



Building Lifecycle Report

**Proposed Social and Affordable Housing Development
at New Road, Donabate, Co. Dublin**

LADP/001/24 Local Authority Development Proposal

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1.0 Introduction

This Building Lifecycle Report has been prepared by Fingal County Council Architects Department for construction of 175 new residential units (houses and apartments) and a creche on a site situated in the Townland of Ballisk, which is toward the eastern edge of Donabate, a town on the east coast of North County Dublin.

This document has been prepared with reference to the requirements of the ‘Sustainable Urban Housing: Design Standards for New Apartments (Guidelines for Planning Authorities)’ published in December 2022. These Guidelines provide policy guidance on the operation and management of apartment developments, to include a statement of the aim of certainty regarding their long-term management and maintenance structures. This certainty is to be provided via legal and financial arrangements supported by effective and appropriately resourced maintenance and operational regimes.

Holistic and careful scheme design and choice of building materials, together with the effective management by the FCC Housing Maintenance Department and each resident playing their part, will contribute towards a desirable, vibrant community into the future.

This document reviews the outline building specification for the proposed development and includes detail of measures proposed to manage and reduce costs for the benefit of future residents.

The report considers the use of durable materials and finishes for external elevations to reduce the need for regular maintenance and/or replacement, outside of general maintenance and housekeeping works. A similar approach is proposed in the choice of building material for internal finishes, for electrical and plumbing installations, and for landscaping of public and private open space areas.

As the building design develops, this document is to be updated to help inform the FCC Housing Maintenance Department of expected running and maintenance costs for the development, and to aid more accurate scheduling of works and service charge budgets.





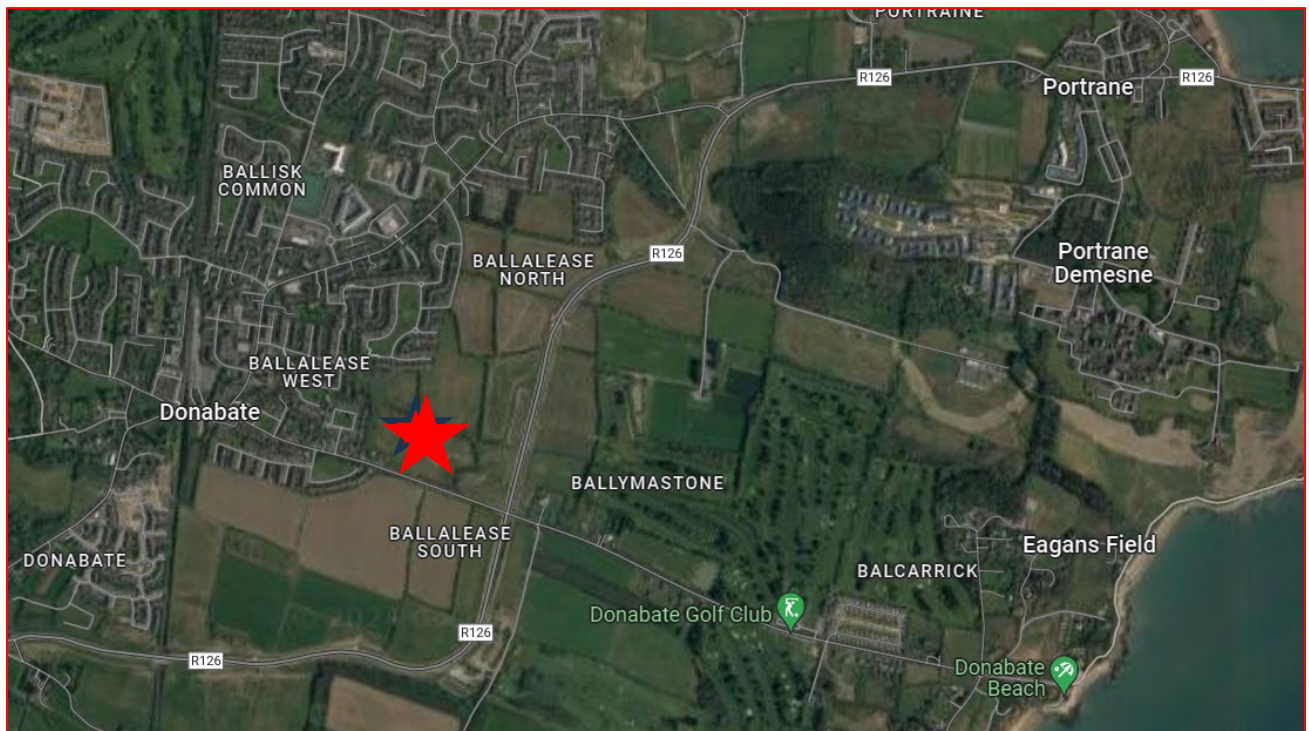
2.0 Proposed Development Description

This document has been prepared by Fingal County Council Architects Department.

The development is proposed at this site of 4.72 hectares at New Road, Donabate, Co. Dublin. The site is generally bound by: a site which is currently being developed to the north; Lanestown View residential development to the east; New Road and existing residential dwellings fronting same to the south; and Saint Patrick's Park residential development to the west. The site includes: part of New Road for road junction, cycle track, footpath and water service connection works; and part of the site to the north for water service connection works.

The proposed development will principally comprise the construction of 175 No. residential dwellings (123 No. houses and 52 No. apartments) and a single-storey crèche of 365 sq m (with outdoor play area and external stores). The 123 No. houses, which are part-1-/part-2-storey and 2-storey in height, include 30 No. 2-bed units, 82 No. 3-bed units and 11 No. 4-bed units. The 52 No. apartments include 26 No. 1-bed units, 20 No. 2-bed units and 6 No. 3-bed units and are contained in a single block ranging in height from 1 No. to 4 No. Storeys.

The development will also include the following: 2 No. new multi-modal entrances/exits at New Road; 2 No. multi-modal connections to existing and under construction residential developments to the east and north respectively; cycle track and footpath along New Road; 139 No. car parking spaces; 4 No. set down bays; motorcycle parking; cycle parking; hard and soft landscaping, including public open space, communal amenity space and private amenity spaces (which include gardens, balconies and terraces facing all directions); boundary treatments; 1 No. sub-station; bin stores; lighting; PV panels atop houses; green roofs, PV panels, lift overruns and plant atop the apartment block; green roofs and PV panels atop the crèche building; and all associated works above and below ground.





3.0 Long-term running and maintenance costs

The long-term running costs, as they would apply on a per residential unit basis at the time of application. Units in this proposed development will be designed and constructed using quality materials and the skills of highly competent trade's people. The Applicant and Design Team have many years of experience to rely upon and the design has been informed from initial stages through discussion with the relevant Local Authority Departments and the DoHLGH, and published guidance including the Sustainable Urban Housing: Design Standards for New Apartments.

Careful consideration of long-term running and maintenance costs for the end-user have been accounted for from the outset of this project, and this conscious thought process is essential in providing housing which will require minimal maintenance into the future.

Certainty around long-term running and maintenance costs for the development will be further strengthened via robust legal and financial arrangements supported by Fingal County Council's effective and appropriately resourced maintenance and operational regimes.





4.0 Measures to Effectively Manage and Reduce Costs for Residents

The following measures were specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents: Long-term running and maintenance costs for the end-user have been central concerns during the design development process. The holistic incorporation of these concerns by the entire design team is essential to provide housing which minimises long-term costs to the resident.

It is envisaged that units proposed in this development will achieve a minimum A2 Building Energy Rating and will meet the standard required to be nearly Zero Energy Buildings (nZEB) as directed under the European Energy Performance of Buildings Directive Recast 2010 (EPBD). The tables below provide a summary of measures proposed to assist with the effective management and reduction of costs associated with the completed development for the end- user/occupant.

The preliminary DEAP assessment reviewed a typical mid-floor 2 bedroom apartment and typical 2 -bed house which both demonstrate EPC, CPC and RER compliance buildings in accordance with the Part L of the Building Regulations 2022 and have an indicative Building Energy Rating (BER) of A2 (Refer to Appendix 1F for further details).

4.1 Building Design

The apartment buildings are designed in accordance with the Building Regulations, in Particular Part D Materials and Workmanship which include all elements of the construction, where the design principles and specification are applied to both the residential units and the common areas of the building. Specific design measures investigated include:

MEASURE	DESCRIPTION	BENEFIT
Building Aspect/ Daylight	<p>The design, separation distances and layout of the apartment blocks and other residential units aims to maximise provision of natural daylight, targeting levels that meet European, CIBSE and BRE Guidelines and FCC objective DMSO22.</p> <p>Daylight & sunlight assessments have been carried out for habitable rooms by 3D Design Bureau; please refer to the Daylight and Sunlight Assessment Report that forms part of this application, and concludes that: <i>“the provision for daylight and sunlight within the apartments is very favourable”</i></p>	<p>Good natural daylight creates a positive living environment and contributes to the wellbeing of the occupants and the provision of high-performance glazing on the elevations that maximises the use of natural daylight that will enhance the visual comfort for the occupants. It also reduces reliance on artificial lighting, thereby reducing costs</p>
Core Design	Daylighting to stair cores & protected lobbies	Avoids the requirement for continuous artificial lighting.
Accessibility	All units will comply with the requirements of Building Regs and Technical Guidance Documents Parts K and M. Additionally, 45 Units, consisting of 34 apartments and 11 houses have been designated Accessible Units in accordance with Fingal County Council's Strategic Plan for Housing People with a Disability 2016-2021 and Fingal Development Plan 2023-2029	Reduces the level of future adaptation and associated costs for residents.
Ventilation	All areas to be served with natural & or mechanical ventilation where required as per Building Regulation TGD Part F requirements.	Reduce energy usage costs of ventilation systems and associated maintenance/upgrade costs.



Security	The scheme is designed to incorporate principals of passive surveillance to promote a vibrant community life and deter antisocial behaviour. Allowance made for inclusion of CCTV monitoring details and secure bicycle stands for apartment blocks.	Helps to reduce potential security/ management cost
Amenity Space	Provision of a variety of communal open spaces which serve the needs of a wide range of residents.	Encourages community and social interaction among residents in an interesting, well maintained public realm.
Private Open Space	Provision of balconies and openable windows, provides access to the outdoors and allows individuals to clean windows themselves.	Facilitates interaction with outdoors. Reduces the cost and reliance on 3rd party contractors for cleaning & maintenance.

4.2 Building Construction Materials

The proposal seeks to meet the requirements of the Building Regulations with particular reference to BS 7543:2015, 'Guide to Durability of Buildings and Building Elements, Products and Components', which provides guidance on the design life and predicted service life of buildings and their parts, ensuring that the long-term durability and maintenance of materials is an integral part of the specification of the proposed development.

Materials under consideration include brickwork, coloured render systems, powder-coated aluminium framed double-glazed windows and doors, powder-coated steel balustrades, metal mesh panels, concrete roof tiles and green roofing all require minimum on-going maintenance and reduce ongoing associated costs.

MEASURE	DESCRIPTION	BENEFIT
Design & Material Selection	Materials have been selected and chosen with due consideration to their durability, design life and maintenance requirements. Consideration given to Buildings Regulations and other relevant guidance e.g., BS 7543:2015 'Guide to Durability of Buildings and Building Elements, Products and Components'	Longevity, durability. Minimises ongoing maintenance and replacements requirement.
Building Envelope	Use of brick and coloured render systems to building envelope	Requires little or no maintenance aside from regular house-keeping
Roofs	Concrete roof finish to houses and single ply roofing membranes with green roof finish to apartment flat roofs.	Requires minimal maintenance aside from regular house-keeping.
External Windows & Doors	Powdercoated alu-clad windows and doors to houses and apartment block.	Increased longevity and durability. Reduce energy usage costs of ventilation systems and associated maintenance/ upgrade costs.



4.3 Energy & Carbon Emissions

The proposed development will comply with Building Regulations Part L 2022 - Dwellings (NZEB).

As part of the development's efforts to further reduce energy consumption, the project is targeting a minimum A2 BER (Building Energy Rating) throughout. Extensive work has been carried out to develop a balanced design approach to achieve these onerous targets with several sustainable features being incorporated into the design from the early stages.

A detailed energy statement has been prepared by JV Tierney Consulting Engineers to illustrate this balanced approach; please refer to the CLIMATE ACTION ENERGY STATEMENT report that forms part of this application.

4.4 NZEB

Technical Guidance Document Part L – Conservation of Fuel and Energy – Dwellings sets out the requirements for the minimum fabric and air permeability requirements, maximum primary energy use and carbon dioxide (CO₂) emissions as well as the minimum amount of energy derived from renewable sources.

In line with building regulations requirements an energy assessment procedure will be performed for each building to ensure compliance is achieved. A dwelling energy assessment procedure will be performed for each dwelling in the development. A non-domestic energy assessment procedure will be performed for the landlord internal common areas in the development. Provisional assessments will be carried out prior to commencement of the development on site to ensure full compliance is achieved for each building type.

The exact specification, including technologies used, will be determined at detailed design stage, to achieve an A2 BER rating for each apartment.

To demonstrate that an acceptable primary energy consumption rate has been achieved, the calculated Energy Performance Coefficient (EPC) of a building should be no greater than the Maximum Permitted Energy Performance Coefficient (MPEPC). To demonstrate that an acceptable CO₂ emission rate has been achieved, the calculated Carbon Performance Coefficient (CPC) should be no greater than the Maximum Permitted Carbon Performance Coefficient (MPCPC).

4.5 Detailed Design

The dwellings shall include several energy conservation measures to achieve a high energy rating for each property, including

- High-performance thermal envelope with low U-values
- Airtight construction
- Ventilation system
- Heat Pump (HP) Technology
- Energy efficient lighting to be provided where appropriate

The sustainable design of the proposed development ensures that each unit in the development performs efficiently and complies with NZEB criteria. The sections below outline the elements (based on passive and active measures) that aid in the reduction of energy consumption, carbon emissions and cost throughout the building lifecycle. The table at Section 4.6 below also provides information to be used in the DEAP assessment for each specific unit in the development:



4.6 High Performance Construction Fabric

The construction U-values for each dwelling within the development is outlined in the Building Regulations Technical Guidance Document – Part L 2022 (Dwellings).

The design is based on the following outline specifications:

U-Values	Part L 2022 (Dwellings) Compliant Values
Ground floor area weighted average U-value	≤ 0.12 W/m ² .K
External roof area weighted average U-value	≤ 0.14 W/m ² .K
External wall area weighted average U-value	≤ 0.18 W/m ² .K
Window area average U-value (incl. frame)	≤ 1.40 W/m ² .K
Door area average U-value	1.0 W/m ² .K
Vertical glazing total solar transmittance (g-value)	≤ 0.6 (Typical value assumed)
Glazing light transmittance	70% (Typical value assumed – to be confirmed)

High-performance building fabric elements are being considered and selected to minimise unnecessary heat loss from the internal spaces. In addition to the reduction in energy consumption and associated carbon emissions for space heating and ventilation through a high-performance fabric, high efficiency heating systems are being proposed for use throughout the development.

High performance energy systems in combination with minimised heat losses through the building's fabric and a lower than required air permeability rate, helps to ensure lower energy consumption rates and thus reduces the overall cost of heating for the end user.

4.7 Airtightness

The building will be designed to ensure it will achieve compliance with the air tightness requirements outlined in the Part L (2021) TGD document. The current proposal for air tightness in the Part L document is set to a maximum value of 5.0 m³/hr/m² @50Pa. A reasonable target value for these buildings, based on other recently completed housing schemes, would be ≤2.5 (m³/ (hr.m²)) at 50 Pa.

4.8 Thermal Bridging

The limitation of thermal bridging will be achieved in accordance with guidance outlined in the Technical Guidance Document Part L (2022) regulations. This will be achieved by adherence to the Building Regulations Part L Acceptable Construction Details or by thermal modelling of junctions to demonstrate compliance, and will be closely monitored during the construction.



4.9 Ventilation

Natural ventilation is being evaluated as a ventilation strategy to minimise energy usage and noise levels. The benefits of natural ventilation include:

- Low noise impact for occupants and adjacent units.
- Completely passive.
- Minimal maintenance required.
- Reduced environmental impact as minimal equipment disposal over life cycle.
- Full fresh air resulting in healthier indoor environment

Natural ventilation is being considered for use in the proposed development to provide sufficient controlled ventilation. Appropriate background & purge ventilation facilities will be provided as per TGD Part L & F.

To maintain indoor air quality and minimize the risk of condensation or mould growth, a demand control ventilation system will potentially be provided for each apartment/house/unit to help achieve this. A DCV system will automatically regulate airflow to meet the exact need at a given time. It consists of sensors which continuously measure and monitor indoor air quality and provide information to a controller. The controller sends this information to ventilation fans and adjusts the rate of ventilation according to the demands of each room.

Refer to JV Tierney's Climate Action and Energy Statement for further details of the proposed ventilation strategy for compliance with Part L 2022 Dwellings for the apartments and houses. The strategy will be analysed and reviewed in the detailed design phase and with the preferred choice will be designed in compliance with TGD Part F. The final selection and combination of technologies will most likely be selected based on a more in-depth technical and financial appraisal of the technologies which will be carried out during detailed design.

4.10 Heating Systems

It is envisaged that space heating will potentially be provided by a decentralised system with air to water heat pumps or exhaust air heat pumps within each dwelling. The dwelling shall be heated by means of steel panel radiators. In addition, electrical radiant panel heaters shall be considered for use within the landlord areas.

To meet compliance with the renewable energy requirements set out in Part L, a heat pump with the appropriate seasonal efficiency for space and water heating will be considered for all dwellings. For compliance for the landlord areas, a photovoltaic, PV system for on-site electricity use will be considered as part of the detailed design.

Modern heat pumps will typically provide 4 to 5 times more heat energy to the dwelling than the electrical energy they consume. They have a lower consumption of energy and therefore lower carbon emissions.

Refer to JV Tierney's Climate Action and Energy Statement for further details of the proposed heating systems/strategy for compliance with Part L 2022 Dwellings for the apartments and houses. The strategy will be analysed and reviewed in the detailed design phase and with the preferred choice will be designed in compliance with TGD Part F. The final selection and combination of technologies will most likely be selected based on a more in-depth technical and financial appraisal of the technologies which will be carried out during detailed design.



4.11 Renewable Technologies

To comply with building regulations, 20% of the primary energy delivered to a dwelling must be achieved using renewable energy technologies. The following Low Zero Carbon (LZC) technologies shall be considered for the development

Individual Air Source heat pumps.

Individual Exhaust Air Heat Pumps

Photo voltaic, PV system for on-site electricity use

Air Source Heat Pumps, Exhaust Air Heat Pumps and PV panels systems are classified as renewable technologies under Part L. Refer to JV Tierney's Climate Action and Energy Statement for further details of the proposed renewable technologies strategy for compliance with Part L 2022 Dwellings for the apartments and houses. The strategy will be analysed and reviewed in the detailed design phase and with the preferred choice will be designed in compliance with TGD Part F. The final selection and combination of technologies will most likely be selected based on a more in-depth technical and financial appraisal of the technologies which will be carried out during detailed design.

4.12 Lighting

Provision for natural daylight in buildings helps to create a better internal environment for occupants and helping to assist in the well-being of the inhabitants. The careful design of façades allows greater levels of natural daylight to enter occupied spaces.

Each building will be fitted with high-performance energy efficient light fittings, such as LEDs. LED lighting consumes the least amount of power while providing the highest light output and is therefore the most efficient source of artificial light. Combined with a long lifespan this minimises whole life costs and reduces the carbon footprint of each home. LED technology results in 30-35% reduction in electrical energy usage over the CFL equivalent.

Intelligent lighting controls in the form of presence detectors shall be used in common areas to ensure that lighting is not in operation when areas are not in use.

Street Lighting and Amenity Lighting shall be as per the proposed JV Tierney design that must be approved by FCC Public Lighting Section. The Public Lighting design have been undertaken to demonstrate the levels achieved and have been coordinated with the Landscape design. Where practical, streetlights shall be chosen to match existing streetlights in the area to maximise the service levels that can be provided by FCC.

4.13 Water Conservation Measures

The requirements for Low flow sanitary ware (circa 6 ltrs/min) in each dwelling shall be considered in the detailed design stage. This is a water conservation initiative and reduces waste by restricting water flowrates to a shower within the dwelling. The shower head fittings could be provided with a reduced flow to allow for water use conservation and reduce energy used to heat hot water. Dual flush toilets shall be provided to reduce overall water use.



4.14 Landscaping

High quality landscape design strategies and the use of robust materials are employed to minimise ongoing maintenance and ensure the costs to the residents are reduced. See Landscape Architects’ report for further detail.

MEASURE	DESCRIPTION	BENEFIT
Natural Amenity	Landscaped areas to be created as part of landscaping design, with existing trees and hedgerows retained where practicable.	Facilitates community interaction, socialising and play resulting in improved well-being of residents
Landscaping	Detailed landscape design included as part of this package. Planting proposals intended to complement the local setting and be fit for private and public realm uses. Pollinator friendly native trees and planting shall be incorporated.	Reduction in frequency and associated maintenance costs.
Permeability	Cycle and Pedestrian permeability prioritised throughout the development with generous links toward neighbouring residential areas, community facilities to the North and the emerging transport and travel infrastructure.	Facilitates improved well-being of residents and promotion of a less car dominated lifestyle and neighbourhood.
Paving & Decking Materials	Sustainable, robust materials, with high slip-resistance to be used. Design to incorporate principals of SUDs to aid on site attenuation. Tree pits and swales to reinforce SUDs objectives.	Robust materials and elements reduce the frequency of required repair and maintenance
Maintenance & Management	Maintenance and management requirements have been considered throughout the design process. Complex planting arrangements have been omitted to avoid onerous maintenance and management requirements	Maintenance costs reduced





4.15 Waste Management

MEASURE	DESCRIPTION	BENEFIT
Operational Waste Management Plan	Operational Waste Management Plan, prepared by AWN. Operational Waste management details are included.	The report demonstrates how the scheme complies with best practice and how waste will be minimized and managed upon its completion and occupation.
Storage of Non-Recyclable Waste and Recyclable Household Waste	The domestic waste management strategy will include: <ul style="list-style-type: none"> - Centralised bin storage and collection area for apartments - Separate grey, brown and green bin. - Regular competitive tender for waste management collection. 	Helps reduce potential waste charges
Composting	Organic waste receptacles to be provided in the shared WSAs. Residents in houses and the Crèche will provide their own organic waste receptacles.	Helps reduce potential waste charges and compliance with national policy and legislation regarding segregation of biodegradable waste
Resource Waste Management Plan	The application is accompanied by a Resource Waste Management Plan, prepared by AWN.	The report demonstrates how the scheme complies with best practice during the construction stage.



4.16 Estate Management

Fingal County Council owns and manages many properties throughout various areas of the county. The Council recognises that it has a duty of care to promote the peaceful and enjoyable occupation of all dwellings.

Social Housing

Estate Management is primarily about making local authority housing better places to live in. Fingal County Council recognises the importance of resident and tenant participation in estate management and is committed to working in partnership with residents and tenants to promote estate management in their estates.

The Council employs Housing Liaison Officers (HLO's) who each deal with their own designated area of the county, and carry out a range of services, including;

- Advice to Tenants on all details of their tenancy and house management
- Development of Residents Associations
- Assist in problems which may occur in estates
- Investigate complaints of anti-social behaviour

Fingal County Council encourages and facilitates the formation of Residents Associations, and where problems in estates are reported through the Residents Association or otherwise, the Council will also utilise all legislative means available, and a multi-agency approach with the Gardai Siochana and HSE, to combat any instances of anti-social behaviour. All reported incidents are dealt in confidence and investigated in a fair, impartial and objective manner.

MEASURE	DESCRIPTION	BENEFIT
Housing Liaison Officer and Residents Associations	Provides advice to Tenants on all details of their tenancy and house management. Assists in development of Residents Associations. Assists in problems which may occur in estates, and investigates complaints of anti-social behaviour.	Residents are informed and can be assisted when issues arise
Tenants' Pack	A Tenants' Pack prepared by FCC Housing Maintenance Department will be provided to each resident. This will typically provide a range of detail including information on contacts for maintenance issues, emergency contact information, transport links in the area and a clear set of rules and regulations.	Residents are as informed as soon as possible so that any issues can be addressed in a timely and efficient manner.
Tenant Induction and Handover Pack	Tenant induction courses are held for all tenants before they move in and a handover pack will be issued to new residents. This pack will contain essential information regarding the new home, including: GPRN, MPRN, Contact details for all relevant suppliers, and user instructions for appliances and devices in the property.	Residents are as informed as soon as possible so that any issues can be addressed in a timely and efficient manner.



Affordable Housing

These homes are private sales to the market and the Council will not be involved once these properties are sold. The developer must comply with their obligations under the [Multi-Unit Developments Act 2011](#).

Measure	Description	Benefit
Handover pack	A handover pack will be issued to new homeowners. This pack will contain essential information regarding the new home, including: GPRN, MPRN, Contact details for all relevant suppliers, and user instructions for appliances and devices in the property.	Homeowners are as informed as soon as possible so that any issues can be addressed in a timely and efficient manner.

