>Provides for the long-term benefits of cycling to the health and well-being of residents.</p>

	<p>Resident bicycle stores are protected from the weather and provided with recorded access control.</p> <p>As set out at section 4.7, security controls such as CCTV management may also be provided.</p>	
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4.9 Management:

Measure	Description	Benefit
Home User Guide	<p>On completion of a sale a home-owner will be provided with the following:</p> <p>Homeowners Manual:</p> <p>Information included within the manual will include:</p> <ul style="list-style-type: none"> - Details regarding connections with service providers. - MPRN details - Operating / User instructions for appliances and devices within the property. - Warranties for mechanical & electrical installations. - Maintenance requirements and contacts for Mechanical, heating & plumbing installations. - Technical specification and colours for materials / External finishes. 	<p>Residents are provided with the necessary information to manage, maintain properties in an appropriate manner and to maximise enjoyment of their property.</p> <p>Allow for maintenance to occur as required to minimise expenditure, replacement plant costs and to provide for use comfort.</p>
	<p>A Residents Pack:</p> <p>Information provided by the OMC including:</p> <ul style="list-style-type: none"> - Contact details for relevant agents - Emergency contact details - Local transport connections - Rules and Regulations - OMC & Resident responsibilities 	

APPENDIX A Items included in a typical BIF:

The following BIF Table illustrates a typical schedule of items to be included in the calculation of a sinking fund. The sample BIF is based on the apartment complex at N2.

BUILDING INVESTMENT FUND (SINKING FUND) ESTIMATION			
Ref	Element	Life Expectancy	Valuation
1.00	Roofs		
1.01	Replacement of flat roofing membrane, warm roof build-up including insulation.	20	
1.02	Replacement of parapet capping and upstand.	20	
1.03	Replacement of pitched roof raised seam cladding, on vapour barrier, on plywood sarking.	40	
1.04	Replacement of pitched roof rainwater gutters and downpipes	40	
1.05	Specialist roof Systems / fall arrest	20	
1.06	Replacement of roof access hatches and doors	25	
2.00	Elevations		
2.01	Minor repairs, preparation for decoration, decoration of rendered areas.	30	
2.02	Replace entrance and exit doors	30	
2.03	Replace rainwater goods	25	
2.04	Recoat powder coated finish to balcony structure and balustrade	20	
2.05	Periodic replacement and maintenance of external fixings	5	
2.06	Replace balcony floor finishes	25	
2.07	Replace louvre frame to top fourth floor balcony	20	
2.08	Replacement of vertical raised seam cladding, on vapour barrier, on plywood sarking and ventilated double batten.	40	
2.09	Decorate timber panels to main entrance door surround	18	
2.10	Re-powder coat, two storey, main entrance surround.	18	
3.00	Stair cores & lobbies (2 No. cores)		
3.01	Decorate ceilings	5	
3.02	Decorate walls	5	
3.03	Decorate joinery	5	
3.04	Replace fire doors	25	
3.05	Replace carpets (Stairwells, lobbies & corridors)	10	
3.06	Replace entrance mats	10	
3.07	Replace ceramic floor tiles and nosings to stairs and landings.	20	
3.08	Periodic replacement and maintenance of fixed furniture	5	

APPENDIX B Phases of the Life Cycle of BS7543; 2015

