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Fortfield Road, Terenure

Building Lifecycle Report

1 Celbridge West Land Limited

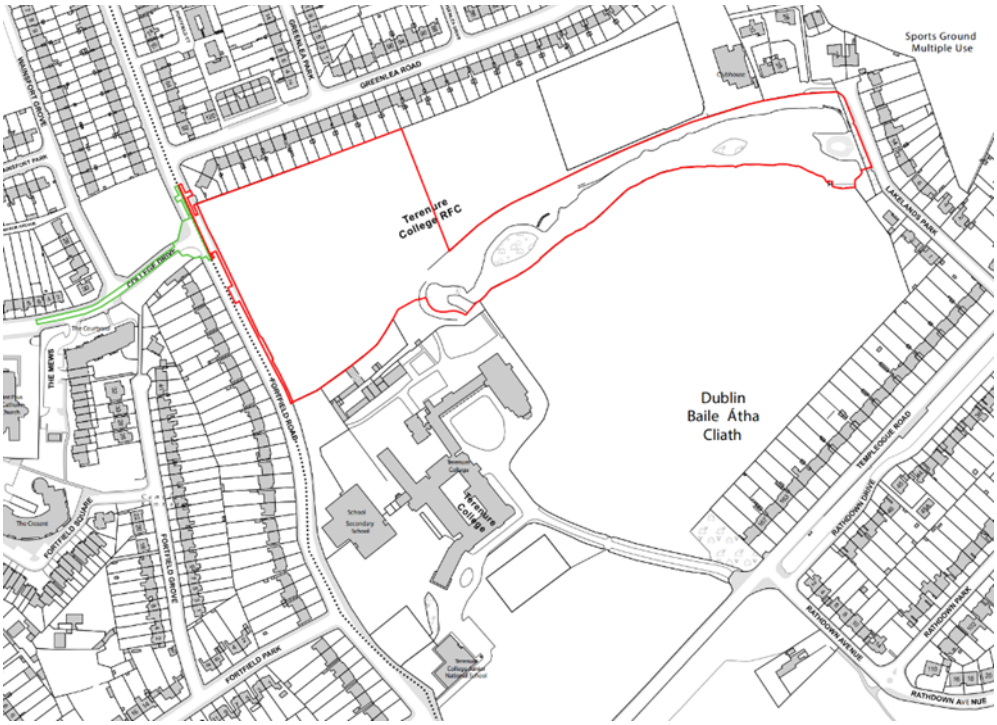
September 2024

Contents

1. Introduction

1.1 Report Content / Overview

This report has been prepared by GAA on behalf of the applicant, 1 Celbridge West Land Limited in relation to the 'Fortfield Road' development in Terenure. 1 Celbridge West Land Limited is applying for a pre-application consultation on a site at Fortfield Road, Terenure, Dublin 6W. The site is located on the grounds of Terenure College Senior School, a Voluntary Catholic School under the Trusteeship of the Carmelite Provence Order, in the north side of Fortfield Road between Greenlea Road and College Drive.



1.2 GAA Overview

GAA provides asset management and advisory services to the housing sectors, bringing 35+ years of housing industry expertise, including direct experience on large-scale real estate schemes.

GAA offers a wide range of advisory services with very deep expertise in the operations and property management aspect of the sector. This includes working with developers and their teams to focus on building specification with an eye on long term maintenance and generating operational cost efficiencies.

GAA's clients include many of the world's leading real estate institutions.

1.3 Report Purpose

The purpose of the report is to provide a high-level summary of the management and long-term approach to the maintenance at the site, the 'building lifecycle report'. This is required by the Department of Housing, Planning and Local Government in accordance with the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities published in July 2023, and specifically section 6.13 which states:

"Accordingly, planning applications for apartment development shall include a building lifecycle report which in turn includes an assessment of long-term running and maintenance costs as they would apply on a per residential unit basis at the time of application, as well as demonstrating what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents."

This document provides insights to the specification and strategy for the lifecycle and long-term maintenance at Fortfield Road, including the implementation of the design and material principles which have informed the design of building roofs, façades, internal layouts and detailing of the proposed development.

The building materials/specifications in this report are based on information provided to GAA. As the construction contract tendering process commences, there will, be continued refinement of the specifications and approach to maintenance. This will, in part, be predicated on new system/technology becoming available but also in response to post Covid-19 building maintenance and management requirements/best practice.

The choice of high quality, robust and long-lasting materials, such as brick and metal cladding and PPC coated aluminium windows and curtain walling as the predominant façade materials, with contrasting render finishes to smaller and more private areas of the façades, has been appropriately specified, and will not need regular fabric replacement or maintenance outside general day to day care, such that it will contribute to lower maintenance costs for the owners.

1.4 Property Management Approach

The operating costs of the estate will be borne by the homeowners and will be charged to the owners by way of an annual service charge.

As such, there is interest in creating a development that is easy to maintain and operationally cost efficient, as well as providing attractive buildings to the homeowners to reside in.

1.5 Wider Team

This report has been complied with input from the following consultants:

- MCG Planning (Planning and Development Consultant)
- Turley (Planning and Development Consultant)
- Urban Agency (Architects)
- PUNCH Consulting Engineers (Civil & Structural Engineer and Traffic Engineer)
- OCSC (M&E) Ltd (M&E Consultant)
- NMP (Landscape Architect)
- OCSC (M&E) Ltd (Daylight/Sunlight and Overshadowing)
- OCSC (M&E) Ltd (Wind Microclimate Assessment)
- John Olley (Historic Landscape Consultant)
- Moore Group (Cultural Heritage Consultant)
- AWN Consulting (Waste Management and Noise Report)

2. Proposed Development

2.1 Site Location and Context

The site is located in the south Dublin suburb of Terenure, approximately 1km south-west of Terenure Village, to the eastern side of Fortfield Road. The site spans approx. 4.64 hectares and is situated in the grounds of Terenure College Senior School, a Voluntary Catholic School under the Trusteeship of the Carmelite Provence Order. These lands comprise the school grounds and adjoining lake surrounded by a wooded area and a number of playing pitches. The open space to the north of the school grounds, previously in use as playing pitches, are no longer required by the school, and it is proposed that this area be developed to provide a number of residential units and associated public open space while the area around the lake will be enhanced to create a public park.

The site is surrounded by the established residential areas of Fortfield Road, Greenlea Road, Templeogue Road and Lakelands Park comprising of mainly semi-detached and terraced houses. Local building heights are generally two storeys in the case of the Fortfield Road and Greenlea Road, with three/four storeys in the case of Terenure College buildings.

The site is well served by public transport with a number of bus routes available within walking distance, ranging from 1 to 10 minutes' walk. As such, the proposed site represents an opportunity for a sustainable infill development. The site backs onto the Greenlea Road housing to the north and has strong frontage to Fortfield Road to the west. To the east and south the site shares a boundary with the playing fields and Terenure College buildings.

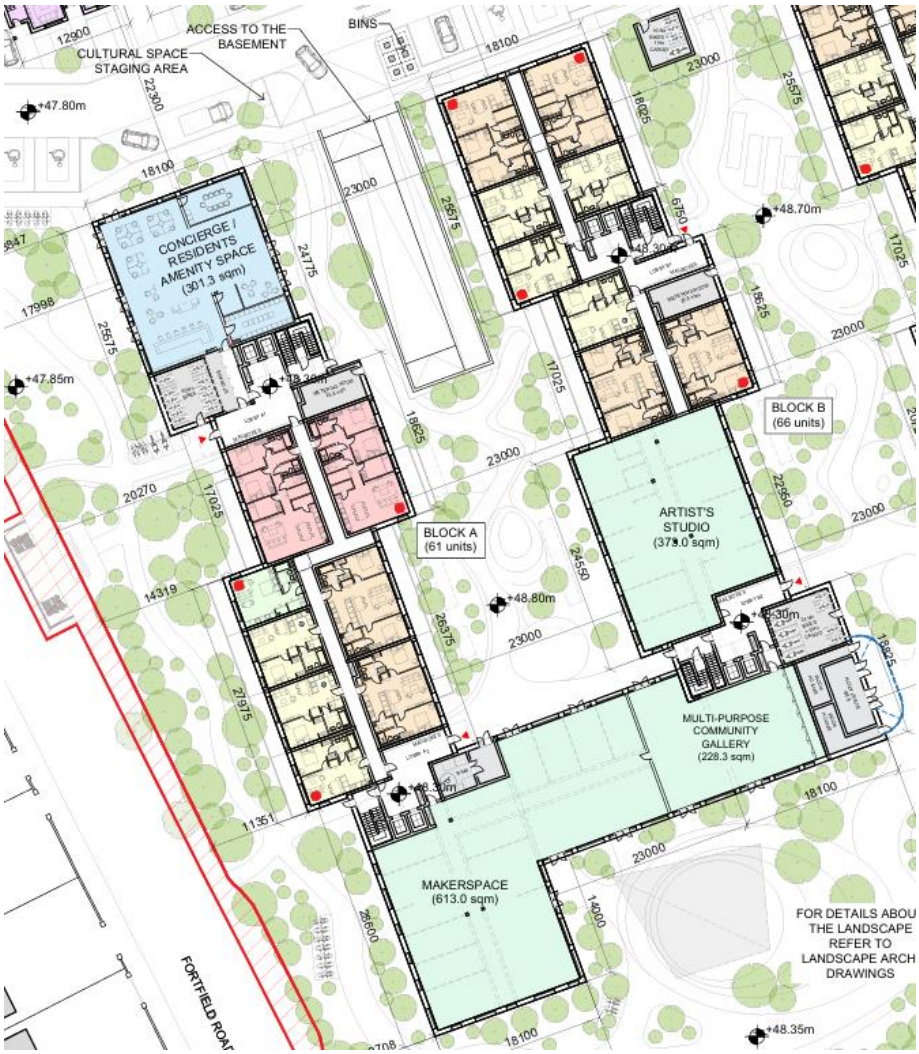
At a 10-15 minutes walking distance from the site, the area presents a good variety of services as supermarkets, restaurants and pubs, schools, as well as a rugby football club adjacent to the development lands. A large green area is found at walking distance from the lands, with recreational activities and kids' playgrounds.

As a result of its location, and proximity to excellent existing education, retail and community amenity facilities, as well as excellent public transport, it is a desirable site for residential development at an appropriately high density.

2.2 Development Description

The development will comprise a Large-Scale Residential Development (LRD) on a site at Fortfield Road, Terenure of 284 no. units delivering 19 no. houses and 265 no. apartments made up of studios; 1 beds; 2 beds; 3 beds; and 4 beds. The development will also provide community, cultural and arts space and a creche. Communal internal space for residents will also be delivered. Provision of car, cycle and motorbike parking will be provided throughout the development, including at basement and surface level. Vehicular/pedestrian/cyclist access from Fortfield Road. Proposed upgrade works to the surrounding road network is also included. All associated site development works, open space, services provision, ESB substations, plant areas, waste management areas, landscaping (both public and communal) and boundary treatments.

Internal Resident Amenities:



External Communal Open Space:

Facilities and amenities for the homeowners is as follows:

INTERNAL COMMUNAL AMENITY SPACE (for residents only) (sq m)	
CONCIERGE AREA	38.4
LOUNGE	48.6
CO-WORKING SPACE	77.8
MEETING ROOM	26.5
MULTIPURPOSE ROOM	70.6
PARCEL ROOM	23.7
WC	7.9
TOTAL NET AREA	**293.5**
TOTAL GROSS AREA	**301.3**

EXTERNAL COMMUNAL OPEN SPACE (sq m)	
GROUND FLOOR	3,362.6
ROOF TOP	1,129.6
TOTAL COMMUNAL OPEN SPACE	**4,492.2**

ART/CULTURAL SPACE (for the community) (sq m)	
INTERNAL AREA (BLOCKS A, B AND PAVILION)	1214.6
EXTERNAL AREA	199.0
TOTAL AREA	**1,413.6**

3. Measures to Manage and Reduce Long Term Costs

3.1 Specification of Materials and Landscaping

3.1.1 Introduction

The development team will have a very active role in the choice of specifications of flooring, finishes, appliances, lighting and other fixtures and fittings to ensure these products are robust and warrant low maintenance. Albeit, without seeking to over sacrifice aesthetics and the need to create a warm and inviting home for the future homeowners at Fortfield Road.

Within this, the team are equally cognisant of the need to ensure 'easy replacement' of items with wear and tear. This might include the use of carpet tiles over long lengths of carpet and wall corner protectors.

Further consideration to the design of building is critical to the long-term operational success of the estate. The team is working closely with the architects and contractors to consider all aspects of the development for long-term maintenance.

3.1.2 Schedule

The table below outlines measures related to the specification of materials and landscaping that have been incorporated into the Fortfield Road development to manage and reduce the long-term costs for homeowners.

Item	Description
Cladding	The selected cladding façade materials are mostly selected brick finish and render, as well as occasional metal cladding. ▪ **Brick:** Brick finish will have a long-life expectancy. ▪ **Maintenance:** Very low/minimal. ▪ **Render:** Render finish will have a long-life expectancy. ▪ **Maintenance:** Low/minimal. ▪ **Metal cladding system:** Powder coast aluminium cladding or other equivalent and approved and will have a long-life expectancy. ▪ **Maintenance:** Low/minimal.
Windows & Curtain Walling	Fortfield Road will be constructed using high quality Aluclad thermally broken double-glazed windows, doors and curtain walling systems which will be low maintenance. ▪ **Windows:** Windows will be Aluclad window with timber finish internally and powder coated aluminium finish externally and will meet or exceed building regulation requirements, glass will have a high level of transparency to ensure good daylight transmission. All opening windows will be fitted with suitable restrictors. ▪ **Maintenance:** Regular glass and aluminium cleaning regime and check for damage or maintenance of moving parts and seals etc. ▪ **Curtain Walling:** Curtain walling will be PPC aluminium and will meet or exceed building regulation requirements, glass will have a high level of transparency to ensure good daylight transmission. ▪ **Maintenance:** Regular glass and aluminium cleaning regime and check for damage or maintenance of moving parts at vents and seals etc.
Green Roofs/ Bio-retention Areas	It is proposed to provide a large extent of green and blue roof systems within the proposed development. Green/blue roofs have been designed taking guidance from CIRIA Publications C644 – "Building Greener", C697 – "The SUDS Manual", and the Green & Blue Roof Guide 2021 produced by Dublin City Council. Extensive green roof areas typically contain vegetation such as sedums and small grasses, which require less maintenance than other green roof types, and no permanent irrigation system. The topsoil substrate depth is approximately 100mm. The green and blue roofs will improve water quality, reduce the quantity of water being discharged from the site, offers an amenity to residents and offers a biodiversity element to the site also (addressing the four pillars of SuDS design for the site).

	The green/blue roof areas proposed have been maximised, considering requirements for M&E plant at roof level. At upper roof level where there are areas that have not been covered with an extensive green roof system, the surface water from these areas will be conveyed as far as possible to discharge to the extensive green roof. The overall site coverage for green/blue roofs and soft landscaped areas (at podium level and upper roof level) will be greater than the minimum requirement as per the Green & Blue Roof Guide 2021 produced by Dublin City Council. Assuming 5% of the substrate depth is available for water storage, the green roofs shall provide interception storage for the first 10mm of rainfall, as required by the GDSDS criteria for River Water Quality Protection. A breakdown of the green/blue roof areas is illustrated in PUNCH drawings 222102-PUNCH-XX-XX-DR-C-0151 – 0152. The green roof area is a mixture of extensive and intensive areas. The proposed blue roof areas will comprise a blue roof attenuation cell with associated intensive landscape being placed on top of it. The roof over Blocks B & C is proposed with a large portion of communal terrace areas. The total roof coverage is equal to 75.3% and therefore, in accordance with the Green & Blue Roof Guide 2021 produced by Dublin City Council the proposed development has achieved the required 70% extensive green roof for the total roof area. Please refer to the PUNCH Engineering Planning Report and the associated SuDS plan drawing for details of the intensive green roof, extensive green roof and blue roof extents.
Balconies	Each apartment will have its own private balcony or terrace with a minimum depth of 1.5m. Balconies: Balconies will be made of painted steel, and they present painted steel railing or glazed balustrade. They will be thermally isolated from the main building. Maintenance: Regular glass cleaning and inspection for deterioration or drainage obstruction.
Hard Landscaping	The selection of hard landscape materials both at ground level and roof level is determined by function but also to provide a cohesive palette of materials throughout. Materials are chosen for durability, but, where practical, are to be constructed in a way which is sensitively integrated with lawn and soft landscape in order to minimise the impact of hard landscape surfaces. Primary vehicular, pedestrian and cycle circulation are proposed as a durable material with robust construction. Typically, in the routes between the blocks, a 3.7m wide fire tender route is to enable up to 20m from the dry risers where relevant and also ESB access. This route also loops around the development to the access road. It will be constructed of a fragmented paving. This allows for permeability of run off rainwater, whilst allowing small plants to grow between crevices on the margins of the 3.7m wide route – creating a sense that it is not as wide as it appears. Self-binding gravel and large format reconstituted stone slabs are proposed for pedestrian routes in open space with key core public open spaces in a high-quality paving. All materials will be designed to a high standard, will be robust and withstand a long-life, as well as meet the BCAR standard, where required. All areas will be designed to facilitate universal access to all users and gradients have been worked out accordingly. Furniture and equipment (e.g. play, exercise, fencing etc.) will be durable and robust with multifunctional uses with soft pour at play and exercise areas to enable play for all, whilst promoting natural play. The use of robust high-quality paving materials at Fortfield Road is intended to provide materials that reduce the need for ongoing maintenance costs.

	Other materials, such as for play, seating, fencing etc, are sustainable and robust material types that are designed to reduce the frequency and need for repair and maintenance over time at the Fortfield Road development.
Soft Landscaping	The landscaped courtyards and roof terraces will incorporate dense planting, with planter boxes for residents on the roof terrace where vegetables and herbs can be grown, including green houses. There will also be a soft landscaped green buffer zone and pedestrian footpaths. All proposed planting species have been selected based on their suitability for the location. Native plants have been included where suitable to assist in improving urban biodiversity and diversify the pollination ability within Ireland in accordance with the All-Ireland Pollinator Plan. All planting will be provided with the suitable depth of topsoil and will provide adequate growing space for planting. All landscaping will be implemented and maintained in accordance with the maintenance and management schedule. The soft landscaping at Fortfield Road should be appropriate to the location and be able to be maintained and managed at reasonable cost.
Energy Efficient Appliances	All built-in appliances will be sourced with energy efficiency and long-term reliability in mind. This will reduce the energy consumption and costs to the residents at this development.

3.2 Energy and Carbon Emissions

The table below outlines measures related to energy and carbon emissions that have been incorporated into the Fortfield Road development to manage and reduce the long-term costs for residents.

Item	Description
BER Certificates	A Building Energy Rating (BER) certificate will be provided for each dwelling in the proposed development which will provide detail of the energy performance of the dwellings. A BER is calculated through energy use for space and hot water heating, ventilation and lighting and occupancy. The target BER for Fortfield Road is to be minimum A3 rated. Lower BER ratings reduce energy consumption and running costs.
Building Thermal Transmittance (U-Values)	The U-values should be in line with the requirements set out by the current regulatory requirements of the Technical Guidance Documents Part L, titled 'Conservation of Fuel and Energy Buildings – Dwellings' and 'Conservation of Fuel and Energy Buildings – Buildings Other than Dwellings ' Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance with the Technical Guidance Document Part L. • External Walls: 0.18 $W/m^2.K$ • Flat Roof: 0.18 $W/m^2.K$ • Pitched Roof:0.16 $W/m^2.K$ • Ground Contact & Exposed Floor: 0.18 $W/m^2.K$ (0.15 if underfloor heating installed) • External Windows, Roof-lights & Doors: 1.40 $W/m^2.K$ Lower U-values and improved air tightness at Fortfield Road will help minimise heat losses through the building fabric, lower energy consumption and minimise carbon emissions to the environment

Air to Water Domestic Hot Water Pump (per apartment)	Air to Water Domestic Hot Water pumps will be provided within each apartment unit for the production of domestic hot water with electric heating for use in standalone blocks, with Air Source heat Pumps (ASHPs) to be placed within the townhouse units. These systems using a refrigerant cycle, raise the temperature of the heat energy using a refrigerant vapour compression cycle. Heat pumps use electrical energy from the grid to drive the refrigerant cycle but do so extremely efficiently. The heat pumps will be located within a utility store in each apartment and ducted to external façade. Keeping the units local will reduce the need for large central plant areas, reduce riser spacing as less services to each apartment. Modern heat pumps will typically provide 3 to 4 times more heat energy to the dwelling than the electrical energy they consumer.
Thermal Storage	An internal cylinder within the heat pump will maximise the efficiency of the Heat Pump and optimise the Electricity Tariff available.
Centralised Plant	Centralised plant will consist of cold-water storage. This will be located within a Format 30 tank, either at grade or in basement plantrooms, and boosted to each block to serve each apartment. Each apartment will be fitted with an individual water meter to measure consumption. It is proposed that a sprinkler tank will also be provided alongside cold-water storage and pressurised to serve each apartment block. The sprinkler will be designed to residential standards BS9251. Individual ESB meters (in switch room/sub-station arrangement) will be installed for each apartment. As the heating plant is local to each apartment, there is no district network distribution, therefore reducing external civils works and central plant space.
Heat Recovery Ventilation units	Heat recovery ventilation units providing fresh air and extracting stale air from apartment maintaining good air quality throughout the apartments. Centralised mechanical ventilation will be provided to all dwellings to ensure that the air quality within the dwellings will be adequate. The inclusion of heat recovery ventilation into the centralised ventilation system in order to minimise the energy usage within the dwelling. Heat recovery ventilation will be used for Fortfield Road to provide ventilation with low energy usage and ensure a continuous fresh clean air supply. Heat recovery ventilation will also be incorporated into the tenant amenity space. These will have local heat recovery units (HRU) within the ceiling void of the space and ducted to external façade louvres.
Photovoltaics (PV) or Solar Panels	No solar panels are being proposed for the residential aspects of the development. However, a token allocation of PV has been allowed for to certain aspects of the development, such as common access corridors.
Lighting	Internal light fittings will be standardised as much as possible to reduce the number of spare lamp and fittings that must be kept for maintenance. Low energy LED light fittings have been specified that will last longer, require less replacement activities and should result in lower running costs. The proposed external lighting scheme within the development will support the accessibility and use

	of the external and public realm space at Fortfield Road. Standardisation of light fittings in Fortfield Road, especially LEDs, will reduce the storage space needed and reduce the replacement activities. Low energy LED light fittings should result in lower running costs. PIRs will be used for all transient & BOH spaces which are seldom occupied. The site lighting for Fortfield Road has been designed to provide a safe environment for pedestrians, cyclists and moving vehicles, to deter anti-social behaviour and to limit the environmental impact of artificial lighting on existing flora and fauna in the area. Photocells will be incorporated into the external lighting to help reduce operating hours of lights.
Electric Car Charging Points	The development will include EV charging points within the resident's car park to cater for E-car demand of the residences. EV charging infrastructure will be provided for 100% of parking spaces allocated to dwellings (19 no. EV spaces) and car share (10 no. EV spaces) and for 50% of all spaces serving apartment units (69 no. EV spaces). 100% of spaces proposed will be future proofed for electrical charging. A full re-charge can take from one to eight hours using a standard charge point. Future proofing of all car parking spaces to enable EV will be accommodated within the infrastructure. Providing e-car charging points will allow occupants of Fortfield Road to benefit from the ever-improving efficient electric car technologies.

3.3 Management/Operations Strategy & Maintenance

3.3.1 Introduction

The running costs at Fortfield Road will broadly comprise some the following expenses: from on-site staff costs, estate/common parts annual repairs and maintenance, utility costs, cleaning, landscaping and building insurance.

The maintenance of the property will be the responsibility of the property management company. Various low risk/manual maintenance jobs will be carried out on-site by qualified staff with appropriate health and safety training, whilst more technical roles will be outsourced and supported by appropriately qualified contractors.

The final costs associated for the running of the estate will be confirmed in the final months prior to practical completion of the development, as services are tendered for, and staff are recruited. A formal tender and hiring process will be undertaken by the property management team.

The property manager and on-site team will be responsible for the entire day to day running of the estate, including common parts and all amenities. They will work hand-in-hand with the corporate management team to coordinate the oversight of the third-party contractors servicing the fire safety system, lifts, plant and electrical equipment.

The combined team will ensure:

- Regular/annual tests and inspections, including all statutory testing, of equipment.
- Annualised budgets that capture all building running costs.
- Planned preventative maintenance strategies.

The table below outlines measures related to the operation of the facilities that have been incorporated into the Fortfield Road development to manage and reduce the long-term costs for residents.

Item	Description
Maintenance	An efficient, responsive and effective planned and reactive maintenance service will be provided, which is cost effective, based on statutory, sound technical and operational requirements and standards, and is sensitive to the built environment and operations of Fortfield Road. The annual maintenance is based upon the provision of a professionally managed maintenance service, including all regular and annual statutory tests and inspections, planned preventative maintenance in accordance with industry standards and a semi-comprehensive reactive maintenance. The maintenance service shall include a PPM service based on statutory requirements, area usage and best practice to provide Fortfield Road with an efficient and effective maintenance solution to maximise life expectancy of the building elements at an economic cost.
Cleaning	Fortfield Road will have a professionally managed cleaning service in place, either sourced externally or via directly appointed cleaning staff. Cleaning of the common parts will occur as required. The areas within the estate that this comprises include: ▪ Lobbies and common space ▪ Amenity spaces ▪ Exterior spaces, including windows and cladding and hard standing ▪ Car parking areas ▪ Refuse areas
Waste Management	An Operational Waste and Recycling Management Plan (OWRMP) has been prepared for the development. The plan will seek to ensure the development contributes to the targets outlined in the Regional Waste Management Planning Offices *National Waste Management Plan for a Circular Economy 2024-2030*. Mitigation measures proposed to manage impacts arising from waste generated during the operation of the proposed development are summarised below. All waste materials will be segregated into appropriate categories and will be stored in appropriate bins or other suitable receptacles in a designated, easily accessible areas of the site in accordance with the Dublin City Development Plan 2022–2028. All waste leaving the site will be recycled or recovered, with the exception of those waste streams where appropriate recycling/recovery facilities are currently not available. All waste leaving the site will be transported by suitable permitted contractors and taken to suitably permitted or licenced facilities. All waste leaving the site will be recorded and copies of relevant documentation maintained. Hazardous waste may be generated from WEEE, batteries, fluorescent tubes, and cleaning products. Any waste classed as hazardous will be required to be taken to a specialise waste company, e.g. Enva. See AWN's reports for further detail/full findings.
Replacement	Products and materials selected will be robust and long-lasting and look good throughout their life, in all areas of Fortfield Road, including: ▪ Cladding materials chosen for Fortfield Road have expected lifecycles of over 50 years. ▪ Finishes to internal lobby, circulation areas and communal spaces will be hard-wearing and slip resistant. ▪ Materials to external spaces will be self-finished and robust to reduce maintenance and replacement. ▪ Choices for M&E plant and equipment, such as central air source heat pump and centralised plant, have been made with a focus on the lifecycle value. Replacement activities at Fortfield Road will be kept to a minimum by the choice of high durability materials and equipment/components with long life cycles.

Utility Use	All utility costs will be paid for by the homeowners individually. Where possible, each house/apartment will be provided with individual smart meters. Where possible, the development will incorporate low energy light bulbs and movement sensors to switch off lights once spaces are out of use. Where possible, water reduction measures will be implemented, such as tap aerators/flow restrictors, eco shower heads, water displacement bags in toilets.

3.4 Wellness, Sustainability, Accessibility and Transportation

The table below outlines measures related to wellness that have been incorporated into the Fortfield Road development to manage and reduce the long-term costs for residents.

Wellness can comprise physical, mental, emotional and social health factors, which all support personal happiness.

Item	Description
Resident Amenity Spaces	There are a number of resident amenity spaces areas provided at Fortfield Road as set out in Section 2.2. The range of activity and usability areas incorporated into the Fortfield Road development will promote wellness and resident engagement and the formation of communities.
Travel Plan	The overall aim of the Travel Plan for the proposed development is to minimise the proportion of single occupancy vehicle trips, including commuter-based trips, which have the greatest influence on traffic congestion, as well as leisure trips. The Travel Plan for Fortfield Road will promote health, social and economic benefits of sustainable travel including: ▪ To encourage/increase the use of public transport, walking and cycling for residents, staff and visitors. ▪ For work-related travel to facilitate travel by bicycle, bus and train. ▪ To reduce the overall number of single occupant vehicles trips for all journeys and, in particular, to work and work-related travel. ▪ To integrate mobility management into the development decisions, policies and practices to work closely with governing bodies on means and use of transport services around the vicinity of the development site. ▪ To provide information and have resources readily available to increase awareness and continue education on sustainable modes of travel for both residents, staff and visitors to the development. ▪ To increase car-pooling as much as possible. The Travel Plan specific to the nature and location of the development will consist of a package of sustainable measures aimed at increasing sustainable travel. These measures can include facilitating walking, cycling and car sharing schemes. Soft measures such as education, information and awareness can also be used. The Travel Plan will be developed further once the development is fully occupied. The new development will cater for both vehicular and pedestrian traffic and includes provision of generous bicycle parking. Measures laid out in the Travel Plan will aim to reduce the number of people travelling to the development by car, promote the use of public transport and encourage users to use more sustainable methods of travelling.

Personal Health & Fitness	Active travel, encouraged as part of the Travel Plan, enables people to enjoy health benefits as part of their daily routine. Choosing a sustainable travel mode can reduce the stress associated with commuting, bringing benefits to health, mood and job. Walking is, of course, free of charge and delivers additional health benefits and cycling can be undertaken at a very modest cost in comparison with car ownership. Additionally, the cost of running a car, particularly for short journeys, can be excessive after accumulating all costs, such as fuel, insurance, maintenance, breakdown cover. The measures implemented within the Travel Plan will raise awareness and support residents of Fortfield Road to become more active and through this to be healthier, fitter and more productive by encouraging physical exercise as part of residents' day-to-day travel behaviour. There are also added financial benefits to using sustainable modes of transport as opposed to private car trips.
Walking / Running / Site Accessibility to the Local Area	The site will benefit from several footpath loops around the development for those who seek to either walk or run within the confines of the area. These circuits also utilise the existing lake area. The centre of Terenure is approximately a 10-minute walk from the site, with Rathgar a little further on, therefore facilitating a higher proportion of retail trips being made by foot.
Open Space	In addition to the footpath around the estate, Fortfield Road will benefit from large green to its southeast corner and various pocket spaces, for the use of the residents and members of the general public to congregate in the summer or winter months. A dog park, exercise areas, sunken theatre, putting green and terraces/games areas will all be provided. The space will benefit from park benches and BBQ facilities. This 'park-esque' facility will be available to all residents of the development and visitors.
Car Parking	The 'Sustainable Urban Housing: Design Standards for New Apartments' (July 2023), Section 4.21 states the following: *"In larger scale and higher density developments, comprising wholly of apartments in more central locations that are well served by public transport, the default policy is for car parking provision to be minimised, substantially reduced or wholly eliminated in certain circumstances. The policies above would be particularly applicable in highly accessible areas such as in or adjoining city cores or at a confluence of public transport systems such rail and bus stations located in close proximity."* The 'Sustainable Urban Housing: Design Standards for New Apartments' (July 2023) defines three categories of locations. In the case of the proposed development at Fortfield Road, Terenure, Dublin 6W, it can be accurately identified as a ***'Central and Accessible Urban Location'***, defined as follows: *"Such locations are generally suitable for small to large-scale (will vary subject to location) and higher density development (will also vary), that may wholly comprise apartments, including:* • *Sites within walking distance (i.e. up to 15 minutes or 1,000-1,500m), of principal city centres, or significant employment locations, that may include hospitals and third-level institutions;* • *Sites within reasonable walking distance (i.e. up to 10 minutes or 800-1,000m) to/from high capacity urban public transport stops (such as DART or Luas); and* • *Sites within easy walking distance (i.e. up to 5 minutes or 400-500m) to/from high frequency (i.e. min 10 minute peak hour frequency) urban bus services."*

The conclusion that the site can be defined as an accessible urban or intermediate location is demonstrated by its location 0.5km from Bus Stop 1159 on Templeogue Road and the associated availability of high frequency bus routes, including the increased service capacity associated with the proposed 'Tallaght to Terenure' Core Bus Corridor route.

The applicable default policy in the case of Fortfield Road LRD is therefore for car parking provision to be **minimised, substantially reduced or wholly eliminated**.

The 'Sustainable Residential Development and Compact Settlements – Guidelines for Planning Authorities' (January 2024), Section 5.3.4 states the following:

"The availability of car parking has a critical impact on travel choices for all journeys, including local trips. With ongoing investment in active travel and public transport across all urban areas and particularly in our cities and larger towns, the number of locations with access to everyday needs and employment within a short walk or cycle or via a regular public transport connection is increasing all the time. In areas where car-parking levels are reduced studies show that people are more likely to walk, cycle, or choose public transport for daily travel. In order to meet the targets set out in the National Sustainable Mobility Policy 2022 and in the Climate Action Plan 2023 for reduced private car travel it will be necessary to apply a graduated approach to the management of car parking within new residential development.

The approach should take account of proximity to urban centres and sustainable transport options, in order to promote more sustainable travel choices. Car parking ratios should be reduced at all urban locations, and should be minimised, substantially reduced or wholly eliminated at locations that have good access to urban services and to public transport."

In accordance with the definitions outlined in the 'Sustainable Residential Development and Compact Settlements – Guidelines for Planning Authorities' (specifically Table 3.8), the Fortfield LRD is located within an **'Accessible Location'** given its proximity to a 'High Capacity Public Transport Node or Interchange'.

*"**High-Capacity Public Transport Node or Interchange***
Lands within 1,000 metres (1km) walking distance of an existing or planned high-capacity urban public transport node or interchange, namely an interchange or node that includes DART, high frequency Commuter Rail, light rail or MetroLink services; or locations within 500 metres walking distance of an existing or planned BusConnects 'Core Bus Corridor' stop..."

*"**Accessible Location***
Lands within 500 metres (i.e. up to 5-6 minute walk) of existing or planned high frequency (i.e. 10 minute peak hour frequency) urban bus services."

As a result, the default position per specific planning policy requirements (SPPR) 3 of the Guidelines is that car parking provision should be **substantially reduced**.

Therefore, in accordance with National Policy, it is an objective of the development (and associated Travel Plan) to limit the level of parking available on-site wherever possible in order to minimise and discourage dependency on private car travel.

Alternative sustainable transport option, most notably the provision of a high quantum of cycle parking facilities (including cargo bicycle facilities), are provided to offset the reduced quantum of car parking facilities.

Details of the proposals are outlined in the Travel Plan, Car & Cycle Parking Management Plan and Traffic and Transport Assessment.

There is a total of 165 no. parking spaces proposed as follows:

- 19 no. residential (houses) car parking spaces (at-grade, in-curtilage)
- 112 no. residential (apartments) car parking spaces (basement)

	• 10 no. Car Club parking spaces (at-grade) • 9 no. visitor car parking spaces (at-grade) • 7 no. disabled car parking spaces (at-grade) • 4 no. car parking spaces for the indoor cultural/art space (basement) • 1 no. car parking space for the creche staff (basement) • 2 no. creche drop-off car parking spaces (at-grade) • 1 no. delivery/service vehicle loading bay (at-grade) • 14 no. motorcycle spaces Apartment car parking is provided at basement level. 112 no. car parking spaces will be provided at this location. A further 19 no. standard parking spaces (10 no. for car club and 9 no. for visitors) and 7 no. disabled parking spaces are provided at grade within the development. A further 19 no. parking spaces are provided for the housing component in-curtilage. Please note that there also a dedicated drop-off/set-down space located proximate to the concierge, to accommodate servicing of the development. Please note that there also a dedicated drop-off/set-down space located proximate to the concierge, to accommodate servicing of the development. There are also 2 no. creche drop-off spaces provided proximate to the proposed creche. It is proposed to provide 1 no. car parking spaces for the creche staff within the basement parking facility. It is proposed to provide 4 no. car parking spaces for the cultural/arts space within the basement parking facility. Car parking spaces will not be allocated to individual apartments, but rather made available to residents as required. All spaces will be numbered. 10 no. parking spaces dedicated for car club use only are proposed for inclusion in the overall 157 no. residential apartment car space provision. Please note that GoCar have advised that 1 GoCar vehicle can replace up to 15 private cars. Applying this rationale results in an 'equivalent provision' of 147+(10x15) = 297 no. 'equivalent' private car spaces. This level of equivalent provision represents 105% of the quantum required under the DCC Development Plan parking standards. The 'equivalent parking provision' also equates to essentially 1.05 car parking spaces per residential unit (i.e. 278/265).
Car Sharing	Car sharing will be promoted through mobility management planning and use of the NTA car share portal. In order to reduce car usage consideration for car sharing would include: 1. Maintain an online database or a register including travel and contact details. 2. Implement and foster a Car Sharing Programme. 3. Match residents for car sharing and aim to match work schedules based on car sharing needs. 4. Reserve preferential parking for participating cars. The Mobility Manager would be the point of contact for parking issues. Please refer to the Travel Plan and the Letter of Intent received from GoCar. It is proposed to provide 138 no. car parking spaces for the residential apartment component. 10 no. parking spaces dedicated for car club use only are proposed for inclusion in this car space provision, all of which are located in the basement. Please also refer to the Car & Cycle Parking Management Plan for details of the proposed location of Car Sharing spaces within the basement.

Building & Unit Accessibility	All aspects of the development, internal and external (including apartments) will be adapted for use by all ages and demographics. All units will comply with the accessibility requirements as included in the building regulations. However, accessibility in the Fortfield Road apartments has been modified to better cater for all users, including: ▪ Larger turning circles incorporated in accessible units to facilitate electric wheelchairs. ▪ Doors and landings to bathrooms are modified to provide better access. ▪ Larger doors provided for access. ▪ Internal walls rationalised to remove nibs vulnerable to damage. ▪ Corridors straightened and reduced in size to provide better designs. 56% (159 no.) of the apartments are 10% bigger than the minimum standard. 77 no. units that are in excess of minimum sizes are designed as UD units (54% of the units that are required to be larger – 27% of the total number of units).
Cycling	At-grade cycle parking facilities are provided externally at ground level and distributed throughout the development extents. Cycle parking facilities are also provided at basement level. A total of 611 no. cycle parking spaces will be provided, consisting of 465 no. long term cycle parking spaces and 146 no. short term cycle parking spaces. This overall cycle parking quantum includes for 25 no. non-standard cycle facilities provided for resident use and 8 no. non-standard cycle facilities for visitors. In the case of the proposed Fortfield Road development, we will be achieving the following cycle parking quantum well in excess of the DCC requirement and in relative equivalence to the requirements of the 'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities (December 2020)'. It is proposed to provide 1 no. long term cycle parking space for the creche staff and 4 no. short term cycle parking spaces (including 2 no. non-standard spaces) adjacent to the creche. It is proposed to provide 4 no. long term cycle parking space for the cultural/arts space staff and 12 no. short term cycle parking spaces (including 1 no. non-standard spaces) adjacent to the cultural/arts space. See the PUNCH Travel Plan and Car & Cycle Parking Management Plan for details.

3.5 Building Design

Item	Description
Environmental Benefits	Environmental considerations include: a) **Surface water drainage:** A large emphasis has been put on the incorporation of Sustainable Drainage Systems (SuDS) throughout the development in the form of green roofs, blue roofs, permeable paving, tree root structural cell systems, swales, infiltration trenches and attenuation systems. These will have a significantly positive impact on the development by: ▪ Reducing the rate surface water discharged from the proposed development. ▪ Reducing the overall volume of surface water being discharged by the development through evaporation, transpiration, and infiltration. ▪ Increasing biodiversity. ▪ Increased amenity for future residents.

	b) **Traffic:** The proposed development will provide many options for future residents to choose sustainable forms of transport over private vehicle use. The proposed development is located in the suburban area of Terenure, Dublin. As the potential for pedestrian trips to and from the development is high, it is important that the development is properly integrated into the existing footpath network. There are footpaths already along both sides of Fortfield Road, as well as along Templeogue Road. The development is located c. 0.1km (1-minute walk) from bus stops on Fortfield Road with the 54A bus route servicing the stop. It is located c. 0.5km (6-minute walk) from bus stops on the Templeogue Road with key bus routes servicing the stop: 15, 49, 65, & 65B. It is approximately 4.2km (46-minute walk) from the Cowper Luas stop to the development and would take only 13 minutes by bicycle. The site is also in close proximity to several schools at various education levels. These are all within walking distance for parents and their children. University College Dublin (UCD) is 7.0km (85-minute walk) from the site and would take only 25 minutes by bicycle. The development is also located in close proximity to a number of health, leisure and recreational amenities which also offer sources of employment. The site is 1.0km (13-minute walk or 4-minute cycle) from Bushy Park. The site is 1.5km (17-minute walk or 5-minute cycle) from Rathfarnham Shopping Centre, which has a large Tesco Superstore. The site is 3.2km (27-minute walk or 10-minute cycle) from Rathfarnham Castle Park. The site is 3.9km (42-minute walk or 13-minute cycle) from the Castle Golf Club. The site is 4.5km (38-minute walk or 11-minute cycle) from St Luke's Hospital. In addition, a significant emphasis has been put on the inclusion of facilities to support bicycle use, which will greatly benefit future residents of the proposed development. Electric car charging points have been included in the proposed development. This will all help residents to choose sustainable forms of transport, reducing dependency on diesel and petrol vehicles.
Daylight	A Daylight report has been prepared by OCSC (M&E) Ltd to determine the level of daylight in the proposed apartments. This evaluation is focused on four apartment buildings – A, B, C & D, as well as the adjacent townhouses - testing the worst-case scenarios (Ground and First floor units). The purpose of this report is to verify that the proposed residential development achieves the minimum recommended daylight factors outlined in BRE guide 'Site Layout Planning for Daylight and Sunlight' (3rd edition), as well as requirements outlined in EN 17037: 2018 – Daylighting in Buildings. OCSC (M&E) Ltd. findings indicate that the vast majority of the living/dining rooms and bedrooms achieve daylight factors are above the recommended values stated in the BRE guide 'Site Layout Planning for Daylight and Sunlight' (3rd edition), as well as requirements outlined in EN 17037: 2018 – Daylighting in Buildings. Please refer to Daylight, Sunlight & Overshadowing study report prepared by OCSC (M&E) Ltd. For further information.
Sunlight	Sunlight availability to the amenity spaces was assessed against the BRE guideline criteria. BRE's 2022 guidance document 'Site Layout Planning for Daylight and Sunlight' states that for a space to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March. Amenity spaces in Fortfield Road achieve high levels of sunlight promoting health and well-being for residents. Please refer to Daylight, Sunlight & Overshadowing study report prepared by OCSC (M&E) Ltd. For further information.

Shadow	Shadow maps were generated to visualise any overshadowing to investigate whether buildings shade existing or proposed open spaces. As existing dwellings are not impacted by the proposed new development due to their distance from the site the report concentrates on the amenity areas within the development site. OCSC (M&E) Ltd has provided shadow maps showing the areas in shade at different times of day on March 21st, June 21st and December 21st to determine impacts and areas requiring further investigation. The results of the shadow path analysis carried out on 21st March demonstrate that following development there will be no adverse impact on surrounding dwellings or amenity areas and only transient overshadowing over amenity areas within the development. The available sunlight was then quantified in the sunlight analysis.
Wind	Urban building as well as landscape design strategies have been developed to respond to the existing environmental context challenges such as the prevailing winds, noise and pollution. At building level, strategically located protective screens have been designed to mitigate wind discomfort; 1.2m high screens to balconies and 1.8m high screens to roof terraces. Refer to OCSC (M&E) Ltd report for detail of Wind Impact Study.