Project:

Old Orchard LRD, Monaleen

Report Title

Engineering Services Report

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1.0 INTRODUCTION

OSL Butler Consulting Engineers (OSL) has prepared this Engineering Services Report on behalf of GLR Property Ltd., for a proposed Residential Development at Old Orchard, Monaleen, Limerick, County Limerick on a circa 3.6-hectare site.

Planning permission was previously granted for a residential development on this site comprising of 113no. residential dwellings and a creche under An Coimsiún Pleanála Reference *ABP 319009-24* (Limerick City and County Council Planning Reference 23/60842) and is currently under construction. This Engineering Services Report forms part of an amendment to the original permission, quoted before.

The site is located to the east of Limerick City Centre, centred at grid reference E: 562059, N: 655886 (ITM) as highlighted in Figure 1 below.

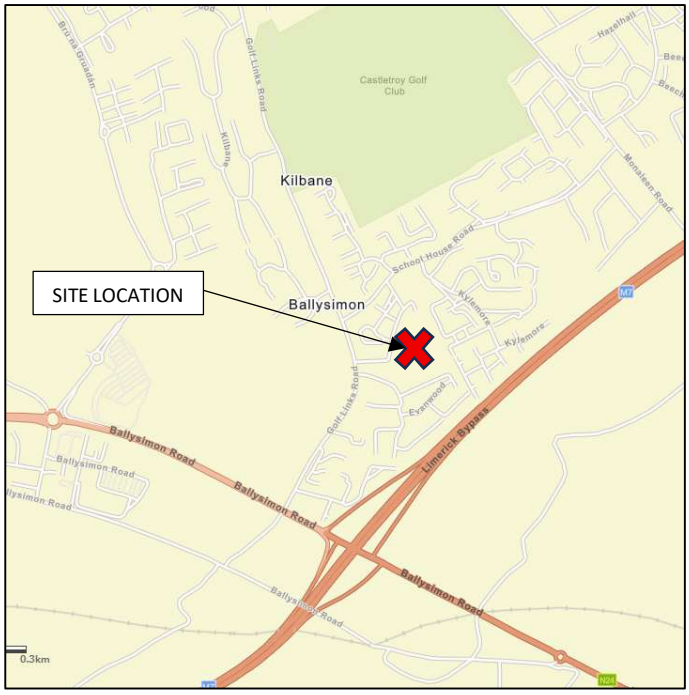

Figure 1: Site Location

To summarise;

'The proposed development comprises of the modification of the Large-Scale Residential Development granted under Application Ref. 23/60842 and Appeal Ref. ABP-319009-24. The proposed modifications comprise of:

1. *The replacement of 57 no. units comprising of;*
    - *06 no. 4 bed semi-detached houses (139.2 sq.m.)*
    - *15 no. 3 bed semi-detached houses / townhouses (108 sq.m.)*
    - *06 no. 1 and 2 bed apartments (Block A) (54.1 sq.m. – 114.1 sq.m.)*
    - *14 no. 1 and 2 bed apartments (Block B)(54.1 sq.m. – 114.1 sq.m.)*
    - *16 no. 1, 2, and 3 bed apartments (Block D)(50.2 – 123.2 sq.m.)*

    With 59 no. units comprising of;
    - *04 no. 4 bed semi-detached houses (134.0 sq.m.)*
    - *22 no. 3 bed semi-detached houses (104.4 – 108.6 sq.m.)*
    - *04 no. 3 bed semi-detached houses (115.8 sq.m.)*
    - *08 no. 3 bed townhouses (109.8 sq.m.)*
    - *06 no. 2 bed townhouses (80.2 sq.m.)*

- *15 no. 1 and 2 bed apartments (61.6 – 71.9 sq.m.)*

2. *The provision of 5no. additional townhouse units (2 no. 3 beds and 3 no. 2 beds).*
3. *The omission of the permitted childcare facility with capacity to accommodate 58no. children and the construction of a childcare facility on a site to the west with capacity to accommodate 102no. children.*

The development will also include the provision of private, communal, and public open spaces; internal roads and pathways; pedestrian and cyclist routes; hard and soft landscaping and boundary treatments; waste storage; plant; signage; public lighting; substations; all associated site development works; and all drainage and foul sewer infrastructure and network works including nature-based suds measures.'

The lands are bound to the north and west by the existing Ashfort neighbourhood, to the south by the existing Evanwood neighbourhood and to the east by the existing Kylemore neighbourhood.

The Vehicular and pedestrian access to the proposed site remains unchanged from that granted under Application Ref. 23/60842 and Appeal Ref. ABP-319009-24 via the School House Road which also serves the adjacent Ashfort Residential Development.

It is proposed to provide a vehicular access to the proposed creche via the Golf Links Road. No vehicular access is proposed via the Golf Links Road to serve the residential development. The Golf Links Road will serve the residential development for pedestrians and cyclists only.

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2.0 ROADS

For effective road design in Ireland, compliance with Transport Infrastructure Ireland's (TII) Design Manual for Roads and Bridges (DMRB) and the Design Manual for Urban Roads and Streets (DMURS) is critical, alongside adherence to legislative requirements such as the Roads Act and Planning and Development Act. Incorporating road safety, sustainability, and environmental considerations ensures designs meet modern standards.

The following guidelines and standards (non-exhaustive list) formed the basis of the road design for this proposed development:

- Design Manual for Roads and Bridges (DMRB), TII Publications
- Traffic Management Guidelines, Department of Transport, TII and the National Roads Authority
- Geometric Design of Major/Minor Roads and Junctions, TII Publications
- Design Manual for Urban Roads and Streets (DMURS), Department of Transport Tourism and Sport
- Pavement Design Guidelines, TII Publications
- Road Safety Audit Guidelines, TII Publications
- Environmental Impact Assessment (EIA) Guidelines, Environmental Protection Agency
- Recommendations for Site Developments Works for Housing Areas (October, 1998)

2.1 COMPLIANCE WITH DMURS

The development layout has been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS) as published by the Department of Transport, Tourism and Sport. Strong pedestrian connectivity, slow vehicle speeds and good visibility for road users is integral to the design of the development street network.

The development has placed pedestrians at the top of the hierarchy. Footpath widths throughout the site are 2m and several shared spaces for pedestrians have been provided.

On cul-de-sacs in the site, a "shared surface" will be provided on which vehicles, bicycles and pedestrians share the same surface. This will assist in giving pedestrians priority and in reducing vehicle speeds.

The internal roads within the estate have sightlines of 23m (2.0m setback) for a given design speed of 30km/hr which is consistent with the forward visibility requirements as stated within DMURS.

The minimum level of forward visibility required along a street for a driver to stop safely, should an object enter its path, is based on the Stopping Sight Distances (SSD). The SSD has 3 constituent parts:

- Perception Distance: The distance travelled before the driver perceives a hazard.
- Reaction Distance: The distance travelled following the perception of a hazard until the driver applies the brakes.
- Braking Distance: The distance travelled until the vehicle decelerates to a halt.'

Although the internal roads within the estate have been design for Forward Visibility design speeds of 30km/hr, the actual speeds within the estate will be much less due to the additional traffic management measures (horizontal and vertical deflection) that have been incorporated into the site to ensure reduced speeds within the site.

Road widths in the proposed development are 5.5m and 6m for main estate routes and links, and 4.8m for shared surface roads, cul-de-sacs and minor arms.

The DMURS Statement of Compliance 25066-OSL-00-RP-C-0004 has been included with this planning application under separate cover.

3.0 SITE SPECIFIC FLOOD RISK ASSESSMENT

A Site Specific Flood Risk Assessment was prepared by Langan Consulting Engineers (LCE) as part of the original planning application as granted under An Coimsiún Pleanála Reference *ABP 319009-24* (Limerick City and County Council Planning Reference 23/60842).

In summary, the Site Specific Flood Risk Assessment concluded the following in respect of the development as originally proposed under the previous planning;

- Flooding History

  The nearest flood event identified on Floodinfo.ie is located approximately 1km from the subject site. It is not linked to the subject site hydraulically. There is no statutory history of flooding within the site boundaries. Historic OS mapping does not identify any lands within the site boundaries, as being liable to floods. GSI mapping does not identify any alluvial soils within the site. The proposed development lands are not identified on the Arterial Drainage mapping as having benefitted by drainage works carried out historically by the OPW. The OPW PRFA study 2011 did not identify any pluvial or fluvial risk. The OPW CFRAM study 2016 identifies no fluvial risk up to the 1 in 1000-year conditions. Anecdotal evidence suggests localised historic pluvial flooding occurs within the south-western portion of the site during extreme weather events; this can be managed with the proposed stormwater drainage design for the development. The conveyance capacity of the adjacent land drain was assessed. The hydraulic model created confirms that the average capacity of the existing drainage ditch is sufficient to service the 1 in 100-year rainfall event, including a 20% climatic upscale, for the upstream catchment associated with the land drain.

- Site Flood Zoning

  Under the OPW Planning System and Flood Risk Management Guidelines published in November 2009, the proposed development is considered appropriate for this zoning.

- Proposed Development Impact on Flooding

  All site surface water management design should consider the impact of any discharge on flooding elsewhere. The stormwater drainage system for the proposed development should be designed by appropriately qualified and experienced personnel.

- Recommendations

  General maintenance of vegetation in the vicinity of the drain is recommended in order to ensure its working capacity. Surface water run-off from the proposed development must be attenuated to green-field runoff rates within the site, prior to discharge to the adjacent watercourse. All site drainage will be designed in accordance with Sustainable Drainage systems [SuDS] principles.

OSL considers the above referenced Site-Specific Flood Risk Assessment to be relevant, applicable and accurate with respect to the proposed amendments included as part of this planning application.

4.0 WATER

4.1 EXISTING SERVICES

There is an existing 150mm diameter watermain located in Golf Links Road which extends up to the proposed development entrance. This main is serviced/supplied via the existing 200mm diameter network located in School House Road to the north of the subject site.

Please refer to Appendix A for the Existing Services Layout.

4.2 PROPOSED SERVICES

It is proposed that this development will be serviced by 150mm and 100mm diameter watermains and will include the provision of new fire hydrants and relevant infrastructure throughout the site.

As mentioned previously, the development as granted under An Coimsiún Pleanála Reference *ABP 319009-24* (Limerick City and County Council Planning Reference 23/60842) is currently under construction. A Self-Lay Connection Agreement (CDS 2300489201) has been entered into between Uisce Éireann and our client for the 113 units and creche, as per the original planning.

A pre-connection feasibility enquiry was made to Uisce Éireann to confirm whether there is adequate capacity in the public network to accommodate the additional units associated with the amendment to the original planning proposed (CDS 25007009). The proposed connection was deemed feasible without upgrades.

A submission for the design vetting (Statement of Design Acceptance, SODA) of the design proposal has been made to Uisce Éireann. OSL is yet to receive the SODA from Uisce Éireann.

Using the Uisce Éireann guidelines and parameters, the estimated peak demand from the development has been calculated as 3.84 l/s with the average daily demand being 0.61 l/s.

A bulk water meter will be provided at the connection to the site. The supply arrangements will be carried out to the requirements of Uisce Éireann.

All connections, valves, hydrants, meters etc. have been designed and are to be installed in accordance with Uisce Éireann 'Standard Details for Water Infrastructure', 'Code of Practice for Water Infrastructure' and the Department of the Environment's Building Regulations "Technical Guidance Document B - Fire Safety (2020)".

Please refer to Appendix B for the UÉ Correspondence.

Please refer to Appendix F for the Water Demand Calculations.

Please refer to drawing no. 25066-OSL-11-DR-C-1140.

5.0 FOUL SEWER

5.1 EXISTING SERVICES

There is an existing 225mm diameter foul line located within the existing Evanwood Estate to the south of the subject site.

Please refer to Appendix A for the Existing Services Layout.

5.2 PROPOSED SERVICES

It is proposed that this development will be serviced internally by 150mm and 225mm diameter foul sewers and will include the provision of services connections, inspection chambers etc. throughout the site. The proposed network will connect via gravity to the existing foul sewer located within the Evanwood Estate. Foul Sewer connections remain unchanged as granted under the application referenced previously and below.

As mentioned previously, the development as granted under An Coimsiún Pleanála Reference *ABP 319009-24* (Limerick City and County Council Planning Reference 23/60842) is currently under construction. A Self-Lay Connection Agreement (CDS 2300489201) has been entered into between Uisce Éireann and our client for the 113 units and creche, as per the original planning.

A pre-connection feasibility enquiry was made to Uisce Éireann to confirm whether there is adequate capacity in the public network to accommodate the additional units associated with the amendment to the original planning proposed (CDS 25007009). The proposed connection was deemed feasible without upgrades.

A submission for the design vetting (Statement of Design Acceptance, SODA) of the design proposal has been made to Uisce Éireann. OSL is yet to receive the SODA from Uisce Éireann.

Foul sewers have been designed in accordance with the Uisce Éireann 'Standard Details for Wastewater infrastructure' and 'Code of Practice for Wastewater Infrastructure'. In addition, foul sewers have been designed to the Building Regulations 1997, as amended, (referred to within as 'the Building Regulations') and specifically in accordance with the principles and methods set out in EN 752:2008 and DOE 'Recommendations for Site Development Works' (1998).

In addition, HR Wallingford 'Tables for the Hydraulic Design of Pipes, Sewers and Channels' and Water UK/WRc 'Sewers for Adoption – 6th Edition' have been applied. Values for roughness of uPVC pipes were obtained from Wallingford "Tables for the Hydraulic Design of Pipes, Sewers and Channels" and Wavinsewer systems catalogue.

Using the Uisce Éireann guidelines and parameters, the estimated peak discharge from the development has been calculated as 4.06 l/s with the average discharge being 0.68 l/s.

Foul sewer shall be constructed to comply with the requirements of the Building Regulations 1997 in accordance with the recommendations contained in the Technical Guidance Documents, Section H (revised 2005) and the Uisce Éireann Code of Practice and Standard Details for Wastewater Infrastructure.

Please refer to Appendix B for the UÉ Correspondence.

Please refer to Appendix C for the Foul Sewer Calculations.

Please refer to drawing no. 25066-OSL-11-DR-C-1130.

6.0 SURFACE WATER

As mentioned previously, the development as granted under An Coimsiún Pleanála Reference *ABP 319009-24* (Limerick City and County Council Planning Reference 23/60842) is currently under construction.

A Stage 2 Surface Water Audit was undertaken by JBA Consulting as part of the original planning conditions (Condition 14) as granted under the aforementioned planning reference. In the absence of a defined audit procedure by Limerick City & County Council (LCCC) the audit was completed generally in accordance with Dún Laoghaire Rathdown County Council's (DLRCC) Stormwater Audit Procedure (Appendix 7 of the DLRCC Development Plan 2022-2028) and taking into account LCCC SuDS requirements in their Development Plan.

The surface water design intent and overall strategy have remained the same as submitted for the Stage 2 Surface Water Audit and as agreed with LCCC as part of the original planning application and relevant planning compliance submissions, with the exception of those revisions made to accommodate the change in site layout as proposed as part of this planning application.

This chapter addresses the surface water design intent and overall strategy associated with this planning application and that of the development as a whole.

6.1 EXISTING SERVICES

There is no formal surface water network within the subject lands. There is an existing OPW Channel along the eastern site boundary.

There is an existing 225mm diameter surface water sewer within the Evanwood Estate to the south of the site.

6.2 PROPOSED SERVICES

It is proposed to service the proposed development by means of a connection to the existing 225mm diameter surface water pipe within Evanwood Estate to the south, as mentioned previously. Surface Water connections remain unchanged as granted under the application referenced previously.

Interception, treatment, attenuation, and discharge control of surface water run off generated by, or as a result of this development is elaborated on further in the text and headings that follow.

Surface water management for the proposed development is designed to comply with the 'Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Technical Document - Volume 2, New Developments, 2005' the 'Greater Dublin Regional Code of Practice for Drainage Works, V6.0 2005' and Limerick City and County Council Surface Water/SuDS Specification 2022. CIRIA Design Manuals C753, C697 and C609 have also been consulted to design the surface water drainage system within the site.

The GDSDS guidelines require the following 4 main criteria to be provided by the development's surface water design;

- Criterion 1: River Water Quality Protection - satisfied by providing interception storage and treatment of run-off within the SuDS features e.g. permeable paving, tree pits, swales and detention basins.
- Criterion 2: River Regime Protection – satisfied by attenuating run-off with flow control device prior to discharge to the outfall.
- Criterion 3: Level of Service (flooding) for the site – satisfied by the site being outside the 1000 year coastal and fluvial flood levels. Pluvial flood risk addressed by development designed to accommodate a 100-year storm as per GDSDS. Planned flood routing for storms greater than 100-year level considered in design and development run-off contained within site.
- Criterion 4: River flood protection – attenuation provided within the SuDS features e.g. permeable paving construction, swales, tree pits and detention basin

A new surface water sewer network shall be provided for the proposed development which will be entirely separate from the foul sewer network. Surface water run-off from roof areas and hardstanding areas are designed to be collected by gravity pipe network. Surface water will be collected and discharged via a mixture of traditional and Sustainable Urban Drainage Systems (SuDS) to the existing 225mm diameter surface water sewer. Each unit will have its own independent connection to the surface water network.

The minimum diameter of the mainline surface water sewers is 225mm and minimum horizontal and vertical separation distances between proposed drainage and other services are as per the Uisce Éireann Code of Practice and Standard Details.

It is proposed that the surface water will discharge via attenuation tanks, a class 1 bypass separator (with kiosk, alarm/messaging system and vent pipes) and flow control device prior to discharging to the existing surface water network.

The surface water drainage network has been analysed for the risk of flooding for the 1 in 5-year, 1 in 30-year and 1 in 100-year rainfall events by means of simulating such events through hydraulic modelling in InfoDrainage. The InfoDrainage Simulation uses the Wallingford Procedure, time/area full hydrograph methodology, including energy and momentum equations for dynamic analysis of surface water networks. The site drainage network is modelled as one system where all flows, capacities, water levels, surcharged manholes etc are determined throughout the network for each critical storm duration. Therefore, the final combined discharge rate to the existing sewer from the outlet will be kept at (or below) the total permissible discharge rate defined.

An increase of 30% in rainfall has been included to account for climate change and 10% for urban creep.

The hydraulic analysis of the proposed surface water network as designed confirmed;

- No surcharging or flooding in the 1 in 5-year rainfall event
- No flooding in the 1 in 30-year rainfall event
- No flooding and protection of properties in the 1 in 100-year rainfall event

Please refer to drawing 25066-OSL-11-DR-C-1120, Proposed Surface Water Layout and Appendix G for the Infodrainage Report for the Critical Storm by Return Period.

6.3 INFILTRATION TESTING – METHODOLOGY AND RESULTS

To determine the suitability of infiltration techniques as part of the site's surface water drainage strategy, infiltration testing was undertaken in accordance with CIRIA Report 156/BRE Digest 365: Soakaway Design (1991). This method is the standard approach recommended for assessing the infiltration capacity of soils for SuDS systems, including soakaways, infiltration trenches, raingardens, and similar features.

The BRE 365 method requires the excavation of trial pits to the proposed base depth of the infiltration system, typically at least 1m below the invert of the proposed infiltration feature. Each trial pit is then filled with water to simulate real-world conditions and to assess how quickly water infiltrates into the ground. The fall in water level over time is recorded during multiple test repetitions to determine the infiltration rate of the underlying soils. The infiltration rate (expressed as m/s) is then used in the design of infiltration features to ensure sufficient capacity and performance.

In line with BRE 365 requirements:

- The trial pits were excavated to relevant depths based on proposed infiltration system design.
- The tests were conducted over three full test cycles per pit (where possible or allowed) to ensure reliability and consistency.
- Soil conditions, stratigraphy, and groundwater presence were recorded to contextualize infiltration performance.

6.3.1 Test Location and Ground Conditions

3 no. Trial Pits were identified. Their locations were chosen to coincide with SuDS (infiltration) features on site and has been identified in Figure 2 below. Trial pits were dug to 1.0m – 2.0m below ground level and soil characteristics generally found can be described as;

- 0.00 – 0.20m Topsoil – Dark brown, soft, organic
- 0.20 – 1.50m Silty sand – Light brown, soft, occasional gravel
- 1.50 – 2.00m Silty sand – Dark brown, firm, occasional gravel

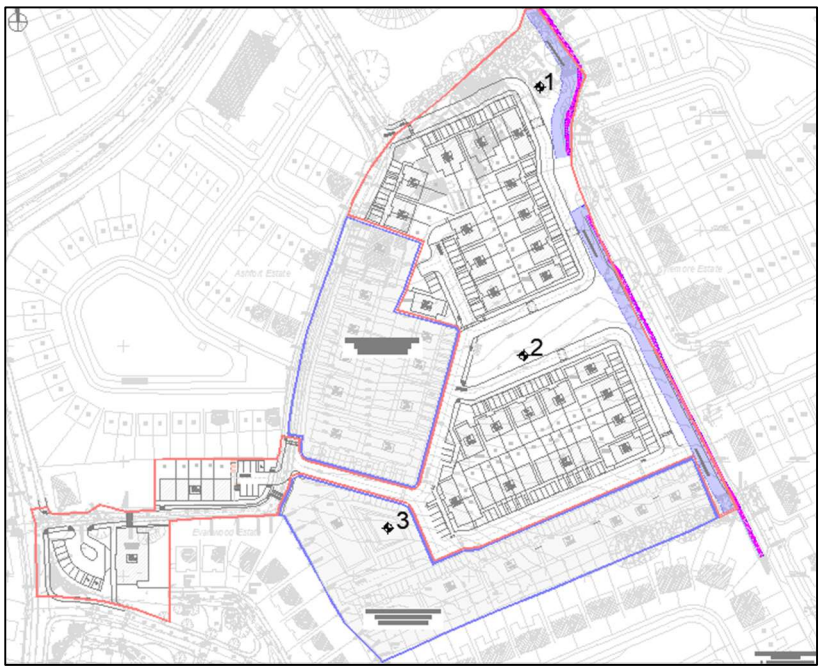


Figure 2: Site Infiltration Test Locations

6.3.2 Summary of Infiltration Test Results

Table 1 below summarises the infiltration test results.

Table 1: Summary of Infiltration Test Results

Trial Pit	Test Depth (m bgl)	Test Cycles Completed	Average Infiltration Rate (m/s)	Comments
1	1.5	1	1.308×10^{-5}	Generally suitable for infiltration design (good)
2	1.5	3	3.30×10^{-4}	Generally suitable for infiltration design (good)
3	1.5	2	2.81×10^{-5}	Generally suitable for infiltration design (good)

The results indicate that the underlying soils at the site are capable of supporting infiltration-based SuDS features. All infiltration rates fall within typical ranges suitable for soakaway design as per BRE 365 guidance. These findings, combined with the high-vulnerability classification of the aquifer and the inclusion of pollutant removal measures within the drainage design, confirm that infiltration is a feasible and environmentally appropriate drainage solution at this location.

6.4 SURFACE WATER DESIGN CRITERIA

The documents listed below was used as reference documents for the design of the surface water management for the proposed development.

- 'Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Technical Document - Volume 2, New Developments, 2005'
- 'Greater Dublin Regional Code of Practice for Drainage Works, V6.0 2005'
- Limerick City and County Council Surface Water/SuDS Specification 2022
- Limerick City and County Council Surface – Green and Blue Infrastructure Strategy 2021
- Implementation of Urban Nature-based Solutions – Guidance Document for Planners, Developers and Developer Agents, V1.0 November 2024
- CIRIA Design Manuals C753, C697, C644 and C609 have also been consulted to design the surface water drainage system within the site.
- Department of Environment and Local Government - Recommendations for Site Development Works for Housing Areas (1998), Table 3.1.
- IS EN 752:2008 - Drain and Sewer Systems Outside Buildings, Table 2
- Building Regulations (2005) - Section H - Drainage and Wastewater Disposal, Section 1.5.7

Table 2 below describes the surface water design parameters used.

Table 2: Surface Water Drainage Design Parameters

Description	Value
Return Period Target	Hydraulic Pipe Design 1 in 5 years (no surcharging) Network Design 1 in 30 years (no flooding) Network Design 1 in 100 years (no flooding, property protection)
Climate Change	30%
Urban Creep	10%
Freeboard to FFL	500mm
M5-60	14.6 (as per Met Eireann Records)
Ratio R	0.265
SOIL Type	2
Soil Value	0.3
Rainfall Intensity for initial pipe sizing	50 mm/hr
SAAR	1028.7mm
Minimum pipe diameter	225mm (150mm for road gully connections)
Minimum pipe velocities	1.0m/s
Roughness	ks 0.6mm (0.15mm for uPVC)
Minimum Depth	1.2m cover under highways 0.9m elsewhere 0.75m with use of Class Z concrete surround
Flow Reduction parameter	2l/s/ha

Controlled Outflow from Development	7.13 l/s
Flow Restriction Method	Flow Control Device (eg. Hydrobrake)

6.5 SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS)

It is proposed to use a Sustainable Urban Drainage System (SuDS) approach to stormwater management throughout the site where possible. The overall strategy aims to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in stormwater, contributing to amenity, aesthetics and biodiversity enhancement and allow for the maximum collection of rainwater for re-use where possible. In addition, SuDS features aim to replicate the natural characteristics of rainfall runoff for any site by providing control of run-off at source and this has been achieved by the current proposals.

Surface water runoff will be treated by means of the SuDS measures discussed below, prior to entering the below ground attenuation and subsequent surface water system. The proposed SuDS features will reduce the runoff volume through evaporation, transpiration, infiltration and depression storage of the water within each system.

SuDS are a requirement under the 'Regional Code of Practice for Drainage Works' and 'The Greater Dublin Strategic Drainage Study'. Additionally, these systems are recommended under the 2009 guidelines, 'The Planning System and Flood Risk Management'.

The maintenance plan and maintenance schedule for the proposed SuDS features are discussed in Section 6.14 in this report.

The sections that follow indicate how each of the SuDS proposals contributes to reducing and restricting the discharge rate from the site.

6.5.1 Green Blue Roofs

It is proposed to provide Green Blue Roofs for the proposed apartment buildings included under the current permission as referenced above. These Green Blue Roofs forms part of the overall surface water strategy for the site. There are no additional/further Green Blue Roofs proposed as part of this application.

The Green Blue Roofs have been designed taking guidance from the Ciria Publications quoted previously.

Green Blue Roofs are a type of roofing system that combines the features of both a green roof (vegetated roof) and a blue roof (water retention roof). It is essentially a green roof with added capacity to store and manage rainwater.

The Green Blue Roof will improve water quality, reduce water quantity being discharged from the site, can offer an amenity to residents and offers a biodiversity element to the site also. This addresses the four pillars of SuDS design.

6.5.2 Bypass Interceptors

A proprietary oil/water separator which prevents hazardous chemical and petroleum products from entering watercourses and public sewers. Where deemed appropriate, Class 1 bypass separators have been included and adequately sized as part of the design proposal.

Bypass separators fully treat all flows generated by rainfall rates of up to 6.3mm/hr. This covers over 99% of all rainfall events. Flows above this rate are allowed to bypass the separator. These separators are used when it is considered an acceptable risk not to provide full treatment for high flows, for example where the risk of large spillage and heavy rainfall

occurring at the same time is small. Class 1 devices are designed to achieve a concentration of less than 5mg/l of oil under the standard test conditions.

The Petrol Interceptors will be fitted with an alarm/messaging system housed within a kiosk, including vent pipes, all suitably located within the development.

Please refer to drawings 25066-OSL-90-DR-C-9020 to 9026 for the Proposed Surface Water Details that includes details of the bypass interceptors and vent stack/pipes.

6.5.3 Swales

Broad, shallow drainage channels covered in grass which can treat, convey and attenuate runoff, at source, and can infiltrate to the ground where the subgrade is suitable. Swales also can promote biodiversity.

Swales are proposed along the development's landscaped paved areas where possible. Surface water runoff from these paved areas, including adjacent roofs where suitable, will discharge to this SuDS feature for interception and treatment prior to entering the drainage network. A high-level overflow to the drainage network within the build-up will accommodate removal of water.

CIRIA C753 (The SuDS Manual) Table 24.6 notes that pavements drainage by swales can be considered to provide interception.

Please refer to drawings 24051-OSL-90-DR-C-9020 to 9026 for the Proposed Surface Water Details that includes details of the swales.

6.5.4 Permeable Pavers

Porous surfacing (paving block or open graded material) which can treat rainwater, at source, and allow infiltration through to an underlying porous subbase where water can be stored within the voids of the subbase before being slowly released to the drainage collection system through natural flow via the porous medium. In this development, sealedpartial infiltration systems are proposed for those parking spaces that are located an adequate distance away from structures and includes a permeable geotextile at its base as well as an outlet to the surface water system. No infiltration systems are proposed for parking spaces located adjacent to or in close proximity to structures and includes an impermeable liner to capture and detain water.

These systems will allow some form of storage/attenuation for small rainfall events, allow infiltration for those with permeable geotextile at its base, water evaporation and adsorption in small quantities, therefore there will be less runoff from these areas in small rainfall events thus mimicking the natural response for this catchment. Permeable Pavers are proposed for the public car park areas (e.g. creche, amenity parking) as well as in private driveways.

They will be connected by means of overflow systems (for partial infiltration systems) and throttled outflow systems (in the case of no infiltration systems) to the development surface water network.

Please refer to drawings 25066-OSL-9010 and 9011 for the Proposed Road Details and 25066-OSL-90-DR-C-9020 to 9026 for the Proposed Surface Water Details that includes details of the permeable pavers, build-up, overflow and connection to surface water network.

6.5.5 Rainwater Harvesting

In relation to rainwater harvesting, an option is to provide a rainwater butts at each individual dwelling. This could be located to the rear of each unit. This rainwater butt will only have the ability to catch the rear sloping side of the dwelling and the reuse would be for watering plants.

The intention would be that these are provided retrospectively by the homeowner and does not currently form part of this surface water design.

6.5.6 Raised Raingarden Planters

A raised rain garden planter acts like a small rain garden and makes the area around a downspout more attractive. The raised planter typically has drainage holes in the bottom and overflow holes near the top. The bottom of the planter is filled with a suitable gravel with voids (typically 30-40%) which provides for a small attenuation facility with controlled discharge when full.

It is proposed to include raised raingarden planters to the front of dwellings where appropriate.

Please refer to drawings 25066-OSL-90-DR-C-9020 to 9026 for the Proposed Surface Water Details that includes details of the raised raingarden planters.

6.5.7 Cellular Attenuation System:

Proprietary modular block or arch structure with a maintenance/inspection tunnel for providing underground surface water attenuation storage and can infiltrate run off to the ground where subgrade is suitable.

It is proposed to attenuate surface water from the proposed development with four attenuation tanks, located in open spaced throughout the development. The proposed attenuation tanks have been designed to reduce peak runoff from site. The attenuation tanks have been sized to cater for a 1 in 100 year rainfall event with a 30% climate change allowance and 10% urban creep.

It is proposed that the attenuation tanks will be constructed as pluvial cubes, Wavin Aquacell ECO / Core-R (or similar approved), where there are significant space constraints and arch structures (Stormtech or similar approved) elsewhere. Through review of the groundwater levels, being on average 1.86m below ground level as witnessed on site in January 2025, the attenuation tank will be surrounded/wrapped with an impermeable liner to prevent groundwater from affecting facility volume and function.

The attenuation tank will be designed for site specific conditions (including buoyancy), installed, tested and certified by the approved supplier.

A manhole with a 450mm deep sump will be provided to intercept and trap silt/sediment, located upstream of each of the attenuation tanks.

There are 4no. Attenuation systems proposed throughout the proposed development, each responsible for managing a sub-catchment within the larger development. The surface water attenuation design has been further elaborated on in Section 6.9.1 of this report.

6.5.8 Basins, wetlands and ponds:

Basins, wetlands and ponds on any site allows safe and contained storage for excess rain and storm water as it allows for its release over time into the sewer system at a controlled rate. This removes much of the potential flooding risk caused by the inability for excess water to drain safely. Furthermore, basins, wetlands and ponds can treat, convey and attenuate runoff, at source, and can infiltrate to the ground where the subgrade is suitable. It can also promote biodiversity.

It is proposed to incorporate detention basins in green spaces to compliment the SuDs strategy. These are vegetated depressions designed to store runoff on the surface and infiltrate it gradually into the ground. They are dry except in periods of heavy rainfall.

The detention basins proposed will be located in green areas and will cater for some runoff from adjacent roadways and roofs, but primarily the open space areas where they are situated. The surface water design includes for 2 no detention basins as an initial interception measure, prior to entering the main network, for surface water run off management of some of the sub-catchments within the larger development. The detention basins are proposed to be gradually sloped from 0 level to 300mm deep to merge with the swales. The maximum grade across the width of the basin is 1:31 as calculated.

CIRIA C753 (The SuDS Manual) Table 24.6 notes that pavements drainage by basins, wetlands and ponds can be considered to provide interception

We confirm that the design has been undertaken with due regard to safety and risk mitigation, in accordance with the principles and best practices set out in the CIRIA SuDS Manual (C753) as well as the 'Implementation of Urban Nature-based Solutions Guidance Document for Planners, Developers and Developer Agents' (November 2024, Version 1) as written and prepared by Civic Engineers and the New Practice for Local Authority Waters Programme.

The design incorporates features that align with the guidance outlined in Section 36.5 of the CIRIA SuDS manual, which emphasizes the importance of shallow side slopes (not steeper than 1 in 3), appropriate landscaping, controlled access where necessary, and clear visibility to deter unsafe behaviour. These measures ensure the detention basins are safe for all users while still fulfilling their function in surface water management.

6.5.9 Flow Control Device:

It is proposed to provide a flow control device at strategic locations within the sub-catchments to restrict the outflow of water from the subject site. The flow control devices will be fitted with a pull cord bypass and a penstock valve, installed on the inlet to the manhole for maintenance purposes.

Please refer to drawings 25066-OSL-90-DR-C-9020 to 9026 for the Proposed Surface Water Details that includes details of the flow control device manhole.

6.6 LONG-TERM STORAGE

In addition to limiting the runoff rate through attenuation, the GDSDS requires that runoff volume from the site is limited in extreme events. The objective is to match the runoff volume discharged to the downstream receiving watercourse after development to that which occurred prior to development. This volume is calculated by comparing the 100-year 6-hour event for 'pre' and 'post' development as is referred to as "Long-Term Storage".

Where long-term storage is provided, this has a direct effect on the permissible site discharge rate from the site. It is not proposed to provide long-term storage as Sub-criterion 4.3 of the GDSDS is satisfied through the proposed design.

6.7 PERMISSIBLE SITE DISCHARGE

According to the GDSDS, the method used for determining peak flow rates for small greenfield catchments is the UK 'Institute of Hydrology Report 124, Flood Estimation for Small Catchments'. This method calculates $Q_{BARrural}$ which is the mean annual flood flow from a rural catchment.

Where long-term storage can be provided or is not necessary, surface water can be discharged at a higher value than $QBAR_{mrai}$, this discharge rate ($QBAR_{growth}$) is dependent on the design return period and the corresponding growth factor from the GDSDS Table 6.6. However, if longterm storage cannot be provided, the on-site the discharge rate from the site should be kept to $QBAR_{rural}$ or 2 l/s/ha, whichever is greater (GDSDS).

However, it is important to note that the permissible site discharge as required/specified within Limerick City and County Council Surface Water/SuDS Specification 2022 is to be kept at $QBAR_{rural}$ or 2 l/s/ha, whichever is greater restriction.

The IH124 method calculates $QBAR_{rural}$ which is the mean annual flood flow from a rural catchment. As the subject site area is less than 50 hectares, the calculated QBAR is to be linearly interpolated from the calculated value to produce a reduced allowable outflow based on the actual site area, as per GDSDS section 6.6.1.

$$QBAR_{rural} = 0.00108 \times (Area)^{0.89}(SAAR)^{1.17}(SOIL)^{2.17}$$

Where:

$QBAR_{rural}$ = Mean Annual Flood (m3/s)

Area = Catchment Area (km2)

SAAR = Standard Average Annual Rainfall (mm)

SOIL = SOIL index from Flood Studies Report

The Area used in the $QBAR_{rural}$ calculation is the Net Area Drained and not the Gross Area (red line boundary) of the site. The soil value can be determined from the Flood Studies Report - Winter Rainfall Acceptance Maps (WRAP). A more accurate approach is to use the 'The Classification of Soils from Winter Rainfall Acceptance Rate, Flood Studies Report Table 4.5' to determine soil type and determine the soil value from Table 6.7 from the GDSDS. The latter method is adopted for this site.

Permissible site discharge for the site has been determined as follows:

- Total Net Drained Area = 0.03567 km^2 (3.567 Ha)
- SAAR = 1028.7mm (Met Éireann Extreme Rainfall\SAAR 1991-2020, Irish Grid Reference X 153316, Y 153488)
- SOIL Value= 0.30 (for soil type 2 from Table 6.7 from the GDSDS)

The permissible site discharge for the development ($QBAR_{rural}$) was calculated as 10.2 l/s.

In accordance with Limerick City and County Council's Surface Water/SuDS Specification 2022, site discharge levels should not exceed 2 l/s/ha or Qbar whichever is the greater restriction. Therefore, the allowable discharge for the development was calculated as 7.13 l/s.

Please refer to Appendix D for the Permissible Site Discharge Calculations.

6.8 SURFACE WATER RUNOFF COEFFICIENTS

As discussed in this report previously, a large proportion of runoff is routed through SuDS features these will have an attenuating effect which reduce the rate of stormwater runoff for every rainfall event.

In accordance with Limerick City and County Council's Surface Water/SuDS Specification 2022, the Surface Water Runoff coefficients utilised for this site has been applied as follows:

- Hard surfaces inclusive of roofs, roads, footpaths and any other hard standing area = 1.00
- Green areas or park land = 0.20

When applying the run-off coefficients to the contributing areas, the Effective Catchment Runoff Coefficient was calculated as 0.60. This factor was applied to catchments and inflows within the Infodrainage hydraulic model and analysis

6.9 SURFACE WATER CATCHMENT MANAGEMENT

The proposed development catchment has been subdivided into 6 sub-catchments. A diagram, Figure 3, has been included below to illustrate the surface water network catchment locations, flow routes, attenuation features and controls.

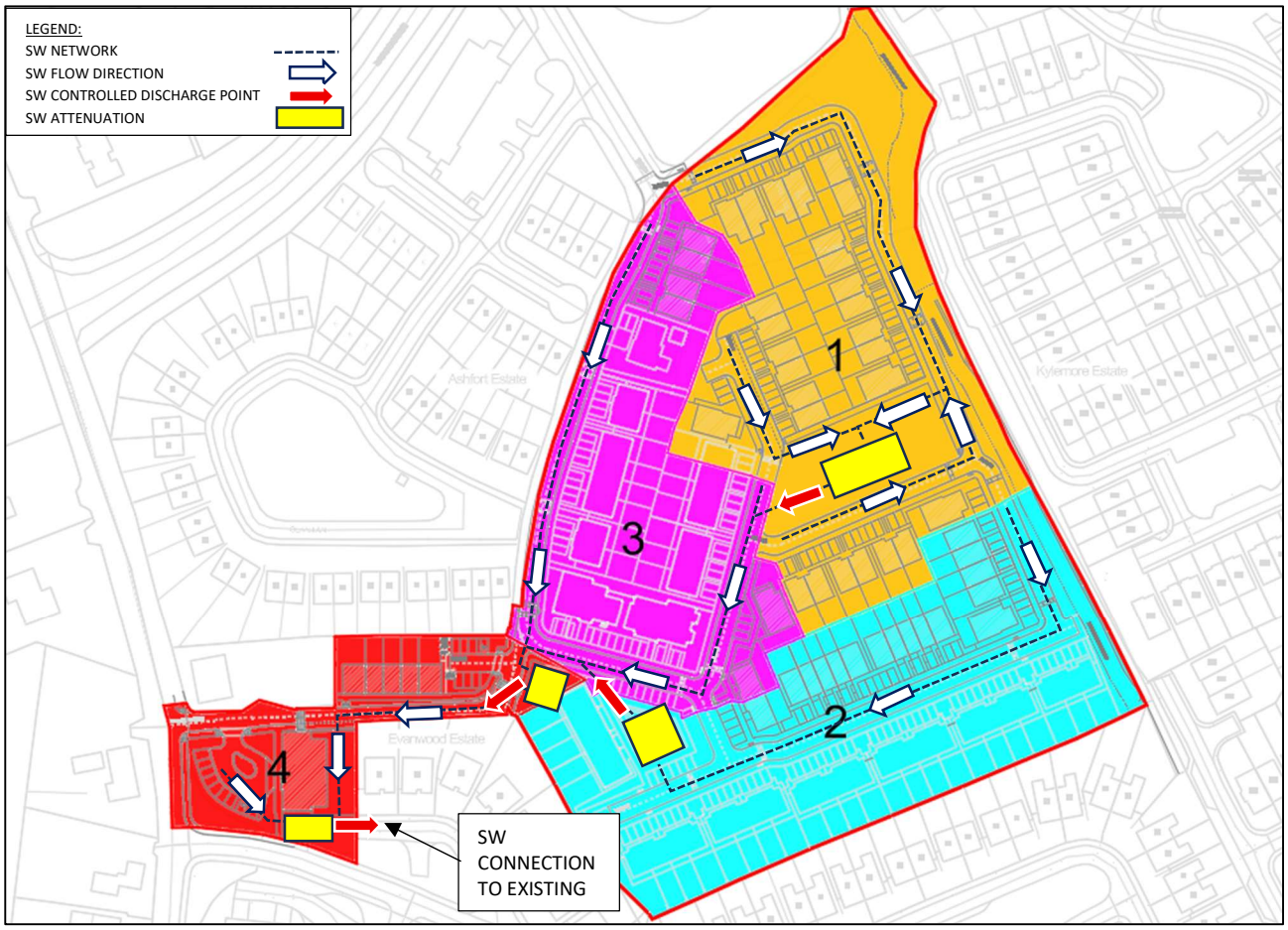


Figure 3: Surface Water Sub-Catchments

Table 3: Surface Water Sub-Catchment Summary

Sub-Catchment	Sub-Catchment Size (Total) m^2	Effective Runoff Coefficient	Sub-Catchment Size (Effective) m^2
1	11928.700	0.60	7157.22
2	11400.533	0.60	6840.3198
3	8321.392	0.60	4992.835
4	4019.605	0.60	2411.763

6.9.1 Surface Water Attenuation

The GDSDS requires flood waters for a 100-year return period to be managed on-site, therefore this return period (+30% Allowance for Climate Change and 10% Urban Creep) has been adopted for attenuation calculations.

The surface water runoff from the catchments will be restricted to greenfield runoff rates using flow control devices as described under Section 6.5.9 above.

This surface water system has been hydraulically modelled in InfoDrainage to ensure that the overall discharge at the end of the hydraulic system (i.e. the outlets to the existing surface water network) is at, or below, the greenfield runoff rate.

The InfoDrainage Simulation uses the Wallingford Procedure, time/area full hydrograph methodology, including energy and momentum equations for dynamic analysis of surface water networks. The site drainage network is modelled as one system where all flows, capacities, water levels, surcharged manholes etc are determined throughout the network for each critical storm duration. Therefore, the final combined discharge rate to the existing sewer from the outlet will be kept at (or below) the total permissible discharge rate defined above.

Maximum rainfall data from Extreme Rainfall Return Period values produced by Met Eireann was used to input into InfoDrainage to determine maximum flood volumes and ensure protection of properties against flooding. Rainfall data for the site was sourced from an Annual Average Rainfall (AAR) Grid (1981-2010) and a Depth Duration Frequency model produced by Met Eireann (Available from: http://www.met.ie/climate/products03.asp). The design criteria that have been set out in the sections above was input into InfoDrainage.

Table 4 below summaries the attenuation facilities provided, max water level results, freeboard provided to finished floor levels and discharge control proposed.

Table 4: Attenuation and Discharge Control Summary

Sub-Catchment	Critical Storm Event	Max Water Level During Critical Storm Event (m)	Facility Provided	Freeboard to adjacent/nearby properties (mm)	Volume of Attenuation Provided (m^3)	Flow Controlled via Flow Control Device (l/s)
1	100 years: +30%; 2160 mins Winter	26.126	Attenuation Tank 1	874	552.528	2.0
2	100 years: +30%; 1440 mins Winter	23.110	Attenuation Tank 2	1390	484.781	15.0
3	100 years: +30%; 1440 mins Winter	23.043	Attenuation Tank 3	1257	307.442	15.0
4	100 years: +30%; 1440 mins Winter	22.923	Attenuation Tank 4	727	208.931	7.13

The InfoDrainage design summary reports have been included within Appendix G of this report.

As mentioned previously in this report, it is proposed that the attenuation tanks will be constructed as pluvial cubes, Wavin Aquacell ECO / Core-R (or similar approved), where there are significant space constraints and arch structures (Stormtech or similar approved) elsewhere.

The table below sets out the required minimum and maximum depth of cover, as well as the actual design depth of cover for the proposed pluvial cubes. The below confirms that installation of these tanks can be done as per the detailed design proposed.

Table 5: Attenuation Design Summary

Tank	Proposed Material	Tank Invert Level (m)	Tank Design Depth (Total Crate Height) (mm)	Proposed Ground Level over Tank (m)	Depth of Cover Provided (mm)	Minimum and Maximum Depth of Cover as per Manufacturer's Guidelines (m)
1	Stormtech MC3500	24.734	1143	27.187	1310	MIN 0.45, MAX 2.4
2	Wavin Aquacell Core-R	22.075	1090	24.425	1260	MIN 0.300 Landscaped Areas (0.500 for cars parked with mass <3 tonnes) MAX 6.680
3	Wavin Aquacell ECO	21.756	1790	24.150	604	MIN 0.300 (0.500 where ride-on mower is used) MAX 2.680
4	Wavin Aquacell ECO	21.290	1440	23.750	1020	MIN 0.300 (0.500 where ride-on mower is used) MAX 2.680

6.10 INTERCEPTION VOLUME

The GDSDS requires that no run-off should directly pass to the receiving watercourse for rainfall depths of up to 5mm, therefore interception should be provided at source where practicable. The volume of interception required is based on 5mm of rainfall depth from 80% of the runoff from impermeable areas as defined in the GDSDS (Appendix E section E2.1.1).

The interception volume attributable to each SuDS feature (swales, tree pits, bioretention raingardens etc.) consists of the volume of water that can infiltrate to the ground, what will evaporate into the atmosphere and what can transpirate through plants and vegetation. Additionally, there will some losses of water due to absorption and wetting of stone and soil media.

Not all SuDS features will be able to achieve infiltration, evaporation, transpiration and losses due to absorption/wetting. The limits for each SuDS feature type are considered when calculating interception volumes. The interception storage attributable to the losses in stone and soil media, such as the stone media used in filter drains was not included in the calculations.

The total interception volume required (as calculated) for the site is 86.69 m3. The interception volume provided for the site by means of swales, bioretention areas, permeable paving etc. exceeds the requirement.

Please refer to Appendix E for the Interception Volume Calculations.

6.11 TREATMENT VOLUME

The GDSDS requires that a "treatment volume" (Vt) be provided in order to prevent any pollutants or sediments discharging into river systems, additionally a 'treatment train' stormwater runoff management system is required.

According to CIRIA document C697 the following treatment train approach is necessary:

- Roofs – 1 Treatment Stage
- Road Areas – 2 Treatment Stages
- Paved Areas excluding Roads - 1 Treatment Stage

The treatment volume is based on treatment of 15mm of rainfall depth from 80% of the runoff from impermeable areas as defined in the GDSDS (Appendix E section E2.1.2).

All run-off areas will pass through the required number of treatment stages prior to discharging to the downstream outfall.

The total treatment volume required (as calculated) for the site is 260.06 m3. The treatment volume provided for the site by means of swales, bioretention areas, permeable paving etc. exceeds the requirement.

Please refer to Appendix E for the Interception Volume Calculations.

6.12 SURFACE WATER SEWERS

As mentioned previously, surface water from the proposed development will be discharged, after attenuation and discharge control, to the existing 225mm diameter surface water sewer within the Evanwood Estate.

Surface water sewers are designed in InfoDrainage using the Modified Rational Method with design criteria as established in the section above. Effective runoff coefficients for each pipe catchment have been determined based on the runoff characteristics for each surface contributing to flows within the catchment.

Values for roughness of uPVC pipes were obtained from Wallingford “Tables for the Hydraulic Design of Pipes, Sewers and Channels” and Wavinsewer systems catalogue.

All gullies will be positioned and designed in accordance with ‘The recommendations for site development works for housing areas’ published by the Department of the Environment’.

Please refer to Appendix G for the Infodrainage Report for the Critical Storm by Return Period (5, 30 and 100 year return periods).

6.13 POLLUTION HAZARDS INDICES BASED ON THE SIMPLE INDEX APPROACH

The method used is guided by the land use and SuDS performance evidence. The design criteria for the Simple Index Approach are for the Total SuDS mitigation index (for each contaminant type) ≥ pollution hazard index (for each contaminant type). As shown below, in all cases the mitigation index is greater than the pollution index for each contaminant.

6.13.1 Step 1: Define Pollution Hazard Indices

Pollution hazard indices are presented in Table 26.2 of the CIRIA SuDS Manual (reproduced in Figure 4 below). These specify the hazard index for each contaminant type for different types of land use.

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways[1]	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways[1]	High	0.8[2]	0.8[2]	0.9[2]

Notes

1 Motorways and trunk roads should follow the guidance and risk assessment process set out in Highways Agency (2009).

2 These should only be used if considered appropriate as part of a detailed risk assessment – required for all these land use types (Table 4.3). When dealing with high hazard sites, the environmental regulator should first be consulted for pre-permitting advice. This will help determine the most appropriate approach to the development of a design solution.

Where a site land use falls outside the defined categories, the indices should be adapted (and agreed with the drainage approving body) or else the more detailed risk assessment method should be adopted.

Where nutrient or bacteria and pathogen removal is important for a particular receiving water, equivalent indices should be developed for these pollutants (if acceptable to the drainage approving body) or the risk assessment method adopted.

Figure 4: CIRIA SuDS Manual - Pollution hazard indices for different land use classifications

The proposed site consists of the following land uses;

- Residential Roofs
- Other Roofs
- Individual property driveways, residential car parks and low traffic roads and non-residential car parking with infrequent change

6.13.2 Step 2: Determine SuDS Pollution Mitigation Indices

Indicative SuDS mitigation indices are presented in Table 26.3 of the CIRIA SuDS Manual (reproduced in Figure 5 below). These specific the mitigation index for each contaminant type for different types of SuDS measures.

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters

	Mitigation indices[1]		
Type of SuDS component	**TSS**	**Metals**	**Hydrocarbons**
Filter strip	0.4	0.4	0.5
Filter drain	0.4[2]	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond[4]	0.7[3]	0.7	0.5
Wetland	0.8[3]	0.8	0.8
Proprietary treatment systems[5,6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Notes

1 SuDS components only deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters.

2 Filter drains can remove coarse sediments, but their use for this purpose will have significant implications with respect to maintenance requirements, and this should be taken into account in the design and Maintenance Plan.

3 Ponds and wetlands can remove coarse sediments, but their use for this purpose will have significant implications with respect to the maintenance requirements and amenity value of the system. Sediment should normally be removed upstream, unless they are specifically designed to retain sediment in a separate part of the component, where it cannot easily migrate to the main body of water.

4 Where a wetland is not specifically designed to provide significantly enhanced treatment, it should be considered as having the same mitigation indices as a pond.

5 See Chapter 14 for approaches to demonstrate product performance. A British Water/Environment Agency assessment code of practice is currently under development that will allow manufacturers to complete an agreed test protocol for systems intended to treat contaminated surface water runoff. Full details can be found at: **http://tinyurl.com/qf7yuj7**

6 SEPA only considers proprietary treatment systems as appropriate in exceptional circumstances where other types of SuDS component are not practicable. Proprietary treatment systems may also be considered appropriate for existing sites that are causing pollution where there is a requirement to retrofit treatment. SEPA (2014) also provides a flowchart with a summary of checks on suitability of a proprietary system.

Figure 5 - Indicative SuDS mitigation indices for discharges to surface water

The proposed SuDS measures consist of swales, bioretention systems, permeable pavement and detention basins. Both bioretention raingardens, raised raingarden planters and green blue roofs are considered as bioretention systems. Table 6 below summarises the risk indices for the development and Table 7 summarises the mitigation indices provided by the proposed SuDS measures.

Table 6 - Summary of Hazard indices for subject site

		Total Suspended Solids (TSS)	Metals	Hydrocarbons
Hazard Indices	Residential Roofs	0.2	0.2	0.05
	Other Roofs	0.3	0.2	0.05
	Individual property driveways, residential car parks and low traffic roads and non-residential car parking with infrequent change	0.5	0.4	0.4

Table 7 - Summary of Mitigation indices for subject site

		Total Suspended Solids (TSS)	Metals	Hydrocarbons
Mitigation Indices	Swales	0.5	0.6	0.6
	Permeable Pavement	0.7	0.6	0.7
	Bioretention Systems	0.8	0.8	0.08
	Detention Basins	0.5	0.5	0.6

The sections that follow summarises the specific SuDS measures proposed for each land use type.

6.13.3 Residential Roofs

The proposed development is a residential development and therefore the majority of roofs within the development will be classified as residential roofs. Run-off generated from the house/dwelling roofs within the development will be drained via raised raingarden planters (where feasible) and permeable paving.

Apartment roofs will be drained via green blue roofs, which is considered a bioretention system.

As shown in Table 8 below, these SuDS measures provide greater mitigation indices than the hazard indices and as such the proposed SuDS are deemed appropriate.

Table 8 – Comparison of Hazard and Mitigation indices for Residential Roofs

		TSS	Metals	Hydrocarbons
Hazard Indices	Residential Roofs	0.2	0.2	0.05
Mitigation Indices	Bioretention Systems	0.8	0.8	0.08
	Permeable Pavement	0.7	0.6	0.7

6.13.4 Other Roofs

The proposed development includes a creche and thus classified as other roofs. Run-off generated from the creche roof will be drained via permeable pavement. As shown in Table 9 below, these SuDS measures provide greater mitigation indices than the hazard indices and as such the proposed SuDS are deemed appropriate.

Table 9 – Comparison of Hazard and Mitigation indices for Other Roofs

		TSS	Metals	Hydrocarbons
Hazard Indices	Other Roofs	0.2	0.2	0.05
Mitigation Indices	Permeable Pavement	0.7	0.6	0.7

6.13.5 Driveways, car parks and low traffic roads

As mentioned previously, the proposed development is a residential development. The development includes parking areas and private driveways for the individual properties. The roads within the development can be classified as being low traffic roads.

These areas within the development will be drained via permeable paving and swales (where feasible). As shown in Table 10 below, these SuDS measures provide greater mitigation indices than the hazard indices and as such the proposed SuDS are deemed appropriate.

Table 10 – Comparison of Hazard and Mitigation indices for Other Roofs

		TSS	Metals	Hydrocarbons
Hazard Indices	Individual property driveways, residential car parks and low traffic roads and non-residential car parking with infrequent change	0.5	0.4	0.4
Mitigation Indices	Permeable Pavement	0.8	0.8	0.08
	Swales	0.5	0.6	0.6

6.13.6 Simple Index Approach Conclusion

The design criteria for the Simple Index approach are for the Total SuDS Mitigation Index (for each contaminant type) ≥ pollution hazard index (for each contaminant).

As shown above in all cases, the mitigation index is greater than the pollution index for each contaminant type. Therefore, the range of SuDS measures proposed satisfies the Simple Index Approach and provides adequate mitigation for the site.

6.14 MAINTENANCE PLAN AND MAINTENANCE SCHEDULES

Table 11 below sets out the proposed maintenance plan and maintenance schedules associated with the proposed surface water infrastructure.

Table 11: Proposed Maintenance Plan and Maintenance Schedule Summary

Item	Inspection Frequency	Inspection Type	Cleaning Mechanism	Cleaning Frequency
Road Gullies	Quarterly or after major storm event	Visual	Remove silt and solids by hand	Minimum every 2 years
Surface Water Manholes	Quarterly or after major storm event	Visual	Open manhole cover. Remove any debris.	Minimum every 2 years
Bypass Interceptor	Every 6 months or in the event of a spill	Visual	Petrol Interceptor to be emptied.	Yearly
Flow Control Device (Hydrobrake)	The aperture is to be checked for obstructions quarterly or after major storm events.	Visual	Remove silt and solids by hand.	Yearly
Green Blue Roofs	Every 6 months	Visual	Inspect all components including soil substrate, vegation, drains, irrigation systems (if applicable), membranes and roof structure for proper operation, integrity of waterproofing and structural stability.	Yearly
Permeable Pavement	Every 3 months	Visual	Brushing and vacuuming	Yearly
Swales	Every 6 months	Visual	Grass cutting.	Monthly during growing season
Attenuation Tanks	To be checked for debris or silt quarterly or after major storm event	Visual	Open inlet and outlet manhole cover. Remove any debris.	Yearly

6.15 AQUIFER VULNERABILITY ASSESSMENT AND JUSTIFICATION FOR INFILTRATION MEASURES

The Geological Survey Ireland (GSI) classifies the aquifer vulnerability in the area of the proposed development as "high". According to GSI's national methodology for assessing groundwater vulnerability, a high rating suggests that contaminants can reach the water table relatively easily due to moderate subsoil thickness or permeability. However, this does not preclude the use of infiltration-based drainage solutions—it instead necessitates the integration of appropriate source control and pollutant attenuation measures to ensure protection of the groundwater resource.

Our surface water management strategy has been designed in alignment with best practice guidelines and incorporates a robust SuDS (Sustainable Drainage Systems) train, including (but not limited to) swales, detention basins, underground storage tanks with infiltration capabilities, and bioretention raingardens. These components provide significant water quality treatment by promoting sedimentation, filtration, and biological uptake of potential pollutants. Furthermore, bypass separators have been specified to intercept hydrocarbons and other gross pollutants at source, thereby substantially reducing the risk of contamination entering the infiltration system.

GSI guidance recognises that when appropriate treatment systems are in place—especially those that offer multiple stages of attenuation and pollutant removal—infiltration can be suitable even in areas of high aquifer vulnerability. Our proposed system ensures that only sufficiently treated surface water is discharged to ground, offering both environmental protection and compliance with groundwater protection principles under the Water Framework Directive.

Given the high level of treatment incorporated and the nature of the surface water runoff (predominantly from low-risk areas such as roofs and landscaped surfaces), we are confident that infiltration to the underlying aquifer is an appropriate and sustainable approach in this context.

7.0 UTILITIES

7.1 EXISTING UTILITIES

A request for existing utility records from all major utility providers in Ireland has been made for the purpose of application. The following information is based on record information to hand, at the time of preparing the report.

Please refer to Appendix A for the Existing Services Layout.

7.1.1 ESB

ESB records indicate that there are existing ESB infrastructure within the vicinity of the proposed development.

7.1.2 Eir

EIR records indicate that there is telecom infrastructure located in the vicinity of the proposed development.

7.1.3 Virgin Media

OSL is yet to receive a response on from Virgin Media with regards to existing services records. It is not anticipated that there are any Virgin Media services located within the subject site.

7.1.4 Gas Networks Ireland

Gas Networks Ireland (GNI) records indicate that there is existing GNI within the vicinity of the subject site.

8.0 SUMMARY

This report has outlined the engineering proposals associated with GLR Property Ltd.'s application for a proposed Large-scale Residential Development at Old Orchard, Monaleen, Limerick, County Limerick on a circa 3.6-hectare site.

The findings are summarised as follows:

- The proposed development will be by new estate roads designed in accordance with the relevant guidance including the Design Manual for Urban Roads and Streets (DMURS)
- The proposed development will be served by a new water supply network. The water supply network to serve the development will be constructed in accordance with Uisce Éireann Code of Practice and Standard Details for water infrastructure.
- The proposed development will be served by new foul infrastructure. The foul network to serve the development will be constructed in accordance with Uisce Éireann Code of Practice and Standard Details for wastewater infrastructure.
- The proposed development will be served by new surface water infrastructure and connect to the existing surface water sewer located in Evanwood Estate.
- In relation to Flooding, under the OPW Planning System and Flood Risk Management Guidelines published in November 2009, the proposed development is considered appropriate and located within Flood Zone C.
- The Infiltration Test Results indicate that the underlying soils at the site are capable of supporting infiltration-based SuDS features. All infiltration rates fall within typical ranges suitable for soakaway design as per BRE 365 guidance.
- As part of the development, a number of different SuDS measures will be provided to minimise the impact on water quality and water quantity of the runoff and maximise the amenity and biodiversity opportunities within the site.
- In accordance with Limerick City and County Council's Surface Water/SuDS Specification 2022, site discharge levels should not exceed 2 l/s/ha or Qbar whichever is the greater restriction. Therefore, the allowable discharge for the development was calculated as 7.13 l/s for the 1 in 100 Year rainfall event (including an allowance of 30% for climate change and 10% for urban creep).
- The Risk and Mitigation Indices for proposed development areas and the pollution typically generated was assess through the Simple Index Approach. For all areas/cases assessed, the mitigation index is greater than the pollution index for each contaminant type. Therefore, the range of SuDS measures proposed satisfies the Simple Index Approach and provides adequate mitigation for the site.
- The Geological Survey Ireland (GSI) classifies the aquifer vulnerability in the area of the proposed development as "high". Given the high level of treatment incorporated and the nature of the surface water runoff (predominantly from low-risk areas such as roofs and landscaped surfaces), we are confident that infiltration to the underlying aquifer is an appropriate and sustainable approach in this context
- There are a number of utility providers with infrastructure within the vicinity of the development.

Appendix A – Existing Services

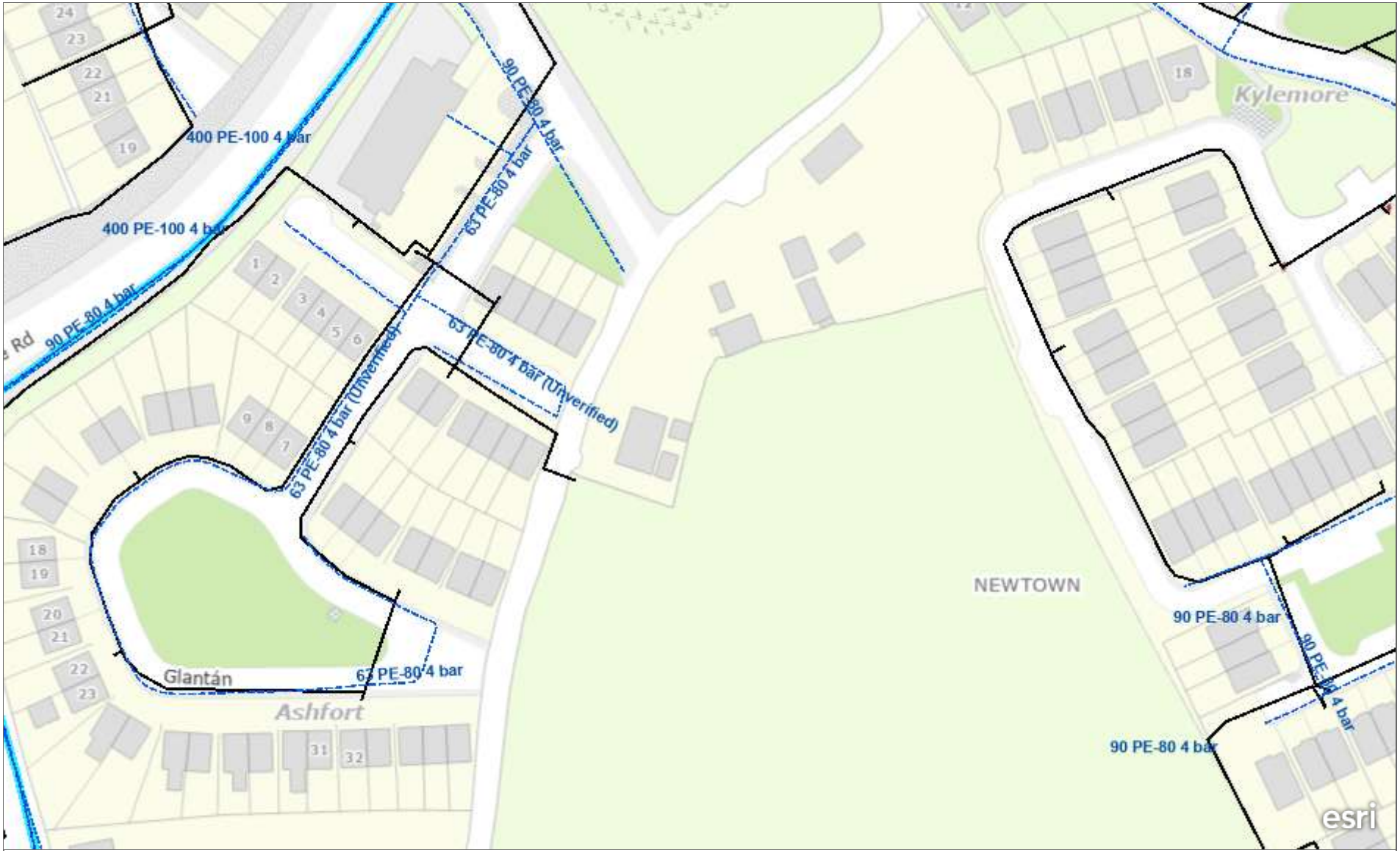
My Map



40m

© Tailte Éireann | ESB

My Map



40m

© Tailte Éireann | ESB

SewerStormWaterNetwork



Sewer Storm Water Network

60m

© Tailte Éireann

WaterDistributionNetwork



Water Distribution Network

60m

© Tailte Éireann

Appendix B – UÉ Correspondence

CONFIRMATION OF FEASIBILITY

Ben Mong

OSL Butler
Unit 38 Eastgate Drive
Little Island
Cork
T45 YO49

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

23 October 2025

Our Ref: CDS25007009 Pre-Connection Enquiry
Golf Links Road, Newtown, Limerick

Dear Applicant/Agent,

We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Housing Development of 10 unit(s) at Golf Links Road, Newtown, Limerick (the **Development)**.

Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible without infrastructure upgrade by Uisce Éireann
- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

Stiúrthóirí / Directors: Niall Gleeson (POF / CEO), Jerry Grant (Cathaoirleach / Chairperson), Gerard Britchfield, Liz Joyce, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a designated activity company, limited by shares.
Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

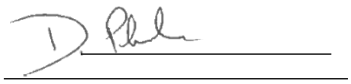
Where can you find more information?

- **Section A -** What is important to know?

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,



Dermot Phelan
Connections Delivery Manager

Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Jason Twomey,
OSL Butler,
Unit 38 Eastgate Drive,
Little Island,
Cork.

T45YO49

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

CONNECTION OFFER

To: GLR Property LTD.,
38 Palmerston Road,
Dublin,
Dublin 6.
D06YW68

FAO: Shaun Quigg

(the "**Developer**")

Our Ref: **CDS2300489201**

Self-Lay Connection Agreement – Golf Links Road, Newtown, Monaleen, Limerick

Date: 24 July 2025

SUBJECT TO CONTRACT

Dear Applicant,

Outcome of your Connection Application - Summary

We have completed the review of your Connection Application.

Uisce Éireann has reviewed your application for a Self-Lay connection(s) to the Network(s). Based upon the details provided by you, Uisce Éireann can offer you a connection(s) for your Development in accordance with the terms of this Connection Offer.

Where can you find more information?

You can find more information about the terms of your Connection Offer in this **Connection Offer letter** and enclosures. Please read this Connection Offer letter and the following enclosed documents, in particular:

- General Conditions for Self-Lay Connections (Appendix 2)
- Special Conditions (Appendix 3)

If you have any queries in relation to this Connection Offer, please contact our Customer Service Department at:

Stiúrthóirí / Directors: Niall Gleeson (POF / CEO), Jerry Grant (Cathaoirleach / Chairperson), Gerard Britchfield, Liz Joyce, Michael Nolan, Patricia King, Eileen Maher, Cathy Mannion, Paul Reid, Michael Walsh.
Oifig Chláraithe / Registered Office: Teach Colvill, 24-26 Sráid Thalbóid, Baile Átha Cliath 1, D01 NP86 / Colvill House, 24-26 Talbot Street, Dublin, Ireland D01NP86
Is cuideachta ghníomhaíochta ainmnithe atá faoi theorainn scaireanna é Uisce Éireann / Uisce Éireann is a designated activity company, limited by shares.
Cláraithe in Éirinn Uimh.: 530363 / Registered in Ireland No.: 530363.

Telephone: 1800 278 278 or +353 1 707 2828

Email: newconnections@water.ie

Web: www.water.ie/contact-us

Next Steps[1] to proceed with this Connection Offer:

- Sign and return the Letter of Acceptance (see attached)
- Pay the Connection Charge (see Section 3(a) below)
- Provide any required Self-Lay Surety (per 3(b) below, including a completed Deposit Agreement)
- Provide any Required Security (see Appendix 8)
- You have **90 days** from the date of this Connection Offer to accept the offer.

What to do after Acceptance of the Connection Offer?

- Submit a Commencement Notice (see General Condition 11.3)
- Arrange a Pre-Commencement Meeting (and provide a first draft of the Register of Premises Served) (see General Condition 11.3)

Prior to connection to the Network(s), you must[2]:

- Complete the Water & Wastewater Services Infrastructure in accordance with this Connection Agreement
- Provide all Final Documents
- Provide all required Deeds of Grant of Wayleaves and Easements (including for any Arterial Pipe(s) – see Appendix 3, Part 3 (if applicable)) (per General Condition 13)
- Provide a Register of Premises Serviced (per General Condition 18)

Unauthorised Connections:

As per the conditions set out in Appendix 3 herein, Uisce Éireann will deliver the full physical connection works on the public side from its Network(s) to your property boundary. Only Uisce Éireann or our authorised agents are permitted to make the Connection to its network.

In instances where a Connection has been made, either directly or indirectly, to the network without consent, this constitutes an illegal Connection under the Water Services Act of 2007. Where Uisce Éireann becomes aware of illegal connections to the water and wastewater networks, it maintains the right to prosecute or take appropriate action. Uisce Éireann reserves the right to disconnect connections completed by another entity.

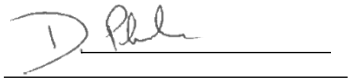
If you wish to proceed with this Connection Offer, please complete the Next Steps

[1] The purpose of this list is to draw particular attention to the key deliverables in the Connection Agreement. Developers are required to adhere to all requirements specified in the Connection Agreement.

[2] See General Condition 11.15.

listed above.

Yours sincerely



Dermot Phelan
Connections Delivery Manager

Outcome of your Connection Application - Details

Providing a connection between the:

Water Works and Wastewater Works
(the "**Network(s)**")

AND

The development located at Golf Links Road, Newtown, Monaleen, Limerick
(the "**Development**", as further described below)

Following receipt of your application for a connection of your Development to the Network(s) (the "**Connection Application**", a copy of which is included in **Appendix 1)**, Uisce Éireann is pleased to offer you ("**You**" or the "**Developer**"), a Connection between the Network(s) and the Development, subject to and in accordance with the conditions set out in this Connection Offer(the "**Connection Offer**"), the General Conditions for Self-Lay Connections (the "**General Conditions**", copy attached in Appendix 2) and any Special Conditions pertaining to this connection (the "**Special Conditions**", as may be attached in Appendix 3).

1. Connection Agreement

We enclose a Letter of Acceptance for your consideration.
We would encourage You to read the entirety of this Connection Offer including the appendices hereto and, in particular, the General Conditions and the Special Conditions. If You are satisfied with these and wish to proceed, please:

a) arrange for the Letter of Acceptance, duly executed by You, to be returned to **Uisce Éireann, PO Box 860, South City Delivery Office, Cork City** marked for the attention of *Dermot Phelan, Connections Delivery Manager*,

b) arrange for payment of the Connection Charge in accordance with section 3(a) below;

c) provide the required Self-Lay Surety (per 3(b) below);

d) provide confirmation that any Required Security, as specified in Appendix 8 hereto, has been put in place.

You and Uisce Éireann acknowledge that there shall be no intention to create any legally binding contract between You and Uisce Éireann unless and until You have complied with the steps outlined at 1 (a) – (d) above. If, in the opinion of Uisce Éireann, You have not fully complied with any of the steps outlined at 1 (a) – (d) above, no legally binding contract shall come into force between You and Uisce Éireann.

Once You have fully complied with the steps outlined at 1 (a) – (d) above, the Connection Agreement shall become legally binding on You and Uisce Éireann (to the extent that any of the steps outlined at 1 (a) – (d) occur on different days, the Connection Agreement shall commence on the last date on which all the steps have been fully complied with).

The **Connection Agreement** is comprised of this Connection Offer, the General Conditions, the Special Conditions and the remaining appendices hereto. In the event and to the extent that any conflict or inconsistency arises as between these documents, the following order of precedence shall apply:

i. Special Conditions
ii. General Conditions for Self-Lay Connections
iii. Connection Offer (and the remaining appendices hereto).

Uisce Éireann's decision to make a Connection Offer to You is made in reliance on the information contained in and submitted with the Connection Application. If the information supplied is incorrect or found to be materially inaccurate in any way, Uisce Éireann reserves the right to apply additional Connection Charges, to impose additional contract terms and/or take any steps in accordance with the General Conditions.

This Connection Offer is based on a high-level desk top analysis carried out by Uisce Éireann on the feasibility of a connection for your Development. Once the Connection Offer has been accepted by You, Uisce Éireann will begin a detailed design of the connection. If during the process of detailed design Uisce Éireann, at its discretion, forms the opinion (acting reasonably) that either:

A. a connection to your Development is not feasible or practicable or safe to complete; or
B. a connection to your Development would involve the expenditure by Uisce Éireann of monies in excess of that provided for by way of the Connection Charge,

then the Connection Agreement may be terminated by Uisce Éireann by way of written notice to the Customer.

The Connection Agreement shall constitute the entire agreement between You and Uisce Éireann.

Any reference in this Connection Offer to an Appendix is to an appendix to this Connection Offer.

The relevant Local Authority referred to in the General Conditions is: Limerick City and County Council

2. Validity of Connection Offer

You have 90 days from the date of this Connection Offer to comply with the steps outlined at 1 (a) – (d) above in order to validly accept this Connection Offer. Thereafter, the Connection Offer shall lapse unless otherwise agreed in writing by Uisce Éireann.

3. Connection Charge & Self-Lay Surety

The Connection Charge(s) shall be determined in accordance with Uisce Éireann's Connection Charging Policy as set out in the Water Charges Plan (which can be found at www.water.ie/connections)

(a) **Connection Charge**
The Water Connection Charge €196,984.00
The Wastewater Connection Charge €389,363.00

The Connection Charge is €586,347.00 (the "**Connection Charge**"); a breakdown of the Connection Charge is set out in Appendix 4.

Payment of the **Connection Charge** can be made by:

a. Cheque, made payable to "Uisce Éireann" or

b. Money Transfer, by EFT to the following bank account:

Allied Irish Bank, 40/41 Westmoreland Street, Dublin 2, Ireland

Account Name	BIC	IBAN
IW AR-EFT	AIBKIE2D	IE29 AIBK 9333 8464 3085 94

Please note that You must quote the Uisce Éireann reference number specified above in any communications and when making payment (*see 'Our Reference' on the first page of this letter*). The Connection Charge will only be deemed paid when funds have cleared in Uisce Éireann's bank account.

(b) **Self-Lay Surety**

In addition to the Connection Charge, You will also be obliged to provide Uisce Éireann with a Self-Lay Surety in the amount of €109,875.00 (the "**Self-Lay Surety**"); a breakdown of the Self-Lay Surety is set out in Appendix 4. The Self-Lay Surety can be made in the form of a cash bond (Please see Deposit Agreement in Appendix 8) or, alternatively, in any of the forms outlined in Uisce Éireann's Financial Security Policy (available at www.water.ie/connections).Please refer to General Conditions 10 & 11 for further information in respect of the Self-Lay Surety.

Payment of the **Self-Lay Surety** can be made by:

a. A separate Cheque, made payable to "Uisce Éireann" or

b. Money Transfer, by EFT to the following bank account:

Allied Irish Bank, 40/41 Westmoreland Street, Dublin 2, Ireland

Account Name	BIC	IBAN
IW AR-EFT	AIBKIE2D	IE29 AIBK 9333 8464 3085 94

Please note that You must quote the Uisce Éireann reference number specified above in any communications and when making payment (*see 'Our Reference' on the first page of this letter*). The Self-Lay Surety will only be deemed paid when funds have cleared in Uisce Éireann's bank account.

4. Queries

If You have any queries in relation to the payment of the Connection Charge/Self-Lay Surety or otherwise, please contact Uisce Éireann Customer Service Department:

Telephone: 1800 278 278 or +353 1 707 2828

Email: newconnections@water.ie

Web: www.water.ie/contact-us

5. Disputes

Any dispute in respect of the terms of this Connection Offer (including in relation to the Estimate of Connection Costs) may, upon your application, be referred to the Uisce Éireann complaints process. Details of the Uisce Éireann Complaints Process are available on the Uisce Éireann website.

Once a legally binding Connection Agreement is entered into, all disputes in relation to your agreement with Uisce Éireann shall be resolved pursuant to General Condition 36.

6. Next Steps

Accept the Offer: Once You have complied with the steps outlined at 1 (a) – (d) above, You will receive a receipt of payment and Uisce Éireann or its agent will contact You in accordance with the General Conditions.

Submit Your Commencement Notice at least fourteen (14) days in advance of commencement of the Self-Lay Works – email developerscheduling@water.ie (see General Condition 11.3.1).

Arrange a Pre-Construction Site Meeting with Uisce Éireann – email developerscheduling@water.ie, giving at least ten (10) days' notice (see General Condition 11.3.2).

Letter of Acceptance (This copy to be returned to Uisce Éireann duly completed)
Uisce Éireann
PO Box 860
South City Delivery Office
Cork City

I/We refer to the Connection Offer dated 24/07/2025 I/We confirm that I/we have read and understood the Connection Offer and the Appendices attached to the Connection Offer comprising the following:

Appendix 1	Connection Application
Appendix 2	General Conditions for Self-Lay Connection
Appendix 3	Special Conditions
Appendix 4	Connection Charge Summary
Appendix 5	Specification
Appendix 6	Codes of Practice and Standard Details
Appendix 7	Forms of Deed of Grant
Appendix 8	Required Security (as applicable)
Appendix 9	Quality Assurance Regime
Appendix 10	Register of Premises Serviced

Note: The documentation contained in **Appendix 6** and **Appendix 9** are included in the Memory Stick accompanying the Connection Offer. By accepting this letter, the Developer acknowledges and agrees that he/she has accessed the said Memory Stick and read and understood the contents thereof and that he/she acknowledges that these documents form part of the Connection Offer.

I/We also confirm that I/we will complete the Register of Premises Serviced (contained in **Appendix 10**) and provide it to Uisce Éireann at the required intervals.

I/We acknowledge that the Connection Agreement is formed by acceptance of the Connection Offer, which consists of the documents set out above, and I/we accept Uisce Éireann's Connection Offer for connection to the Network(s) specified in the Connection Offer on the terms and conditions set out therein.

I/we have read, understood, accept and agree to comply in full with the terms of the Connection Offer dated 24/07/2025 and all documents forming part of the Connection Agreement.

I/we further understand and acknowledge that there shall be no intention to create any legally binding contract between me/us and Uisce Éireann unless and until I/we have:

a) completed and returned this Letter of Acceptance;
b) paid the Connection Charge;
c) provided the required Self-Lay Surety. The Self-Lay Surety can be made in the form of a cash bond or, alternatively, in any of the forms outlined in Uisce Éireann's Financial Security Policy (available at www.water.ie/connections).;
d) provided confirmation any Required Security, as specified in Appendix 8 of the Connection Offer, has been put in place.

I/we have made payment for Connection Reference CDS2300489201 via

Electronic Funds Transfer EFT ☐
Cheque ☐

I/we have made Self-Lay Surety payment for Connection Reference CDS2300489201 via

Electronic Funds Transfer EFT ☐
Cheque ☐

I/we have completed any ancillary agreement documents required under the Uisce Éireann Financial Security Policy in connection with the Self-Lay Surety ☐

Developer Name: GLR Property LTD. (772919)

Developer Address: 38 Palmerston Road,
Dublin,
Dublin 6,
D06YW68

Developer Reference: CDS2300489201

Developer Site Address Golf Links Road, Newtown, Monaleen, Limerick

Developer's signature: _____

For and on behalf of: _____

Print full name of Developer in BLOCK letters: _____

Date: _____

Letter of Acceptance (This Copy to be retained by You)
I/We refer to the Connection Offer dated 24/07/2025 I/We confirm that I/we have read and understood the Connection Offer and the Appendices attached to the Connection Offer comprising the following:

Appendix 1	Connection Application
Appendix 2	General Conditions for Self-Lay Connection
Appendix 3	Special Conditions
Appendix 4	Connection Charge Summary
Appendix 5	Specification
Appendix 6	Codes of Practice and Standard Details
Appendix 7	Forms of Deed of Grant
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Note: The documentation contained in **Appendix 6** and **Appendix 9** are included in the Memory Stick accompanying the Connection Offer. By accepting this letter, the Developer acknowledges and agrees that he/she has accessed the said Memory Stick and read and understood the contents thereof and that he/she acknowledges that these documents form part of the Connection Offer.

I/We also confirm that I/we will complete the Register of Premises Serviced (contained in **Appendix 10**) and provide it to Uisce Éireann at the required intervals.

I/We acknowledge that the Connection Agreement is formed by acceptance of the Connection Offer, which consists of the documents set out above, and I/we accept Uisce Éireann's Connection Offer for connection to the Network(s) specified in the Connection Offer on the terms and conditions set out therein.

I/we have read, understood, accept and agree to comply in full with the terms of the Connection Offer dated 24/07/2025 and all documents forming part of the Connection Agreement.
I/we further understand and acknowledge that there shall be no intention to create any legally binding contract between me/us and Uisce Éireann unless and until I/we have:

a) completed and returned this Letter of Acceptance;
b) paid the Connection Charge;
c) provided the required Self-Lay Surety. The Self-Lay Surety can be made in the form of a cash bond or, alternatively, in any of the forms outlined in Uisce Éireann's Financial Security Policy (available at www.water.ie/connections).;
d) provided confirmation any Required Security, as specified in Appendix 8 of the Connection Offer, has been put in place.

I/we have made payment for Connection Reference CDS2300489201 via

Electronic Funds Transfer EFT ☐
Cheque ☐

I/we have made Self-Lay Surety payment for Connection Reference CDS2300489201 via

Electronic Funds Transfer EFT ☐
Cheque ☐

I/we have completed any ancillary agreement documents required under the Uisce Éireann Financial Security Policy in connection with the Self-Lay Surety ☐

Developer Name: GLR Property LTD. (772919)

Developer Address: 38 Palmerston Road,
Dublin,
Dublin 6,
D06YW68

Developer Reference: CDS2300489201

Developer Site Address Golf Links Road, Newtown, Monaleen, Limerick

Developer's signature: _____

For and on behalf of: _____

Print full name of Developer in BLOCK letters: _____

Date: _____

Appendices to Connection Offer:

Appendix 1 Connection Application

Appendix 2 General Conditions for Self-Lay Connection

Appendix 3 Special Conditions

Appendix 4 Connection Charge Summary

Appendix 5 Specification

Appendix 6 Codes of Practice and Standard Details

Appendix 7 Forms of Deed of Grant

Appendix 8 Security (if required)

Appendix 9 Quality Assurance Regime

Appendix 10 Register of Premises Serviced

Appendix 1

Connection Application

Appendix 2

General Conditions for a Self-Lay Connection

UISCE ÉIREANN

General Conditions for a Self-Lay Connection
(Version 0.2)

February 2019

General Conditions for a Self-lay Connection
(the "General Conditions")

1. **Definitions:** In these General Conditions the following definitions apply:

"Affiliate" of a Person means any subsidiary or holding company (within the meaning given to such expressions by the Companies Act 2014) of such Person or any subsidiary of any such holding company;

"Applicable Law" means all Acts of the Oireachtas, statutory instruments, regulations, orders and other legislative provisions which in any way relate to the Connection Agreement, including the Water Services Acts, the Building Regulations, the Construction Regulations and any code or guidance as may be issued from time to time by any Regulator or relevant industry authority. Any reference to "Applicable Law" or any enactment or statutory provision is a reference to it as it may have been, or may from time to time be amended, modified, consolidated or re- enacted;

"Building Regulations" mean the Building Control Acts 1990 to 2014 and all subordinate legislation and regulations made pursuant to the said Acts including, without limitation the Building Control Regulations 1997 to 2015, the Building Regulations 1997 to 2017 and relevant codes of practice, and any amendment, update or replacement or repeal thereof;

"Business Day" means every day other than a Saturday or Sunday or bank or public holiday in Ireland;

"**Competent Authority**" means any local or national or supra-national agency, authority, department, inspectorate, ministry, official or public or statutory Person (whether autonomous or not) or regulatory authority of Ireland or of the European Union which has jurisdiction over any of the Parties to the Connection Agreement and the subject matter of the Connection Agreement, including the Commission for Regulation of Utilities but excluding a court or tribunal of competent jurisdiction;

"Completion Certificate" means a written certificate in the form specified in Schedule 1, Part 1 of these General Conditions, provided by Uisce Éireann to the Developer pursuant to General Condition 11.19;

"Conformance Certificate" means a written certificate in the form specified in Schedule 1, Part 2 of these General Conditions provided by Uisce Éireann to the Developer pursuant to General Condition 11.15;

"Connection Agreement" means the agreement between the Developer and Uisce Éireann to facilitate the connection of the Water & Wastewater Services Infrastructure to the Network(s), which shall be comprised of the Connection Offer (including the appendices thereto), the General Conditions and the Specific Conditions (if any);

"**Connection Application**" means the application submitted by the Developer to Uisce Éireann in relation to the Service Connection(s), as set out in Appendix 1 of the Connection Offer;

"Connection Charge" means the charge for connecting to the Network(s) as specified in the Connection Offer. The Connection Charge shall only be deemed paid when funds have cleared in Uisce Éireann's bank account;

"Connection Facilities" means the facilities (including the Service Connection(s)) required to be constructed and/or upgraded and installed by Uisce Éireann in order to connect the Water & Wastewater Services Infrastructure to the Network(s);

"Connection Offer" means the conditional offer letter issued by Uisce Éireann to the Developer relating to the connection of the Water & Wastewater Services Infrastructure to the Network(s) and which forms part of the Connection Agreement;

"Connection Point(s)" means the location or locations to be determined by Uisce Éireann (which shall be at the boundary to the curtilage of the Development) at which the Water & Wastewater Services Infrastructure is to be connected to the Waterworks (where, as specified in the Connection Offer, the Developer requires connection to the Waterworks) or the Wastewater Works (where, as specified in the Connection Offer, the Developer requires connection to the Wastewater Works) (via the Service Connection(s)). Connection Points may differ for Waterworks and Wastewater Works;

"Connection Works" means the permanent and temporary works and services to be performed by or on behalf of Uisce Éireann in the acquisition, design, procurement, construction, and installation of the Connection Facilities, and the obtaining of permits, and the tie-in and commissioning of a Connection Point(s) in accordance with the requirements of this Connection Agreement;

"**Construction Regulations**" means the Safety Health and Welfare at Work Act 2005, the Safety Health and Welfare at Work (General Application) Regulations 2007 to 2016 as amended, the Safety Health and Welfare at Work (Construction) Regulations 2013 as amended and any guidance requirements issued from time to time from the Health and Safety Authority;

"**Data Protection Legislation**" means the Data Protection Acts 1988-2018, where applicable, as amended from time to time and any regulations or enactments thereunder, Regulation (EU) 2016/679 (the "General Data Protection Regulation" or "GDPR") and all Irish and European Union (with direct effect) laws and regulations relating to processing of personal data and privacy for the time being in force in Ireland.

"Deed(s) of Grant of Wayleaves and Easements" means the Deed(s) of Grant of Wayleaves and Easements referred to in General Condition 13 hereof;

"Defects Liability Period" which means a period of 12 months from the date of the Conformance Certificate or 12 months after the Developer's connection of the water

service connection and boundary box to the last Premises in the Development, whichever is the later, (save where such period is extended by Uisce Éireann), as referred to in General Condition 11.15;

"Developer" means the person or entity to whom the Connection Offer is addressed and who has entered into the Connection Agreement with Uisce Éireann;

"Development" means the housing or housing/mixed use development located at the address set out in the Connection Offer and identified in the map set out in the Specification, including the Premises, the Water & Wastewater Services Infrastructure to be constructed pursuant to this Connection Agreement and all ancillary infrastructure relating thereto;

"**Dispute**" means a difference or dispute between the Parties arising out of or in connection with this Connection Agreement;

"Distribution System" means a pipe and its related fittings, that is used or to be used as the case may be to convey water into or through one or more Premises (including any related internal or external taps) excluding a Service Connection;

"Drain" means a drainage pipe, or system of such pipes and related fittings for collection of Wastewater, that is not owned by, vested in or controlled by Uisce Éireann, and that is not a Service Connection, which is used or to be used as the case may be, to convey Wastewater from one or more Premises or to any wastewater treatment system on a Premises where the Wastewater is generated;

"**Environment**" means the environment generally, including all physical, biological and ecological aspects of the environment and:

(a) air, including that within buildings or natural or man-made structures above or below ground;

(b) water, including the open sea, coastal or inland waters, ground waters, aquifers, drains and sewers;

(c) land, including the seabed or riverbed under any water as described above, and any surface land and sub-surface land; and

(d) human and animal health, and plant life;

"**Environmental Law**" means any statute or common law, or other requirement having the effect of law, in Ireland relating to the Environment, including without limitation the provisions of the Water Services Acts and Local Government (Water Pollution) Acts 1977 to 2007;

"**Environmental Protection Agency**" means the Environmental Protection Agency established pursuant to the Environmental Protection Agency Act, 1992;

"Final Documents" shall be as defined in the Code of Practice for Wastewater Infrastructure and outlined at General Condition 1.8 thereof (where connection is made to the Wastewater Works) and/or the Code of Practice for Water Infrastructure and outlined at General Condition 1.7 thereof (where connection is made to the

Waterworks), as applicable. Both Codes are included in Appendix 6 to the Connection Offer which forms part of this Connection Agreement;

"Force Majeure" means any event not within the reasonable control of a Party and which could not have been prevented or the consequences of which could not have been prevented by a Party acting and having acted as a Reasonable and Prudent Operator/Person and which has the effect of preventing a Party from complying with its obligations under this Connection Agreement, including:

- acts of terrorists;
- war declared or undeclared, blockade, protest, revolution, riot, insurrection, civil commotion, invasion or armed conflict;
- sabotage or acts of vandalism, criminal damage or the threat of such acts;
- extreme weather or environmental conditions including drought, extreme storms, lightning, fire, landslip, accumulation of snow or ice, natural disasters, and phenomena including meteorites, the occurrence of pressure waves caused by aircraft or other aerial devices travelling at supersonic speeds, impact by aircraft, volcanic eruption, explosion including nuclear explosion, radioactive or chemical contamination or ionising radiation;
- any change of legislation, governmental order, restraint or directive having the effect of preventing or delaying the performance of any obligation hereunder;
- a strike or any other form of industrial actions by persons employed by the affected Party or by any Affiliate of the affected Party or by a local authority or by any contractor, subcontractor or agent of the affected Party or any such Affiliate or local authority;
- any strike which is part of a labour dispute of a national character occurring in Ireland or elsewhere;
- the act or omission of any contractor, subcontractor or supplier of either Party but only if due to an event which, but for the contractor, subcontractor or supplier not being a Party to the Connection Agreement, would have been Force Majeure;
- an outbreak of foot and mouth or any other restrictions put in place as part of a strategy to contain a communicable disease in Ireland; and
- the collapse of the euro currency;

provided that the following shall not constitute Force Majeure:

- lack of funds and/or the inability of a Party to pay;
- mechanical or electrical breakdown or failure of machinery or plant owned or operated by either Party other than as a result of the circumstances identified above; and

- any of the events referred to in General Condition 37 that result in modification of this Connection Agreement;

"Uisce Éireann" means Uisce Éireann (Uisce Éireann) a designated activity company incorporated in Ireland (company registration number 530363) and having its registered office at 24-26 Talbot Street, Dublin 1;

"Local Authority" means the relevant local authority referred to in the Connection Offer;

"**Legal Requirement**" means any Applicable Law, legislation or directive, regulation, requirement, instruction, direction or rule of any Competent Authority binding on either or all of the Parties to this Connection Agreement and includes any modification, extension or replacement thereof in force during the Term;

"Network(s)" means the Waterworks and/or the Wastewater Works, as applicable and specified on the face of the Connection Offer, and any related lands, which are owned by, vested in, controlled or used by Uisce Éireann;

"PRA Compliant Map" means ordinance survey plans, suitable for registration of any Deed of Grant of Wayleaves and Easements relating to property intended to be taken in charge by the Local Authority and the Water & Wastewater Services Infrastructure to be vested in Uisce Éireann together with all easements relating thereto suitably identified by the relevant symbols and/or colours designated by the Property Registration Authority.

"Premises" means any premises within the Development which are specified or referred to in the Connection Offer, including any part of any public or private building, vessel, vehicle, structure or land (whether or not there are structures on the land and whether or not the land is covered with water), and any plant or related accessories on or under such land, or any hereditament of tenure, together with any out-buildings and curtilage and which is:

- to receive Water Services; or

- specified in the Connection Application; or

- a premises deemed to be a premises by Uisce Éireann; or

- such other premises as may be notified by the Developer to Uisce Éireann and accepted in writing by Uisce Éireann from time to time,

but does not include land which is a Public Road, a road which is the subject of an order under Section 11 of the Roads Act 1993 or a road which has been taken in charge by a local authority pursuant to a non-statutory local authority taking in charge scheme;

"Premises Pipe Work" means the pipe, related fittings and associated accessories to be laid by the Developer within the boundary of a Premises in accordance with Relevant Standards, Requisite Consents and Applicable Laws and the Distribution System (if connecting to the Waterworks) and Drains (if connecting to the Wastewater Works), to be used to connect the Premises with the Water & Wastewater Services Infrastructure;

"Public Road" means a road over which a public right of way exists and the responsibility for the maintenance of which rests with a road authority;

"**Reasonable and Prudent Operator(/Person)**" means a person acting in good faith with the intention of performing its contractual obligations hereunder and in so doing and who in the general conduct of its undertaking exercises that degree of skill, prudence and foresight which would reasonably and ordinarily be exercised by a skilled and experienced operator complying with Applicable Law engaged in the same type of undertaking under the same or similar circumstances and conditions and the expression "**Standard of a Reasonable and Prudent Operator(/Person)**" shall be construed accordingly;

"Regulator" means where applicable all present and future regulatory bodies having jurisdiction over Uisce Éireann including, but not limited to, the Commission for Regulation of Utilities, the Environmental Protection Agency, the Minister of Housing, Planning and Local Government, the Office of the Data Protection Commissioner, the Competition and Consumer Protection Commission and/or any other statutory body or regulatory authority which regulates on an on-going basis or from time to time the business or operations of Uisce Éireann;

"Relevant Standards" means the Codes of Practice and Standard Details set out in Appendix 6 to the Connection Offer;

"Required Security" means the financial security required by Uisce Éireann, as specified in Appendix 8 of the Connection Offer;

"**Requisite Consents**" means all necessary permissions, consents, approvals, licenses, easements, certificates and permits as may be necessary for the Developer to lawfully commence, carry out, maintain and complete its obligations pursuant to this Connection Agreement;

"Service Connection" means a water supply pipe or drainage pipe, together with any accessories and related fittings, extending from a Waterworks (where, as specified in the Connection Offer, the Developer requires connection to the Waterworks) or Wastewater Works (where, as specified in the Connection Offer, the Developer requires connection to the Wastewater Works) to the outer edge of the boundary to the curtilage of the Development and used, or to be used as the case may be, for the purpose of connecting the Water & Wastewater Service Infrastructure in the Development with the Waterworks and/or Wastewater Works (as the case may be);

"Self-Lay Surety" has the meaning given to it in General Condition 10.2;

"Self-Lay Works" means all works to be carried out by the Developer in connection with the construction of the Water & Wastewater Services Infrastructure, the Premises Pipe Work (which includes the Distribution System and the Drains) and any related works required to provide Water Services to the Premises within the Development, including:

(a) the provision, installation, testing and commissioning of the Water & Wastewater Services Infrastructure within the boundary of the Development; and

(b) the provision, installation, testing and commissioning of the Premises Pipe Work within the boundary to the curtilage of the Premises necessary to connect the Premises, Distribution System (if connection is to Waterworks) and Drain(s) (if connection is to Wastewater Works) to the Water & Wastewater Services Infrastructure.

These works shall be approximately in the position and at the levels indicated on drawing or drawings in the Specification and in accordance with the design that has been submitted with the Connection Application.

"Specification" means Uisce Éireann's specification for the Water & Wastewater Services Infrastructure as set out in Appendix 5 to the Connection Offer;

"Sewage" and "**Sewage Effluent"** have the meanings assigned to them by the Local Government (Water Pollution) Acts 1977 to 2007;

"Sewers" means sewers of every description, excluding Storm Water Sewers, owned by, vested in or controlled by Uisce Éireann, but does not include a Drain or Service Connection;

"Special Conditions" means any special conditions attached to the Connection Offer or as may be agreed from time to time;

"Storm Water" means run-off rainwater that enters any pipe;

"Storm Water Sewer" means any pipe or other conduit (a) used solely for the conveyance of Storm Water; or (b) designed or intended to be used for the conveyance of Storm Water (whether or not it is connected to a sewer by a 'storm water overflow' within the meaning of the Waste Water Discharge (Authorisation) Regulations 2007;

"Term" means the term of this Connection Agreement as provided for in General Condition 25.1;

"Wastewater" means Sewage or other Sewage Effluent discharged, or to be discharged, to a Drain, Service Connection or Sewer but does not include Storm Water;

"**Wastewater Works**" means Sewers and their accessories, and all other associated physical elements used for collection, storage, measurement or treatment of Wastewater, and any related lands, which are owned by, vested in, controlled or used by Uisce Éireann;

"**Water & Wastewater Services Infrastructure**" means (where according to the Connection Offer connection is to be made to the Waterworks) the water supply pipework and/or (where according to the Connection Offer connection is to be made to the Wastewater Works) the Wastewater collection pipework and all related fixtures, fittings and accessories to be constructed and laid by the Developer within the Development, as applicable, pursuant to this Connection Agreement, including all connections and pipework extending to the outer boundary of any individual Premises but excluding any Premises Pipe Work;

"Water Main" means water supply pipes owned by, vested in or controlled by Uisce Éireann but does not include pipes, fittings and appliances to which the terms "Service Connection" or "Distribution System" apply;

"Water Services" means all services, including the provision of water intended for human consumption, which provide storage, measurement, treatment or distribution of surface water, ground water, and/or Wastewater collection, storage, measurement, treatment or disposal;

"Water Services Acts" means the Water Services Acts 2007 to 2017; and

"Waterworks" means water sources, Water Mains and their accessories, and all other associated physical elements used for the abstraction, treatment, storage, measurement or distribution of water, and any related land, which are owned by, vested in, controlled or used by Uisce Éireann.

2. **Interpretation**: Unless the context otherwise requires, any reference in this Connection Agreement to:

2.1 any gender includes the other;

2.2 a statute, bye laws, regulation, delegated legislation or order is to the same as amended, modified or replaced from time to time and to any bye law, regulation, delegated legislation or order made thereunder;

2.3 any agreement, instrument or code is to the same as amended, novated, modified, supplemented or replaced from time to time;

2.4 unless otherwise specified any reference in this Connection Agreement to a "General Condition"/"GC" or "Special Condition"/"SC"" is a reference to a General Condition or Special Condition in this Connection Agreement;

2.5 "**including**" means comprising but not by way of limitation to any event, class, list or category;

2.6 a "**Person**" shall be construed as a reference to any natural or legal person, firm, company, corporation, Government or Agency of a State or any association or partnership (whether or not having separate legal personality). A Person includes that person's legal or personal representative, permitted assigns and successors;

2.7 "**Party**" means a Party to this Connection Agreement and "**Parties**" shall be construed accordingly;

2.8 the singular shall include the plural and vice versa;

2.9 words not otherwise defined that have well-known and generally acceptable technical or trade meanings in the water industry are used in this Connection Agreement in accordance with such recognised meanings;

2.10 where a word or expression is defined in this Agreement, related words and expressions shall be construed accordingly;

2.11 headings are for ease of reference only and shall not affect its construction;

2.12 time shall be construed by reference to whatever time is applicable in Ireland;

2.13 where a Party is required to use "**all reasonable endeavours**" that Party should explore all avenues reasonably open to it, and explore them all to the extent reasonable, but the Party is neither obliged to disregard its own commercial interests, nor required to continue trying to comply if it is clear that all further efforts would be futile; and

2.14 references to the "Commission for Regulation of Utilities" shall include any Competent Authority which may replace or succeed the Commission and assume its functions in relation to the regulation of the water industry in Ireland.

3. **Defined Terms in Connection Offer:** Terms which appear in uppercase in these General Conditions which are not otherwise defined shall have the meaning given to them in the Connection Offer.

4. **Order of Precedence:** In the event of inconsistency or conflict between the Connection Offer, the General Conditions and the Special Conditions, the following order of precedence will apply: (1) Special Conditions (2) General Conditions (3) Connection Offer (and the remaining appendices thereto).

5. **Regulated Entity:** Uisce Éireann operates within a regulatory framework governed by the Regulators.

6. **New Connection:** Uisce Éireann shall charge and the Developer has agreed to pay in full the Connection Charge notified to the Developer in the Connection Offer. Following payment by the Developer and satisfaction of all other conditions set out in the Connection Offer, Uisce Éireann shall perform or procure a third Party to perform its obligations under the Connection Agreement and the Developer shall perform its obligations under the Connection Agreement.

7. **Sub-contractors/Agents:** The Developer acknowledges that Uisce Éireann may sub-contract or engage an agent to perform certain of the obligations of Uisce Éireann pursuant to the Connection Agreement, in which case Uisce Éireann shall not be relieved of any obligation or liability with respect to its rights or obligations under the Connection Agreement. The Developer shall have no recourse to any such third Party; the Developer's sole recourse shall be to Uisce Éireann in accordance with the Connection Agreement.

8. **Rights and obligations under law.** Nothing in this Connection Agreement shall affect or prejudice any rights, duties or obligations of the Parties under Applicable Laws.

9. **Principal Obligations:**

9.1 Provided the Developer carries out the Self-Lay Works in accordance with this Connection Agreement, Uisce Éireann will carry out the Connection Works, or procure a third Party to carry out the Connection Works, to facilitate the connection of the Water & Wastewater Services Infrastructure to the Waterworks and/or Wastewater Works (as specified in the Connection Offer).

9.2 Uisce Éireann shall perform its obligations under the Connection Agreement in accordance with the Standard of a Reasonable and Prudent Operator and the terms and conditions of this Connection Agreement.

9.3 The Developer warrants that it shall:

9.3.1 carry out its obligations hereunder in a good and workmanlike manner to facilitate the connection of the Water & Wastewater Services Infrastructure to the Waterworks and/or Wastewater Works (as the case may be and as specified in the Connection Offer);

9.3.2 proceed with its obligations hereunder diligently and in accordance with the programme agreed for the works with Uisce Éireann;

9.3.3 comply with all Relevant Standards and Applicable Laws and obtain and comply with the Requisite Consents;

9.3.4 if required by Uisce Éireann in the Connection Offer, acquire all rights for the laying of any Uisce Éireann pipes forming part of the Connection Facilities; and

9.3.5 comply with all requirements and conditions made or imposed in or as a condition to the granting of any of the Requisite Consents, including but not limited to discharging all financial contributions, bonds, levies, licence fees, payments and deposits contained in, or

required to obtain the, Requisite Consents.

10. Connection Charge & Self-Lay Surety:

10.1 The Developer shall, as a pre-condition to the effectiveness of the Connection Agreement:

10.1.1 make payment to Uisce Éireann of the Connection Charge set out in the Connection Offer; and

10.1.2 provide to Uisce Éireann the required Self-Lay Surety (see below).

10.2 The Self-Lay Surety is a form of financial security to be retained by Uisce Éireann to secure the execution of any works of accommodation or works of repair, reconstruction, rectification and making good of defects imperfections, shrinkages or other faults in respect of the Water & Wastewater Services Infrastructure pursuant to General Condition 11.17 or any other costs which may be deducted as set out in this Agreement (the "**Self-Lay Surety**").

11. Self-Lay Works

11.1 Based on the information provided in the Connection Application, Uisce Éireann has drawn up the Specification for the Water & Wastewater Services Infrastructure. The Specification identifies the Connection Point(s) and sets out that the Water & Wastewater Services Infrastructure shall be constructed at the Development in accordance with the Relevant Standards.

11.2 The Developer shall have submitted for approval in advance of the making of a Connection Application to Uisce Éireann the information contained in Section 2.3 (Design Submission) of the Code of Practice for Water Infrastructure and the Code of Practice for Wastewater Infrastructure (both appended to the Connection Offer) and this will form the basis of the Specification for the approved Water & Wastewater Service Infrastructure.

11.3 The Developer must comply with the following conditions prior to the commencement of the Self-Lay Works:

11.3.1 a Commencement Notice (a form of which may be found on the USB appended to the Connection Offer) must be submitted to Uisce Éireann at developerscheduling@water.ie at least fourteen (14) days in advance of commencement of the Self-Lay Works; and

11.3.2 a pre-construction site meeting must be held with Uisce Éireann in order to agree a start date, programme of works and arrangements for inspections by or on behalf of Uisce Éireann. The Developer should email developerscheduling@water.ie at least ten (10) days in advance of the proposed meeting to agree a date and time for the pre-construction meeting with Uisce Éireann.

Any failure by the Developer to adhere to the conditions stipulated in this General Condition may result in delays to the commencement of the Self-Lay Works.

11.4 The Developer shall carry out the Self-Lay Works and construct the Water & Wastewater Services Infrastructure at its own expense and in full compliance with:

11.4.1 the Specification;

11.4.2 the programme, method statement(s), construction practices, inspection arrangements and risk assessments that are agreed as part of the pre-construction site meeting, referred to in General Condition 11.3 above;

11.4.3 the design agreed with Uisce Éireann;

11.4.4 the Relevant Standards;

11.4.5 Applicable Laws, including, without limitation, Environmental Law;

11.4.6 the Requisite Consents;

11.4.7 this Connection Agreement (including, for the avoidance of doubt, the Connection Offer and the documents appended thereto).

11.5 The Developer agrees that only Uisce Éireann or its agent(s) is permitted to carry out the Connection Works and the Developer shall ensure that no flows shall pass through the Water & Wastewater Services Infrastructure unless and until Uisce Éireann agrees otherwise.

11.6 The Developer shall arrange for Uisce Éireann and its agents and contractors to have safe, free and unrestricted access at all reasonable times to the areas where the Self-Lay Works relating to the Water & Wastewater Services Infrastructure are being carried out so as to undertake quality assurance activities in accordance with the 'Quality Assurance Regime' set out in Appendix 9 of the Connection Offer and/or to complete the Connection Works.

11.7 Uisce Éireann (including its agents and contractors) shall have the right at all times to enter upon and temporarily occupy so much of the area where such works referred to above are being carried out as may be reasonably required for completing any works incidental to the Connection Works and Uisce Éireann may break open or otherwise interfere with such areas so far as may be reasonably necessary for the purposes aforesaid or for the purpose of carrying out the Connection Work(s) or for making plans, surveying, measuring, taking levels, examining, inspecting, maintaining, altering, repairing, renewing or removing any pipe. Uisce Éireann (including its agents and contractors) shall also have the right at all times to enter upon and temporarily occupy so much of the area as may be required in order to inspect the Water & Wastewater Services Infrastructure, observe the carrying out of the Self-Lay Works, as outlined in the 'Quality Assurance Regime' in set out in Appendix 9 of the Connection Offer or rectify defects in the Water & Wastewater Services Infrastructure.

11.8 To agree any changes in the Specification, or to discuss proposals to rectify any notified defects, the Developer (or a contractor on behalf of the Developer) must give a minimum of five (5) days (excluding Saturdays, Sundays and public/bank holidays) notice in writing to Uisce Éireann (or such shorter period as Uisce Éireann may agree). A meeting involving the Developer, the contractor (if applicable) and Uisce Éireann must then be held and Uisce Éireann's written

consent must be obtained by the Developer before any change to the Specification is commenced.

11.9 The Developer shall ensure that all operations necessary to carry out the Self-Lay Works shall be carried on so as not to interfere unnecessarily or improperly with public convenience or access to or use or occupation of public or private roads and footpaths and the Developer shall indemnify Uisce Éireann in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever and howsoever arising out of or in relation to any such matters.

11.10 The Developer shall ensure that the Self-Lay Works shall be carried out without unreasonable noise, odour(s) and/or disturbance. The Developer shall indemnify Uisce Éireann from and against any liability for damages on account of noise, odour(s) or other disturbance created while carrying out the Self-Lay Works and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in regard or in relation to such liability.

11.11 The Developer shall ensure that the following minimum insurance cover is in place throughout the Term and until (a) a Completion Certificate is issued by Uisce Éireann and tie-in occurs (in the case of insurances listed at General Condition 11.11.1 to 11.11.4 below; and (b) the sixth anniversary of the date of the Completion Certificate, in the case of professional indemnity insurance (General Condition 11.11.5 below):

11.11.1 **Employers Liability** insurance cover with a minimum indemnity limit of €13,000,000 any one accident/occurrence and unlimited in the aggregate;

11.11.2 **Public/Products/Pollution Liability** insurance cover with a minimum indemnity limit of €6,500,000 any one accident/occurrence unlimited in the period of insurance under the Public Liability and in the aggregate in respect of Products & Pollution Liability;

11.11.3 **Contractors "All Risks"** insurance for the full reinstatement value of the proposed works in respect of any one claim;

11.11.4 **Motor insurance** cover with a minimum third party property damage limit of €6,500,000 for all vehicles owned, leased, rented or run (to include tool of trade use) by the Developer (including any Contractor(s) or agents) in connection with the services to be provided by it; and

11.11.5 **Professional Indemnity** insurance with a minimum indemnity limit of €2,600,000 in respect of any one claim and limited in the aggregate.

Insurance cover effected pursuant to this General Condition shall, with the exception of Professional Indemnity and Motor, include a specific indemnity to Uisce Éireann.

11.12 The Developer shall, in advance of commencing any works and thereafter upon request, provide to Uisce Éireann:

11.12.1 confirmation in writing that the insurance policies effecting the insurance referred to in this General Condition 11 (including levels of excess, limits of cover and territory) are in place;

11.12.2 proof that all relevant premia have been paid and that the relevant policy or policies remain up to date and in existence.

11.13 The Developer shall notify Uisce Éireann in writing when the Water & Wastewater Services Infrastructure has been completed and is ready to be connected to the Waterworks and/or Wastewater Works (as the case may be). This notification shall be accompanied by a set of Final Documents.

11.14 Within 5 Business Days of the notification as outlined above, Uisce Éireann will inspect the Water & Wastewater Services Infrastructure and the Final Documents. Uisce Éireann reserves the right to request rectification of any defects found in the Water & Wastewater Services Infrastructure, and to request amendments of the Final Documents, should they be found to be not in accordance with this Connection Agreement. Such remediation of the Water & Wastewater Services Infrastructure and rectification of the Final Documents shall be undertaken in the timeline set out by Uisce Éireann.

11.15 Subject to Uisce Éireann being satisfied that:

11.15.1 the Water & Wastewater Services Infrastructure has been completed in accordance with this Connection Agreement;

11.15.2 the Final Documents provided by the Developer are in order; and

11.15.3 the Developer has fully complied with its obligations in General Condition 13 hereof;

it shall issue to the Developer in writing a certificate of conformance (the "**Conformance Certificate**"). This shall commence the Defects Liability Period during which time the Developer is responsible for the making good of defects imperfections, shrinkages or other faults in respect of the Water & Wastewater Services Infrastructure as may be required in writing by Uisce Éireann. The Defects Liability Period may be extended by Uisce Éireann for a period equal to the sum of any periods after the issue of the Conformance Certificate during which the Water & Wastewater Services Infrastructure cannot be used for Water Services by reason of a defect or damage or where the Water & Wastewater Services Infrastructure have not been completed in accordance with this Agreement.

11.16 Uisce Éireann shall use reasonable endeavours to complete the Connection Works within 20 Business Days of the date of issue of the Conformance Certificate.

11.17 Uisce Éireann shall undertake inspections, surveys, investigations to assess the continued adequacy of the Water & Wastewater Services Infrastructure during the Defects Liability Period. When required, Uisce Éireann will notify the Developer in writing of the need for repair, reconstruction or rectification works

in relation to the Water & Wastewater Services Infrastructure. The Developer shall execute or secure the execution of all works of accommodation or works of repair, reconstruction, rectification and making good of defects imperfections, shrinkages or other faults in respect of the Water & Wastewater Services Infrastructure, as may be required of the Developer in writing by Uisce Éireann during the Defects Liability Period. All such works shall be carried out at the Developer's expense. If the Developer shall fail to execute or secure the execution of works as aforesaid Uisce Éireann shall be entitled to carry out such works and shall be entitled to recover from the Developer the costs and expenses reasonably incurred by Uisce Éireann in so doing by way of a deduction from the Self-Lay Surety.

11.18 The Self-Lay Surety shall be returned to the Developer within twenty eight (28) days of the expiry of the Defects Liability Period or the issue of the Completion Certificate, whichever is later subject to any deductions made pursuant to Clause 11.19 and subject to the Water & Wastewater Services Infrastructure being deemed by Uisce Éireann to be in compliance with this Connection Agreement.

11.19 Upon expiry of the Defects Liability Period and subject to the completion of the works specified in the Schedule of Corrections (as appended to the Conformance Certificate, or otherwise issued to the Developer) to the satisfaction of Uisce Éireann, Uisce Éireann shall issue a Completion Certificate to the Developer. The Developer hereby acknowledges and agrees that it will reimburse Uisce Éireann for any costs incurred:

11.19.1 in undertaking any works referred to in General Condition 11.17 or any other works of construction, reconstruction, maintenance, rectification or repair or making good of defects imperfections, shrinkages or other faults by reason of the Developer or its contractor failing to complete in a good and workmanlike manner and in accordance with this Connection Agreement the entirety of the Water & Wastewater Services Infrastructure; and

11.19.2 towards invoices or sums payable by virtue of any actions, claims or demands made against Uisce Éireann by any third Party as a result of any act or default by the Developer or its contractor.

11.20 The Developer hereby acknowledges and agrees that, in the event the Developer fails to reimburse Uisce Éireann for its reasonable costs as referred to in General Conditions 11.17 and/or 11.19, Uisce Éireann shall be entitled to seek deduction of the relevant amount(s) from the Self-Lay Surety.

11.21 The rights and obligations of the Parties in relation to the Defects Liability Period shall survive the termination or expiry of this Connection Agreement.

12. Ownership of Infrastructure

12.1 The Developer agrees that the Water & Wastewater Service Infrastructure shall vest in Uisce Éireann upon such date as Uisce Éireann issues a Conformance Certificate.

12.2 Notwithstanding the vesting of the Water & Wastewater Service Infrastructure in Uisce Éireann pursuant to General Condition 12.1, the Developer acknowledges and accepts that, pending the issue of the Completion Certificate by Uisce Éireann, the maintenance and operation of any water supply and Wastewater collection pumping stations and/or rising mains included within the Water & Wastewater Services Infrastructure will remain the responsibility of the Developer and/or any estate management company to which relevant assets have been transferred by the Developer. In the event that such maintenance and/or operation are not undertaken by the Developer and/or any estate management company, Uisce Éireann reserves the right to undertake these functions and to recover its reasonable costs from the Developer. Otherwise, Uisce Éireann shall have no responsibility for the operation and maintenance of any water supply and Wastewater collection pumping stations and/or rising mains included within the Water & Wastewater Services Infrastructure and no liability, howsoever arising, shall attach to Uisce Éireann in this regard.

13 Title, Warranty and Registration, Wayleaves and Easements

13.1 The Developer hereby warrants and agrees that it has or can procure legal title to grant Uisce Éireann all rights contained in the Deed(s) of Grant of Wayleaves and Easements and that where appropriate it has obtained all necessary consents including the consent of any financial institution or third Party.

13.2 Prior to Uisce Éireann issuing a Conformance Certificate as set out at General Condition 11.15, the Developer shall:

13.2.1 deliver for approval by Uisce Éireann the PRA Compliant Map;

13.2.2 deliver to Uisce Éireann a duly executed Deed of Grant of Wayleaves and Easements (in duplicate) in the form as set out in Appendix 7, Part A of the Connection Offer for the benefit of Uisce Éireann and the Water & Wastewater Services Infrastructure over all the lands which are intended to be taken in charge by the Local Authority **TOGETHER WITH** the PRA Compliant Map; and

13.2.3 Where the Water & Wastewater Services Infrastructure is not entirely comprised within the boundaries of the lands which are intended to be taken in charge by the Local Authority identified in the Connection Offer Letter, the Developer shall deliver to Uisce Éireann a duly executed Deed of Grant of Wayleaves and Easements (in duplicate) in the form as set out at Appendix 7, Part A of the Connection Offer for the benefit of Uisce Éireann and the Water & Wastewater Services Infrastructure, (to include without limitation a protected strip of **3.0** metres on all sides of the **Water and Wastewater Services Infrastructure** in respect of the full length of the **Water and Wastewater Services Infrastructure TOGETHER WITH** the PRA Compliant Map.

13.2.4 Where the Water & Wastewater Services Infrastructure is not entirely comprised within the boundaries of the lands owned by the Developer, the Developer shall deliver to Uisce Éireann a Deed of Grant of Wayleaves and Easements (in duplicate) in the form as set out at Appendix 7, Part A of the Connection Offer for the benefit of Uisce Éireann and the Water & Wastewater Services Infrastructure, duly

executed by the applicable landowner (to include without limitation a protected strip of **3.0** metres on all sides of the **Water and Wastewater Services Infrastructure** in respect of the full length of the **Water and Wastewater Services Infrastructure**) **TOGETHER WITH** the PRA Compliant Map.

13.3 The Developer irrevocably and unconditionally undertakes and agrees with Uisce Éireann:

13.3.1 to irrevocably instruct its appointed solicitor to use best endeavours to stamp and register the Deed(s) of Grant of Wayleaves and Easements in the Property Registration Authority as soon as practicable at the Developer's expense and to provide notice of the relevant dealing number and evidence of such registration to Uisce Éireann immediately following completion of registration **PROVIDED THAT** if requested by Uisce Éireann the Developer shall consent to Uisce Éireann taking over the registration process, and the Developer undertakes and agrees to assist Uisce Éireann with this registration process following written request to do so; and

13.3.2 to specifically include reference and notice of the Deed(s) of Grant of Wayleaves and Easements in favour of Uisce Éireann in any transfers, conveyances, assignment, lease and/or licence which the Developer may have with any third Party.

14. Financial Security Requirements

The necessity for the Developer to put any Required Security in place is specified in Appendix 8 of Connection Offer. In the event that Required Security is specified, the putting in place of the said Required Security shall be a pre-condition to the effectiveness of the Connection Agreement.

15. Assumptions

15.1 The Specification set out in Appendix 5 and the Connection Charge have been completed and assessed (respectively) based on the detail as set out in the Connection Application and the following assumptions:

15.1.1 the information contained in the Connection Application (as set out in Appendix 1 of the Connection Offer) is true accurate and complete in all material respects. If information provided is found to be incorrect or incomplete, the Developer may be invoiced for any additional costs and/or additional deductions may be made from the Self-Lay Surety; and

15.1.2 the Connection Charge has been assessed based on a desktop exercise without knowledge of existing utilities at the Development and any existing utilities, rock and other obstructions have not been measured on site. Dealing with such utilities, rock and obstructions may incur increased costs which shall be chargeable to the Developer.

(each an "**Assumption**" and together the "**Assumptions**")

15.2 Any change in the Assumptions may lead to a change in: (i) the Connection Charge; and/or (ii) the timing of the Connection Works. The Developer acknowledges and agrees that any additional costs arising from such change(s) will be for the account of the Developer and that Uisce Éireann shall not have any liability for the said additional costs. The Developer further acknowledges and agrees that it shall reimburse Uisce Éireann for such additional costs and that, in the event the Developer fails to reimburse Uisce Éireann for its said additional costs, Uisce Éireann shall be entitled to deduct the relevant amount(s) from the Self-Lay Surety. The Developer hereby consents to such deduction being made by Uisce Éireann.

16. General Provisions

16.1 The Developer shall:

16.1.1 inform Uisce Éireann, and all Parties acting on its behalf, of any relevant safety precautions before entry to the Development. Since Uisce Éireann will not be aware of the specific hazards present on the Development, the Developer is obliged to inform Uisce Éireann of such hazards. The Developer must ensure that Uisce Éireann, and all Parties acting on its behalf, are either accompanied at all times by the Developer, or have been adequately briefed as to the presence of any specific hazards, the precautions that must be taken and what to do in the event of an accident or emergency;

16.1.2 co-operate with and assist Uisce Éireann, and all Parties acting on its behalf;

16.1.3 not unreasonably interfere with or restrict the carrying out of Uisce Éireann's obligations in accordance with the Connection Agreement;

16.1.4 not do or cause or permit to be done anything which causes, or could reasonably be expected to cause, damage or destruction to any part of the Service Connection, the Connection Works or the Network(s) or in any way interferes with its operation or materially interferes with Uisce Éireann's (and all Parties' acting on its behalf) access to same;

16.1.5 be solely responsible at all times for maintaining and keeping excavations and reinstatements on the Development in a safe and secure condition and will indemnify and keep indemnified Irish Water, its servants, agents and contractors against all claims, demands, proceedings, damages and expenses whatsoever in respect thereof;

16.1.6 agree the timing of any works to be carried out by the Developer with Uisce Éireann.

16.2 The Developer shall also comply with any other reasonable directions issued by Uisce Éireann to the Developer to ensure compliance with any Applicable Law or for any other reason where Uisce Éireann, acting reasonably, deems it appropriate to issue such directions.

16.3 The Developer shall not allow the discharge of rainwater run-off from roofs, paved areas or other surfaces into any Sewer, except as may otherwise be agreed in advance with Uisce Éireann in writing.

16.4 Uisce Éireann may specify any technical requirements or standards necessary to minimise the risk of leakage or to protect the integrity of any Waterworks or Wastewater Works.

16.5 For the avoidance of doubt, the Developer is prohibited from using the Service Connection and/or using any other mechanism to supply Water Services onwards to another location or premises other than the Premises within the Development notified to Uisce Éireann by the Developer to which the Service Connection applies. Uisce Éireann shall in no way be liable for and shall be indemnified and held harmless by the Developer in respect of any breach of this provision by the Developer or by any other third Party, including any adverse consequences arising directly or indirectly as a result of such a breach and all costs, damages or claims arising therefrom.

16.6 The Developer indemnifies and holds harmless Uisce Éireann and its servants, agents and contractors in respect of any loss, damage or injury that may result from the Self-Lay Works.

16.7 During the Term, the Developer shall be solely responsible for preventing any backflow, back syphonage or blowback from the Distribution System(s) of any Premises into the Water Main or Waterworks.

17. Notification for Meter Installation

The Developer is required to give Uisce Éireann seven (**7**) days advance notification of when a property service connection, boundary box and Distribution System is in place and connected to any Premises that has been constructed and ready for occupation so that Uisce Éireann can advance the provision of a meter in the boundary box. The installation of the meter will be at Uisce Éireann's discretion based on current policy.

18 Register of Premises Serviced

The Developer shall be required under this Connection Agreement to provide Uisce Éireann with a register, on a regular (and at least a quarterly) basis, of the Premises that have been constructed and ready to receive Water Services within the Development in the format provided in Appendix 10 of the Connection Offer. The initial register is to be provided to Uisce Éireann at the pre-construction site meeting. Updates of the register are to be provided to Uisce Éireann at subsequent construction site meetings at the intervals outlined above.

19. Time for Completion/Delays

Both Parties shall use reasonable endeavours to ensure that they perform the obligations under this Connection Agreement in a timely manner. Uisce Éireann shall not be liable for any loss or damage suffered by the Developer in respect of delays resulting from any cause whatsoever.

20. Third Party Losses

The Developer shall indemnify Uisce Éireann and its servants, agents and contractors, and hold Uisce Éireann and its servants, agents and contractors harmless at all times from any and all losses of any third Party incurred, suffered or sustained pursuant to this Connection Agreement, but only to the extent any such loss was not caused by Uisce Éireann's breach of this Connection Agreement or the negligence of Uisce Éireann in undertaking its obligations under this Connection Agreement.

21. Liability

21.1 **Immunity:** Nothing in this Connection Agreement shall affect any immunity that Uisce Éireann benefits from Applicable Law.

21.2 **Death or Personal Injury:** Subject to General Condition 21.1 above, nothing in this Agreement shall exclude or limit the liability of a Party for death or personal injury resulting directly from the negligence of that Party or any of its officers, employees and agents and that Party shall indemnify and keep indemnified the other Party, its officers, employees and agents from and against any losses, damages, claims, liabilities, costs or expenses which that other Party may suffer or incur by reason of any claim on account of death or personal injury resulting from the negligence of the liable Party or the negligence of any of its officers, employees or agents.

21.3 **Physical Damage**: Subject to the other provisions of this General Condition and except as provided in General Condition 21.2, this General Condition 21.3 and where any other provision of this Connection Agreement provides for an indemnity, neither Party, nor any of its officers, employees or agents shall be liable to the other Party for any losses, damages, claims, liabilities, costs or expenses arising from any breach of this Connection Agreement other than for losses, damages, claims, liabilities, costs or expenses directly resulting from such breach and which at the date hereof were reasonably foreseeable as likely to occur in the ordinary course of events from such breach in respect of:

21.3.1 physical damage being occasioned to the property of the other Party, its officers, employees or agents; or

21.3.2 the liability of the other Party to any other Person for loss in respect of physical damage caused directly to the property of such other Person as a result of such breach.

21.4 **Reasonable and Prudent Operator**: Subject to General Condition 21.2, where the obligations of Uisce Éireann are performed in accordance with the

Standard of a Reasonable and Prudent Operator, Uisce Éireann shall have no liability whatsoever to the Developer in respect of this Connection Agreement.

21.5 **Limit of Liability:** Subject to General Condition 21.2, Uisce Éireann's aggregated liability in respect of all such losses, damages, claims, liabilities, costs or expenses pursuant to this Connection Agreement shall not exceed €100,000.

21.6 **No liability for Force Majeure:** Neither Party shall be liable for any breach of this Connection Agreement directly or indirectly caused by Force Majeure.

21.7 **No Liability:** Subject to General Condition 21.2 and any provision of this Connection Agreement which provides for payment obligations, neither Party nor any of its officers, directors, employees or agents shall in any circumstances whatsoever be liable to the other Party for:

21.7.1 any loss of profit, revenue, use, contract (other than this Connection Agreement), opportunity or loss of goodwill; or

21.7.2 any indirect or consequential loss, incidental or special damages (including punitive damages); or

21.7.3 loss resulting from the liability of the other Party to any other Person howsoever and whensoever arising.

21.8 **No implied warranties:** All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from this Connection Agreement.

21.9 **Taking Over of Legal Claims:** In the event of any third Party claim being made against a Party which is not liable, the Party which is liable shall be promptly notified of the claim and it may at its own expense conduct all negotiations for the settlement of the same, and any litigation that may arise from the claim. The Party which is not liable shall not make any admission which might be prejudicial to the claim. The conduct by the liable Party of such negotiations or litigation shall be conditional upon the liable Party having first given to the Party which is not liable such reasonable security as that Party shall from time to time notify that it requires to cover the amount ascertained or agreed or estimated, as the case may be, of any losses, damages, claims, liabilities, costs or expenses for which that Party may become liable in respect of the claim. The Party which is not liable shall, at the request of the liable Party, afford all reasonable assistance for the purpose of contesting the claim and shall be paid by the liable Party (within ten (10) Business Days of the date of its invoice therefor) all reasonable expenses incurred in so doing.

22. Assignment

The Developer shall not be entitled to assign the benefit or transfer the burden of this Connection Agreement without the prior written consent of Uisce Éireann. Nothing shall prevent Uisce Éireann from assigning the benefit or transferring the burden of this Connection Agreement to an Affiliate.

23. Sub-contractors

Either Party shall have the right to sub-contract or delegate the performance of any of its obligations or duties arising under this Connection Agreement without the prior consent of the other Party. Such subcontracting by Uisce Éireann or the Developer of the performance of any obligations or duties under this Connection Agreement shall be on terms which are standard in the industry and shall not, in any event, relieve Uisce Éireann or the Developer (as the case may be) from any liability for performance of such obligation or duty. The Developer shall remain fully liable for the completion of any works on its behalf pursuant to this Connection Agreement.

24. Developer's Authority

24.1 The Developer represents and warrants to Uisce Éireann that:

24.1.1 it has full power and authority to enter into and to exercise its rights and perform its obligations under this Connection Agreement and has obtained all authorisations and consents necessary for it to so enter, exercise rights and perform obligations and such authorisations and consents are in full force and effect;

24.1.2 performance of this Connection Agreement will not conflict with or constitute a breach or default under any contract or agreement of any kind to which the Developer is a Party or any judgment, order, statute or regulation which is applicable to the Developer;

24.1.3 the obligations expressed to be assumed by it under this Connection Agreement are legal and valid obligations binding on it;

24.1.4 all payments to be made by it under this Connection Agreement may be made free and clear of, and without deduction for or on account of, any taxes whatsoever;

24.1.5 no representation or warranty made by or on behalf of the Developer and contained in this Connection Agreement and no statement contained in any submission to Uisce Éireann, application, declaration or other instrument made by or on behalf of the Developer in connection with this Connection Agreement contains any false or misleading representation of a material fact, or omits to state a material fact necessary to prevent such statements, in the light of the circumstances under which they are made, from being misleading; and

24.1.6 in connection with the negotiation and execution of this Connection Agreement:

24.1.6.1 it is acting as a principal (and not as an agent or in any other capacity, fiduciary or otherwise);

24.1.6.2 it is not relying upon any advice, counsel or representations (whether written or oral) of any other Party other than the representations expressly set out in this Connection Agreement;

24.1.6.3 it has made its own decision regarding the entering into of this Connection Agreement based upon its own judgement and upon the advice from such professional advisers as it has deemed necessary to consult;

24.1.6.4 all of its decisions regarding this Connection Agreement have been the result of arms' length negotiations between the Parties; and

24.1.6.5 it has a full understanding of the terms, conditions and risks (economic and otherwise) of this Connection Agreement, and is capable of assuming and willing to assume (financially and otherwise) those risks.

25. Term & Termination

25.1 This Connection Agreement shall commence upon the date that the Developer:

25.1.1 completes and returns the Letter of Acceptance;
25.1.2 pays the Connection Charge;
25.1.3 provides the required Self-Lay Surety (together with any ancillary documents required under the Uisce Éireann Financial Security Policy);
25.1.4 provides confirmation that any Required Security, as specified in Appendix 8 of the Connection Offer, has been put in place.

To the extent that any of the steps outlined at 25.1.1 – 25.1.4 occur on different days, the Connection Agreement shall commence on the last date on which all the steps have been fully complied with and shall continue in full force and effect until the issue of the Completion Certificate, unless it is terminated earlier in accordance with the provisions of this Connection Agreement.

25.2.1 This Connection Offer is based on a high-level desk top analysis carried out by Uisce Éireann on the feasibility of a connection for the Development. Once the Connection Offer has been accepted by You, Uisce Éireann will begin a detailed design of the connection. If during the process of detailed design Uisce Éireann, at its discretion, forms the opinion (acting reasonably) that either:

25.2.1.1 a connection to the Development is not feasible or practicable or safe to complete; or

25.2.1.2 a connection to the Development would involve the expenditure by Uisce Éireann of monies in excess of that provided for by way of the Connection Charge,

then the Connection Agreement may be terminated by Uisce Éireann by way of written notice to the Customer.

25.2.2 The Developer shall be entitled to terminate this Agreement on 14 days' written notice to Uisce Éireann, provided such notice may not be given if a Conformance Certificate has been issued by Uisce Éireann.

25.2.3 In the event that Uisce Éireann or the Developer exercise their right to terminate under this General Condition 25.2, Uisce Éireann shall return (a) any Connection Charge paid by the Developer, less any costs and expenses incurred by Uisce Éireann as at the date of termination, including, but not limited to, costs of construction, and any legal or financing costs; and (b) the Self-Lay Surety.

25.3 Either Party shall be entitled to terminate this Connection Agreement upon written notice to the other Party where:

25.3.1 there is any material breach by the other Party of its obligations under this Connection Agreement and the breach cannot be remedied or if it is capable of being remedied, it has not been remedied by such Party within 28 days of the issue of a notice to it by the other Party identifying the breach and requiring it to be remedied;

25.3.2 an event of Force Majeure persists for a period of 180 days or more, provided at least 14 days' notice of termination has been given in writing;

25.3.3 the other Party becomes insolvent, unable to pay its debts when they fall due, ceases to trade or goes into liquidation (other than for the purposes of amalgamation or reconstruction) or is dissolved for any reason or has bona fide legal proceedings initiated against it for its winding-up which are not vexatious or incompetent;

25.3.4 in respect of the other Party, any bona fide action or other steps are taken or legal proceedings are started (and are not withdrawn within fourteen (14) days) for the liquidation, winding-up, dissolution or for the appointment of a receiver, liquidator, administrator, examiner or similar officer of such Party;

25.3.5 in respect of the other Party, an encumbrancer takes possession of, or a liquidator, receiver or an administrator or examiner is appointed over a

substantial part of the assets of such Party or any security granted by such Party becomes enforceable;

25.3.6 the other Party enters into any composition, assignment, scheme or arrangement with creditors generally of the other Party (other than for the purpose of a voluntary solvent reconstruction or amalgamation);

25.3.7 the other Party is suffering a distress, execution, sequestration or other process being levied or enforced upon or sued or against all or any substantial part of its assets, rights or revenues which is not discharged, stayed, or dismissed within thirty (30) days; or

25.3.8 any event equivalent or analogous to any of the events specified in paragraphs 25.3.3 to 25.3.7 (inclusive) above occurs in relation to the other Party in any jurisdiction.

25.4 Termination of this Connection Agreement shall not prejudice or affect any right of action or remedy which shall have accrued or shall thereafter accrue to either Party under this Connection Agreement.

25.5 Without prejudice to General Condition 25.4 and any other provision of this Connection Agreement that survives termination, the following obligations of the Parties to this Connection Agreement shall continue in full force and effect and be fully binding on the Parties notwithstanding termination:

General Condition 4 (Order Of Precedence)*;*
General Condition 10 (Connection Charge);
General Condition 11.11 (Insurance);
General Condition 12 (Ownership);
General Condition 13 (Title, Warranty and Registration, Wayleaves and Easements);
General Condition 16 (General Provisions);
General Condition 20 (Third Party Losses)
General Condition 21 (Liability);
General Condition 25 (Term And Termination);
General Condition 28 (Data Protection);
General Condition 32 (Entire Agreement);
General Condition 35 (Governing Law);
General Condition 36 (Disputes).

26. Notices

26.1 Notices or other communications given pursuant to this Connection Agreement shall be in writing and shall be sufficiently given if delivered by hand or sent by e-mail or pre-paid registered post to the e-mail or postal address referred to below of the Party to which the notice or communication is being given or to such other address and as such Party shall communicate in writing from time to time to the Party giving the notice or communication.

26.2 The Developer's address for service is as set out in the Connection Offer.

26.3 Any notice required or permitted to be given by the Developer shall be in writing addressed to Dermot Phelan, Connections and Developer Services

Manager, at Uisce Éireann, PO Box 860, South City Delivery Office, Cork City or by email to newconnections@water.ie or such other address or electronic mail address as may be notified to the Developer by Uisce Éireann from time to time.

26.4 Every notice given in accordance shall be deemed to have been received as follows:

Means of Dispatch	Deemed Received
Hand Delivery	The time of delivery.
Post	48 hours after posting (and proof that the envelope containing the notice or communication was properly addressed and sent by pre-paid registered post will be sufficient evidence that the notice or other communication has been duly served or given).
Email	Upon receipt by the addressee of the complete text in legible form.

provided that if, in accordance with the above provisions, any such notice or other communication would otherwise be deemed to be given or made outside working hours (being 9am to 5.30pm on a Business Day) such notice or other communication shall be deemed to be given or made at the start of working hours on the next Business Day.

27. Health & Safety

27.1 It is acknowledged and agreed that the works carried out for, or on behalf of, the Developer in relation to the Water & Wastewater Services Infrastructure are entirely separate and distinct to the Connection Works carried out for and on behalf of Uisce Éireann. The Developer shall ensure full compliance with all applicable health and safety legislation including, if necessary and applicable, the Safety, Health and Welfare at Work (Construction) Regulations 2013 (the "**SHW Regulations**") in respect of the works to the Water & Wastewater Services Infrastructure. The Developer acknowledges that it may have certain obligations under the SHW Regulations in relation to the construction of the Water & Wastewater Services Infrastructure and, as such, will ensure full compliance with those obligations. Uisce Éireann shall ensure full compliance with all applicable health and safety legislation including, if necessary and applicable, the SHW Regulations in respect of the Connection Works. Uisce Éireann acknowledges that it may have certain obligations under the SHW Regulations in relation to the Connection Works and, as such, will ensure full compliance with those obligations.

27.2 **Project Supervisor Construction Stage ("PSCS") and Project Supervisor Design Process ("PSDP")**

The Developer elects to be treated for the purposes of the SHW Regulations as the only client (and Uisce Éireann agrees with such election by the

Developer) in respect of the Water & Wastewater Services Infrastructure. The Developer accepts and understands its duties and responsibilities pursuant to the SHW Regulations including its obligation as a client to appoint a PSCS and PSDP in respect of the Water & Wastewater Services Infrastructure and to ensure that the relevant appointees have adequate insurance in place to cover the duties being undertaken by them.

28. Data Protection

28.1 If and to the extent personal data is processed (as such terms are defined in the Data Protection Legislation) pursuant to this Connection Agreement, the provisions of Schedule 2 shall apply.

29. No Waiver: No forbearance, indulgence or relaxation on the part of a Party shown or granted to the other Party shall in any way affect, diminish, restrict or prejudice the rights or powers of Uisce Éireann or operate as or be deemed to be a waiver of any breach of conditions. None of the provisions of this Connection Agreement shall be considered waived by a Party unless such waiver is given in writing and signed by a duly authorised representative of the Party making the waiver. No such waiver shall be a waiver of any past or future default or breach nor shall such waiver constitute a modification of any term provision condition or covenant of the contract unless expressly so provided in such waiver.

30. Severability: All of the provisions contained in this Connection Agreement are distinct and severable, and if any provision is held or declared to be unenforceable, illegal or void in the whole or in part by any court, regulatory authority or other Competent Authority it will, to that extent only, be deemed not to form part of this Connection Agreement and the enforceability, legality and validity of the remainder of these terms and conditions will not in any event be affected.

31. Force Majeure: If either Party is by reason of Force Majeure rendered unable wholly or in part to carry out its obligations under this Connection Agreement, then upon notice in writing of such Force Majeure from the Party affected to the other Party, as soon as possible after the occurrence of the cause relied on, the Party affected shall be released from its obligations (other than the obligations to pay money) and suspended from the exercise of its rights under the Connection Agreement to the extent to which they are affected by the circumstances of Force Majeure and for the period during which those circumstances exist PROVIDED THAT the Party affected shall use all reasonable endeavours to prevent, avoid, overcome or mitigate the effects of such Force Majeure.

32. Entire Agreement

32.1 This Connection Agreement shall be the entire agreement between the Parties with respect to the subject matter and expressly excludes any warranty, condition or other undertaking implied at law or by custom and supersedes all previous agreements and understandings between the Parties (other than as provided for in this Connection Agreement) with respect to its subject matter.

32.2 The Developer acknowledges and confirms that it does not enter into this Connection Agreement in reliance on any representation, any misrepresentation, warranty or other undertaking by Uisce Éireann not fully reflected in this Connection Agreement.

32.3 All warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded from this Connection Agreement.

33. Amendments

33.1 This Connection Agreement may only be amended by written agreement of the Parties.

34. No Derogation from Statutory Responsibilities

The Developer acknowledges and accepts:

34.1 its obligations and duties under the Water Services Acts in relation to the protection of human health, repair of leaks and the reasonable conservation of water and the management, consumption and use of water on or at the Development to ensure that water is not wasted or consumed in excessive amounts;

34.2 that notwithstanding this Connection Agreement, Uisce Éireann is not limited from exercising its powers under the Water Services Acts in relation to the Developer;

34.3 that the Premises Pipe Work (in terms of ownership, maintenance, repair, renewal or otherwise) will remain the sole responsibility of the Developer or any third Party owner of those Premises unless ownership is transferred to Uisce Éireann.

35. Governing Law

35.1 The Connection Agreement shall be governed and construed in accordance with the laws of Ireland and, subject to General Condition 36, the courts of Ireland shall have exclusive jurisdiction to decide disputes arising between the Developer and Uisce Éireann.

36. Dispute Resolution

36.1 **Notification of a Dispute:** Any dispute between the Parties (a "**Dispute**") shall be resolved, if possible, by negotiation. In the event that no agreement is reached within fifteen (15) days of the date on which either Party first notified the other Party that a Dispute exists, either Party shall have the right to have the Dispute determined in accordance with General Condition 36.2.

36.2 **Mediation:** The mediator is to be appointed by agreement between the Parties and, in the absence of agreement within five (5) working days of the receipt by one Party of a written notice to concur in the appointment of a mediator, by the Mediators' Institute of Ireland ("**MII**"). The mediation will be in Dublin and the costs of the mediation shall be shared equally between the Parties. In the event

that the matter is not resolved within twenty eight (28) days of the mediator being appointed (or such longer period as may be agreed in writing between the Parties), then either Party may (but for the avoidance of doubt not be obliged to do so) commence court proceedings for the determination of the Dispute in question.

36.3 **Construction Contracts Act 2013:** If any payment dispute arises under this Connection Agreement, notwithstanding any other provision of this General Condition 36, either Party may refer it to adjudication at any time and the provisions of the Construction Contracts Act 2013 shall apply.

36.4 **Performance to Continue During Dispute:** Insofar as practicable, the Parties shall continue to implement the terms of this Connection Agreement notwithstanding the initiation of mediation or Court proceedings and pending the outcome of any Dispute. No payment due to or payable by Uisce Éireann or the Developer shall be withheld on account of a pending reference to the dispute resolution mechanism except to the extent that such payment is the subject of the Dispute. However, Uisce Éireann shall not be obliged to carry out the Connection Works unless it is in receipt of the Connection Charge.

36.5 **Survival:** The provisions of General Condition 36.2 and 36.3 shall continue after the termination of this Connection Agreement where notice of the existence of the Dispute was given under General Condition 36.1 prior to termination. Nothing in this Connection Agreement is intended to prejudice the referral of a dispute to the Commission for Regulation of Utilities for determination in accordance with Uisce Éireann's Customer Handbook.

37. NEW INDUSTRY STRUCTURE AND INDUSTRY REGIME

37.1 If, after execution of this Connection Agreement, there shall be enacted and brought into force any Legal Requirement for:

37.1.1 the further reorganisation of the water industry in Ireland or any material part of it;

37.1.2 the further facilitation of the introduction of third party interests into the affairs of the water industry in Ireland or any part of it; or

37.1.3 the amendment or variation of any policy of Uisce Éireann or the manner in which the Network(s) and any agreements or protocols related thereto are organised;

which necessitates a variation to this Connection Agreement, the Parties shall effect such changes as are reasonably necessary so as to ensure that the operations contemplated by this Connection Agreement shall be conducted in a manner which is consistent with the effect of the new Legal Requirement and most closely reflects the intentions of the same with effect from the date thereof provided that any such amendment will be of no greater extent than is required by reason of the same.

37.2 If any variation proposed under General Condition 37.1 has not been agreed by the Parties within three (3) months of it being proposed (the Parties acting as

soon as reasonably practicable), either Party may refer to the Commission for Regulation of Utilities for determination and the Parties agree to abide by and to give effect to the Commission's determination, if necessary by entering into an agreement supplemental to this Connection Agreement.

37.3 Such changes shall have effect upon the date upon which the Legal Requirement in question is brought into force with such transitional arrangements as shall be reasonable and as are in compliance with the new legislation, directive, rule, regulation, direction, statutory instrument or order, referred to in General Condition 37.1.

SCHEDULE 1

FORM OF CERTIFICATES

Conformance Certificate

(Capitalised terms not otherwise defined herein shall have the meaning given to them in the Connection Agreement)

This Conformance Certificate is issued on foot of a request by the Developer/Customer and based on inspections of the installed Water and Wastewater Services Infrastructure and an assessment of the Final Documentation submitted by the Developer/Customer.

This Conformance Certificate will instigate the provision of a Service Connection between the Water and Wastewater Services Infrastructure installed in the Developer/Customer site/property and the Network(s) in the ownership of Uisce Éireann. Uisce Éireann shall use reasonable endeavours to complete the Connection Works within 20 Business Days of the date of issue of this Conformance Certificate.

Based on the inspections carried out by or on behalf of Uisce Éireann, Uisce Éireann is satisfied that the Water and Wastewater Services Infrastructure has been completed in accordance with the relevant Connection Agreement and that the Final Documents are in order.

This Conformance Certificate commences the Defects Liability Period during which time the Developer is responsible for the making good of defects imperfections, shrinkages or other faults in respect of the Water & Wastewater Services Infrastructure as may be required in writing by Uisce Éireann. The Defects Liability Period may be extended by Uisce Éireann for a period equal to the sum of any periods after the issue of the Conformance Certificate during which the Water & Wastewater Services Infrastructure cannot be used for Water Services by reason of a defect or damage or where the Water & Wastewater Services Infrastructure have not been completed in accordance with the Connection Agreement.

Uisce Éireann shall, at its discretion, undertake inspections, surveys, investigations to assess the continued adequacy of the Water & Wastewater Services Infrastructure during the Defects Liability Period. When required, Uisce Éireann will notify the Developer in writing of the need for repair, reconstruction or rectification works in relation to the Water & Wastewater Services Infrastructure. The Developer shall execute or secure the execution of all works of accommodation or works of repair, reconstruction, rectification and making good of defects imperfections, shrinkages or other faults in respect of the Water & Wastewater Services Infrastructure, as may be required of the Developer in writing by Uisce Éireann during the Defects Liability Period. All such works shall be carried out at the Developer's expense. If the Developer shall fail to execute or secure the execution of works as aforesaid Uisce Éireann shall be entitled to carry out such works and shall be entitled to recover from the Developer the costs and expenses reasonably incurred by Uisce Éireann in so doing.

This Conformance Certificate is accompanied by a SCHEDULE of CORRECTIONS which lists minor works that Uisce Éireann deems necessary to be carried out on the infrastructure installed in the Developer/Customer site/property. The Developer/Customer agrees to undertake the works listed in the SCHEDULE of CORRECTIONS as soon as possible

Section A - Customer Details

1 Customer's Details _____

2 Developer's Details (if different from Customer) _____

3 Agent's Details (if relevant) _____

4 Consultant's Details (if relevant) _____

5 Uisce Éireann Reference Number _____

Section B - Site Details

6 Site address: _____

7 Name of Local Authority: _____

8 Planning Application No: _____

9 Irish National Grid co-ordinates: _____

10 WPRN No. associated with the connection: _____

Section C – Conformance Certificate

The Conformance Certificate is issued by Uisce Éireann and is based on inspections of the Water & Wastewater Services Infrastructure and an assessment of the Final Documentation provided by the Customer/Developer as part of its request for a Conformance Certificate. Uisce Éireann reserve the right to request further infrastructure tests, measurements or further information should any of the infrastructure alter after the date of issue of this Conformance Certificate

Uisce Éireann has examined the Water & Wastewater Services Infrastructure and the Final Documentation provided and, as a condition of this Certification, instructs that the list of work included in the attached SCHEDULE OF CORRECTIONS be completed as soon as possible

Development: _____ _____

Issued to: _____

_____

_____

Issued by : _____ **Date issued:** _____

Signed: _____

On behalf of Uisce Éireann

Uisce Éireann has examined the Water & Wastewater Services Infrastructure and the Final Documentation, provided and, as a condition of this Certification, instructs that the list of work included in SCHEDULE OF CORRECTIONS be completed as soon as possible

Completion Certification

(Capitalised terms not otherwise defined herein shall have the meaning given to them in the Connection Agreement)

This Completion Certificate is issued on foot of a request by the Developer/Customer and based on final inspections by Uisce Éireann of the installed Water and Wastewater Services Infrastructure and a re-assessment of the Final Documentation which was submitted by the Developer/Customer with the request for the provision of the Conformance Certificate.
This Completion Certificate serves as a notice of the end of the Defects Liability Period.

On expiry of the Defects Liability Period and subject to the Developer having complied with its obligations pursuant to General Condition 13, Uisce Éireann issues this Completion Certificate to the Developer. Uisce Éireann shall be entitled to deduct from and/or make a claim against the Self-Lay Surety for any costs which Uisce Éireann has incurred:

- in undertaking any works referred to in General Condition 11.17 of the Connection Agreement or any other works of construction, reconstruction, maintenance, rectification or repair or making good of defects imperfections, shrinkages or other faults by reason of the Developer or its contractor failing to complete in a good and workmanlike manner and in accordance with the Connection Agreement the entirety of the Water & Wastewater Services Infrastructure; and

- towards invoices or sums payable by virtue of any actions, claims or demands made against Uisce Éireann by any third Party as a result of any act or default by the Developer or its contractor.

Subject to the above, Uisce Éireann shall return the Self-Lay Surety to the Developer in accordance with General Condition 11.18.

Section A - Customer Details

1 Customer's Details: _____

2 Developer's Details (if different from Customer): _____

3 Agent's Details (if relevant): _____

4 Consultant's Details (if relevant): _____

5 Uisce Éireann Reference Number:
_____

Section B - Site Details

6 Site address: _____

7 Name of Local Authority: _____

8 Planning Application No: _____

9 Irish National Grid co-ordinates: _____

10 WPRN No. associated with the connection: _____

Section C - Certificate of Completion

The Completion Certificate is issued by Uisce Éireann and is based on a final inspection of the Water & Wastewater Services Infrastructure and a review of the Final Documentation that was provided by the Customer/Developer as part of its request for a Conformance Certificate.

Development: _____ _____

Issued to: _____

_____

_____

Issued by : _____ **Date issued:** _____

Signed: _____

On behalf of Uisce Éireann

SCHEDULE 2

DATA PROTECTION

1. If and to the extent personal data is processed pursuant to this Connection Agreement, the provisions of this Schedule 2 shall apply. "Data Protection Law" means all applicable data protection law including, with effect from 25 May 2018, the General Data Protection Regulation (Regulation (EU) 2016/679) and the Data Protection Act 2018; and the terms 'personal data', 'process', 'controller', 'processor' and 'data subject' shall have the meanings given to them under Data Protection Law.

2. It is necessary for Uisce Éireann to collect and use personal data relating to the Developer in respect of this Connection Agreement, such as the Developer's name, address, contact details, financial information (depending on payment method) and other data provided by the Developer as part of its application. Where such personal data is provided, the relevant controller is Uisce Éireann. This data will be used to enable Uisce Éireann to carry out its obligations under this Connection Agreement and to manage its relationship with the customer, such as arranging payments, visits to the Developer's Premises and scheduling construction activities. Uisce Éireann's legal basis for processing such personal data in accordance with the provisions of this Schedule 2 is that it is necessary for the exercise of official authority vested in Uisce Éireann. Uisce Éireann may keep the Developer's data for a reasonable period after the Developer ceases to be supplied with Water Services but will not keep it for any longer than is necessary and/or as required by Applicable Law.

3. Uisce Éireann may share the Developer's personal data with other members of the Uisce Éireann group and agents who act on behalf of Uisce Éireann in connection with the activities referred to above. Such agents are only permitted to use the Developer's data as instructed by Uisce Éireann. They are also required to keep the Developer's data safe and secure.

4. From time to time the Developer may speak to employees of Uisce Éireann (or agents acting on its behalf) by telephone. To ensure that Uisce Éireann can provide a quality service, telephone conversations with the Developer may be recorded. Uisce Éireann will treat the recorded information as confidential and will only use it for staff training/quality control purposes, confirming details of the Developer's conversations with Uisce Éireann or any other purposes mentioned in this notice.

5. Any data subjects in respect of which we hold or process personal data have rights in relation to their personal data, including the right to request access to their data and, in certain circumstances to request rectification, erasure or restriction of the processing of their personal data. All such data subjects have the right to lodge a complaint with the Irish supervisory authority, the Data Protection Commission. The provision of such personal data is not a contractual requirement, however, failure to provide sufficient information may affect the completeness of your application. If the Developer wishes to avail of these rights or for further information please contact Uisce Éireann in writing at FREEPOST, Uisce Éireann, Data Protection officer, PO Box 6000, Talbot Street, Dublin 1 or via email to dataprotection@water.ie

6. Uisce Éireann endeavours to use appropriate technical and physical security measures to protect all personal data which is transmitted, stored or otherwise processed by Uisce Éireann, from accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access. Uisce Éireann's service providers are also selected carefully and required to use appropriate protective measures.

7. As effective as modern security practices are, no physical or electronic security system is entirely secure. The transmission of information via the internet is not completely secure. Although Uisce Éireann will do its best to protect the Developer's data, Uisce Éireann cannot guarantee the security of all data transmitted to Uisce Éireann. Any transmission of data to Uisce Éireann is at the Developer's risk. Once Uisce Éireann receives the data, Uisce Éireann will use appropriate security measures to seek to prevent unauthorised access. Uisce Éireann will continue to revise policies and implement additional security features as new technologies become available.

8. In the event that there is an interception or unauthorised access to the Developer's personal data, Uisce Éireann will not be liable or responsible for any resulting misuse of the Developer's personal information.

9. For further information on how Uisce Éireann treats the personal data of Developers when providing Water Services, please see our Data Protection Notice on www.water.ie. Alternatively, please contact us at the details above for Uisce Éireann's Data Protection Notice.

10. In connection with the above Uisce Éireann may transfer the Developer's personal data outside the European Economic Area, including to a jurisdiction which is not recognised by the European Commission as providing for an equivalent level of protection for personal data as is provided for in the European Union (a "Third Country"). If and to the extent that Uisce Éireann does so, Uisce Éireann will ensure that appropriate measures are in place to comply with our obligations under applicable law governing such transfers, which may include entering into a contract governing the transfer which contains the 'standard contractual clauses' approved for this purpose by the European Commission or, in respect of transfers to the United States of America, ensuring that the transfer is covered by the EU-US Privacy Shield framework (or any replacement framework). Further details of the measures that Uisce Éireann has taken in this regard are available on request from Uisce Éireann.

11. Uisce Éireann reserves the right to change and/or update its Data Protection Notice at any time at Uisce Éireann's sole discretion. If Uisce Éireann makes changes, Uisce Éireann will publish updated notices on www.water.ie.

Appendix 3
Special Conditions - Part 1

Notes			
SECTION 3.0 – Special Conditions pertaining to the Water/Wastewater Service Connection(s)			
SECTION 3.1 - Water Service Connection(s)			
1	Distance from Customer's Premises to Connection Point in metres (Service Connection).	5.00	m
2	Diameter of Service Connection required (external diameter in mm).	100.00	mm
3	Diameter of meter required (external diameter in mm).	150.00	mm
4	Distance from Service Connection Point to the existing mains in metres (Mains Extension).		m
5	Uisce Éireann will deliver the full physical connection works on the public side from its Network(s) to your property boundary.		
6			
7			
8	The design & construction of the new proposed water connection to be in accordance with the UÉ Codes of Practice and Standard Details. These are available from the UÉ website		
9	Once the offer has been accepted with payment and signed counterpart returned, Uisce Éireann will commence the design of the Connection Works and obtain all relevant statutory approvals including obtaining a Road Opening Licence (ROL) to allow the Works commence. It may take some time to obtain the ROL. Once these approvals are in place and design stage is complete, we will contact you 14 days in advance of the proposed connection works taking place.		
SECTION 3.2 - Wastewater Service Connection(s)			
1	Distance from Customer's Premises to Connection Point in metres (Service Connection).	5.00	m
2	Diameter of Service Connection required (internal diameter in mm).	225.00	mm
3	Distance from Service Connection Point to the existing mains in metres (Mains Extension).		m
4			
5	Uisce Éireann will deliver the full physical connection works on the public side from its Network(s) to your property boundary.		
6			
7	The design & construction of the new proposed wastewater connection to be in accordance with the UÉ Codes of Practice and Standard Details. These are available from the UÉ website		
8	No storm runoff shall drain to the public foul sewer		
9	This Connection Offer is based on a high-level desk top analysis carried out by Uisce Éireann on the feasibility of a Connection for the Premises. Once the Connection Offer has		

	been accepted by You, Uisce Éireann will begin a detailed design of the Connection. If during the process of detailed design Uisce Éireann, at its discretion, forms the opinion (acting reasonably) that either: A. a Connection to the Premises is not feasible or practicable or safe to complete; or B. a Connection to the Premises would involve the expenditure by Uisce Éireann of monies in excess of that provided for by way of the Connection Charge,then the Connection Agreement may be terminated by Uisce Éireann by way of written notice to the Customer. In the event that Uisce Éireann exercises its right to terminate the Connection Agreement on the basis of the foregoing then Uisce Éireann shall return any Connection Charge paid by the Customer, less (if deemed appropriate by Uisce Éireann) any outstanding costs and expenses incurred by Uisce Éireann as at the date of termination. This provision is additional to and does not replace any other provisions relating to termination.
10	Once the offer has been accepted with payment and signed counterpart returned, Uisce Éireann will commence the design of the Connection Works and obtain all relevant statutory approvals including obtaining a Road Opening Licence (ROL) to allow the Works commence. It may take some time to obtain the ROL. Once these approvals are in place and design stage is complete, we will contact you 14 days in advance of the proposed connection works taking place.

Appendix 3
Special Conditions - Part 2

Special Conditions relating to Connection Offers for Partially or Fully Completed Developments

These Special Conditions apply to developments where Self-Lay works have been undertaken and where the Water and Wastewater Services Infrastructure has been partially or completely installed.

The connection of the Development's Water and Wastewater Services Infrastructure to the Networks is strictly subject to compliance by the Developer with the requirements of the General Conditions, as amended by these Special Conditions, for the entirety of the Water and Wastewater Services Infrastructure within the Development (including any Self-Lay works which have been either partially or fully completed prior to the date of the Developer's acceptance of the Connection Offer). The definition of *"Water and Wastewater Services Infrastructure"* in the General Conditions is hereby amended to also incorporate all Self-Lay works which have been completed in respect of the Development, including those completed or partially completed prior to the date of the Developer's acceptance of the Connection Offer.

1. Special Conditions

1.1. The Developer shall ensure that all Requisite Consents are in place for the Development.

1.2. The Water and Wastewater Services Infrastructure shall be constructed:

1.2.1. in accordance with the General Conditions and all Special Conditions in of Appendix 3;

1.2.2. in accordance with the requirements of the Specification included in Appendix 5 of the Connection Offer;

1.2.3. in substantial compliance with the Relevant Standards included in Appendix 6 of the Connection Offer; and

1.2.4. in compliance with the design approved by Uisce Éireann, pursuant to which Uisce Éireann has issued the Statement of Design Acceptance, as applicable.

1.3. The Developer shall supply to Uisce Éireann all relevant Final Documents (including as-constructed drawings and/or records) to demonstrate compliance of the Water and Wastewater Services Infrastructure with Special Condition 1.2 (Appendix 3, Part 2).

1.4. For the purposes of these Special Conditions, the Defects Liability Period for the Water and Wastewater Services Infrastructure shall be Twelve (12) months after connection of the last water services connection and boundary box to the last Premises in the Development. This Defects Liability Period may be extended, at the sole discretion of Uisce Éireann, if defects or issues of non-compliance with the

Relevant Standards arise in the water supply or the wastewater collection elements of the Water and Wastewater Services Infrastructure during the Defects Liability Period.

1.5. Release of the Self-Lay Surety shall only occur at the end of the extended Defects Liability Period as set out in Special Condition 1.4 (Appendix 3, Part 2).

1.6. All Grants of Wayleaves and Easements for the Water and Wastewater Services Infrastructure shall be provided in accordance with General Condition 13.

1.7. If, following assessment by Uisce Éireann, any remedial work is required to address any deficiencies in the water supply or wastewater collection elements of the Water and Wastewater Services Infrastructure, the Developer must provide Uisce Éireann with a proposed programme of works for approval no later than ten (10) working days prior to commencement of any such remedial works.

1.8. The completion of any specified remedial works by the Developer shall be a pre-condition to the issuance by Uisce Éireann of a Conformance Certificate or Completion Certificate, as applicable. The Developer shall confirm when the remedial works have been completed, whereupon Uisce Éireann (or its agent) will carry out an inspection of the works. If as a result of such inspection, further remedial works are found to be required, the provisions of Special Conditions 1.7 and 1.8 (Appendix 3, Part 2) shall apply to such further remedial works as may be required. Any dispute(s) regarding the remedial works shall be dealt with pursuant to General Condition 36.

1.9. The Developer shall, as and when required by Uisce Éireann, be obliged to comply with the following additional technical requirements;

1.9.1. The Developer shall provide test results of samples that have been removed from butt fusion weld areas and electrofusion couplers to Uisce Éireann's field engineer as requested to establish the quality of workmanship in respect of the Water and Wastewater Services Infrastructure.

1.9.2. The Developer shall comply with any additional requests from field engineers that are deemed necessary to establish the quality of the Water and Wastewater Services Infrastructure that has been installed.

2. Special Conditions – Water [Water and Wastewater Services Infrastructure]

2.1. The Developer shall undertake the following surveys/investigations/tests to confirm to Uisce Éireann the integrity of the water supply elements of the Water and Wastewater Services Infrastructure:

2.1.1. intrusive ground investigations including slit trenches, cores and trial holes at locations specified by Uisce Éireann to confirm substantial compliance with the requirements of the Code of Practice for Water Infrastructure;

2.1.2. water audits, condition surveys and associated reports on all water supply elements of the Water and Wastewater Services Infrastructure, as required;

2.1.3. pressure testing of the water supply elements of the Water and Wastewater Services Infrastructure in accordance with the Code of Practice for Water Infrastructure ; and

2.1.4. cleaning, swabbing, chlorination of the water supply elements of the Water and Wastewater Services Infrastructure; water quality sampling/testing in accordance with the Code of Practice for Water Infrastructure.

2.2. Pending the issue of the relevant Completion Certificate by Uisce Éireann, the maintenance and operation of any associated water booster stations within or serving the Development will remain the responsibility of the Developer and/or any estate management company to which the water booster stations have been transferred by the Developer. In the event that such maintenance and/or operation are not undertaken by the Developer and/or any estate management company, Uisce Éireann reserves the right to undertake these functions and to recover its reasonable cost from the Developer. Otherwise, Uisce Éireann shall have no responsibility for the water booster stations and no liability, howsoever arising, shall attach to Uisce Éireann in this regard.

2.3. Bulk meter(s) will be fitted at the water supply Connection Point(s) for the Development. Bulk meter logging will be carried out by the Developer using an agreed service provider. The costs associated with the provision of the bulk meter and the bulk meter logging for the Development shall be borne by the Developer.

2.4. The Developer will be informed of any leakage determined from the bulk meter loggings and shall undertake investigations to locate the causes of the leaks. The Developer shall undertake any necessary repairs in accordance with Special Condition's 1.7 & 1.8 (Appendix 3 Part 2). Completion of the said repairs shall be verified by way of close out readings from the relevant bulk meter(s) which shall be taken by Uisce Éireann.

3. Special Conditions – Wastewater [Water and Wastewater Services Infrastructure]

3.1. The Developer will undertake the following surveys/investigations/tests to confirm to Uisce Éireann the integrity of the Wastewater collection elements of the Water and Wastewater Services Infrastructure:

3.1.1. intrusive ground investigations including slit trenched, cores and trial holes at locations specified by Uisce Éireann to confirm substantial compliance with the requirement of the Code of Practice for Wastewater Infrastructure;

3.1.2. CCTV surveys, manhole condition surveys and associated reports on all Wastewater collection elements of the Water and Wastewater Services Infrastructure, as required;

3.1.3. flow and load surveys for the Wastewater collection elements of the Water and Wastewater Services Infrastructure; dye testing of the Wastewater collection elements of the Water and Wastewater Services Infrastructure /Storm Water

Sewer to ensure that there are no improper connections to/between either of these; sampling and associated testing of the Storm Water Sewer flow to ensure no Wastewater contamination;

3.1.4. testing of all Wastewater gravity collection pipes within the Water and Wastewater Services Infrastructure and infiltration/exfiltration testing of associated manholes/chambers in accordance with the requirements of the Code of Practice for Wastewater Infrastructure; and

3.1.5. pressure testing of Wastewater pressure mains (if present) associated with the Wastewater collection elements of the Water and Wastewater Services Infrastructure in accordance with the Code of Practice for Wastewater Infrastructure.

3.2. Pending the issue of the relevant Completion Certificate by Uisce Éireann, the maintenance and operation of any associated Wastewater pump stations within or serving the Development will remain the responsibility of the Developer and/or any estate management company to which the Wastewater pump stations have been transferred by the Developer. In the event that such maintenance and/or operation are not undertaken by the Developer and/or any estate management company, Uisce Éireann reserves the right to undertake these functions and to recover its reasonable cost from the Developer. Otherwise, Uisce Éireann shall have no responsibility for the Wastewater pump stations and no liability, howsoever arising, shall attach to Uisce Éireann in this regard.

Appendix 3
Special Conditions - Part 3

Special Conditions relating to Developments with Connections via Third Party Infrastructure

These Special Conditions apply to developments where the Self-Lay Works are being connected to the Network(s) through water and/or wastewater services infrastructure which is owned, operated and/or maintained by a party (the "**Third Party**") other than Uisce Éireann. The Third Party's water and/or wastewater services infrastructure shall, hereinafter, be referred to as the **Third Party Infrastructure**.

1. Special Conditions

1.1. The Developer shall, prior to the commencement of any Self-Lay Works, identify and procure the transfer to Uisce Éireann of any arterial/direct water and/or wastewater infrastructure, including all related pipes, pumping station(s), rising mains, etc. (the "**Arterial Pipes**") within the Third Party Infrastructure which is in place between the Water and Wastewater Service Infrastructure and the Network(s) and consequently shall, prior to the commencement of the Self-Lay Works, be required to provide to Uisce Éireann:

1.1.1. a transfer of the Arterial Pipes from the Third Party to Uisce Éireann which vests the Arterial Pipes in Uisce Éireann (included within the Deed of Grant of Easements & Transfer In Respect of Arterial Pipes (Appendix 7, Part B)) together with a formal assignment to Uisce Éireann of all warranties in respect of the mechanical and electrical plant and/or equipment utilised in the pumping stations and/or rising mains;

1.1.2. where the Arterial Pipes include pumping stations, rising mains, etc., the Developer shall procure from the Third Party written confirmation (in a form acceptable to Uisce Éireann) that;

1.1.2.1. the Third Party will continue to operate and maintain these elements of the Arterial Pipes until such time as the pumping stations and/or rising mains are taken in charge by the relevant Local Authority.

1.1.2.2. the Third Party will formally notify all prospective successors in title to the Third Party of the development/premises within which the Arterial Pipes are located of this continuing obligation in respect of the operation and maintenance of the pumping stations and/or rising mains.

1.1.3. Any subsequent transfer of responsibility for the operation and/or maintenance of any relevant pumping station(s) and/or rising main(s) from the Third Party to Uisce Éireann shall be subject to agreement in writing between the parties.

1.1.4. For the avoidance of doubt, all Third Party Infrastructure not included within the Arterial Pipes will remain within the ownership of the Third Party.

1.2. The Developer shall establish to the satisfaction of Uisce Éireann, with the support of fully detailed design documentation, that the Arterial Pipes have adequate capacity and have been sufficiently constructed to convey the requisite volumes of water and/or Wastewater through the Arterial Pipes to the Network(s). The Developer undertakes to Uisce Éireann to upgrade the Arterial Pipes as part of the Self-Lay Works to the

same standards as the Water and Wastewater Services Infrastructure (as set out herein) should this be required, at the sole discretion of Uisce Éireann, following its review of the Developer's design documentation.

1.3. The Developer shall establish to the satisfaction of Uisce Éireann, with the support of adequate documentation (including, but not limited to, test certificates, CCTV survey results, etc.) that the Arterial Pipes are substantially in compliance with the requirements of the Code(s) of Practice and Standard Details (as set out in Appendix 6 of the Connection Offer). In the event that the Arterial Pipes are not found to be substantially compliant with the requirements of the Code(s) of Practice and Standard Details, the Developer agrees that it will undertake any reasonable remedial works specified by Uisce Éireann as part of the Self-Lay Works.

1.4. Where any upgrade works (as referred to in Special Condition 1.2 above) and/or remedial works (as referred to in Special Conditions 1.3 above) have been completed by the Developer, the Developer shall undertake such surveys/investigations/tests as may be requested by Uisce Éireann to confirm the integrity of the water supply/Wastewater collection elements of the Arterial Pipes. These tests may include some or all of the following:

1.4.1. **Water**

1.4.1.1. intrusive ground investigations including slit trenches, cores and trial holes at locations specified by Uisce Éireann to confirm substantial compliance with the requirements of the Code of Practice for Water Infrastructure;

1.4.1.2. water audits, condition surveys and associated reports on all relevant water supply elements of the Arterial Pipes, as required;

1.4.1.3. pressure testing of the relevant water supply elements of the Arterial Pipes in accordance with the Code of Practice for Water Infrastructure ;

1.4.1.4. cleaning, swabbing, chlorination of the water relevant supply elements of the Arterial Pipes; water quality sampling/testing in accordance with the Code of Practice for Water Infrastructure; and/or

1.4.1.5. field tests to confirm the adequacy of the water supply pump station.

1.4.2. **Wastewater**

1.4.2.1. intrusive ground investigations including slit trenched, cores and trial holes at locations specified by Uisce Éireann to confirm substantial compliance with the requirements of the Code of Practice for Wastewater Infrastructure;

1.4.2.2. CCTV surveys, manhole condition surveys and associated reports on all relevant Wastewater collection elements of the Arterial Pipes, as required;

1.4.2.3. testing of all Wastewater gravity collection pipes within the relevant Wastewater collection elements of the Arterial Pipes and infiltration/exfiltration testing of associated manholes/chambers in

accordance with the requirements of the Code of Practice for Wastewater Infrastructure;

1.4.2.4. pressure testing of Wastewater pressure mains (if present) associated with the Wastewater collection elements of the relevant Wastewater collection elements of the Arterial Pipes in accordance with the Code of Practice for Wastewater Infrastructure; and/or

1.4.2.5. field tests to confirm the adequacy of the Wastewater collection pump station.

1.5. The parties agree that any upgrade works and/or remedial works (as referred to in Special Conditions 1.2 & 1.3 above) shall, on completion, be subject to the provisions of General Condition 11 [Self-Lay Works], in particular in respect of the requirements for the issuance of the Conformance and/or Completion Certificates by Uisce Éireann.

1.6. Prior to the commencement of the Self-Lay Works, the Developer shall deliver to Uisce Éireann:

1.6.1. the deliverables specified in Special Condition 1.1 above;

1.6.2. a duly executed Deed of Grant of Easements & Transfer In Respect of Arterial Pipes (in duplicate) in the form as set out at Appendix 7 Part B of the Connection Offer for the benefit of Uisce Éireann and the Arterial Pipes, (to include without limitation a protected strip of **3.0** metres on all sides of the Arterial Pipes in respect of the full length of the Arterial Pipes) TOGETHER WITH the PRA Compliant Map; and

1.6.3. evidence that the Third Party has irrevocably instructed its appointed solicitor to use best endeavours to stamp and register the Deed(s) of Grant of Easements & Transfer In Respect of Arterial Pipes in the Property Registration Authority as soon as practicable at the Developer's expense and to provide notice of the relevant dealing number and evidence of such registration to Uisce Éireann immediately following completion of registration;

1.6.4. evidence that the Third Party has agreed to include reference and notice of the Deed(s) of Grant of Easements & Transfer In Respect of Arterial Pipes in favour of Uisce Éireann in any transfers, conveyances, assignment, lease and/or licence which the Third Party may have with any other party.

2. The Final Documents to be submitted by the Developer shall include any works completed in relation to the Arterial Pipes.
3. The Developer is referred to Figures 1 and 2 of the Specification (Appendix 5) for details of the Arterial Pipes.

Appendix 3
Special Conditions - Part 4

Special Conditions relating to Connection Offers for Gated and/or Private Developments

Not Used

Appendix 3
Special Conditions - Part 5

Special Conditions relating to Connection Offers where a Diversion Agreement is required to facilitate diversion of a Water Main and/or Sewer

Not Used

Appendix 3
Special Conditions - Part 6

Special Conditions relating to Connection Offers where a Major Connection Agreement is required in conjunction with the Self-Lay Works

Not Used

Appendix 3, Part 7

First Mover Scheme

Uisce Éireann's First Mover scheme is the mechanism by which Uisce Éireann seeks to apportion the costs of building Network extensions across the developments connected through them.

First Mover Disadvantage is where a developer (the First Mover Developer) pays Uisce Éireann for a Water Main or Sewer extension and subsequently other developers make use of this extension without contributing to the capital costs that the original developer incurred for this extension i.e., the Quotable Charge is not proportionally distributed between developers and only the First Mover Developer pays for the extension upfront.

Developers impacted by First Mover Disadvantage may qualify for a Shared Quotable Rebate (SQR). Developers who qualify as First Mover Developers may receive a SQR when subsequent developments are connected through connection facilities constructed by the First Mover Developer. The SQR, if applicable, will be paid from the Shared Network Infrastructure Charge (SNIC) charged to the subsequent developer(s).

Applicable Definitions

"First Mover Developer" *means a person or a business who pays Uisce Éireann for a Water Main and/or Sewer extension to which subsequent Developers connect in the future;*

"First Mover Disadvantage" *means a specific aspect of Uisce Éireann's Connection Charging Policy as approved by the CRU – CRU/202342. First Mover Disadvantage is where a Developer pays Uisce Éireann for a Water Main or Sewer extension and subsequently other developers make use of this extension without contributing to the capital costs that the original Developer incurred for this extension i.e., the Quotable Charge is not proportionally distributed between developers and only the First Mover Developer pays for the extension upfront;*

"Subsequent Mover" *means a person or a business who pays a SNIC to fund a SQR and may also be entitled to receive a SQR in the event that further connections are made by Subsequent Movers to a Water Main or Sewer extension;*

"Subsequent Mover Financial Information" *means bank account details into which potential SQRs will be paid;*

"Shared Network Infrastructure Charge" *means a charge paid by subsequent developers to fund the Shared Quotable Rebate paid to First Mover Developer(s);*

"Shared Quotable Rebate" *means a rebate paid to a First Mover Developer if subsequent developers connect to Connection Facilities constructed by the First Mover Developer. The rebate is funded through the subsequent developers who connect to the Connection Facilities and is paid to the First Mover Developer after subsequent.*

The Development to which this Connection Agreement relates is a subsequent development for the purposes of the First Mover scheme. Accordingly, the Development is subject to a Shared Network Infrastructure Charge (as part of the Connection Charge). The Developer acknowledges and agrees that the connection of the Development to the Network(s) is strictly subject to the completion of any connection works to be completed by the First Mover Developer. The Developer acknowledges and agrees that:

1. Uisce Éireann shall not be liable for any loss or damage suffered by the Developer in respect of delays resulting from any cause whatsoever including any delays in the making of a connection(s) between the Development and the Network(s);

2. The existing GC28.1 (Data Protection) shall be deleted in its entirety and replaced with the following:

28.1 ***Data Protection***

If and to the extent personal data is processed (as such terms are defined in the Data Protection Legislation) pursuant to this Connection Agreement, the provisions of Schedule 2 shall apply. The Developer acknowledges that Uisce Éireann will be required to retain information (including the Subsequent Mover Financial Information) arising from this Connection Agreement for the purposes of administering the First Mover scheme.

Appendix 3

Special Conditions - Costs

The Developer shall be responsible for all costs in connection with and/or arising out of the Special Conditions set out in this Appendix 3, including but not limited to any reasonable costs incurred by Uisce Éireann in excess of the Connection Charge and any restoration costs.

Appendix 4

Connection Charge Summary

Connection Charge		
Water Connection Charge		
	Standard Charge	€196,984.00
	Standard Charge – Additional Service Length	€0.00
	Quotable Charge (excl. Road Opening Licence)	
	Quotable – Road Opening Licence Fee	
	Quotable – Additional Costs Associated with Road Opening Licence	
	Shared Network Infrastructure Charge - Water	
	Sub total	**€196,984.00**
Wastewater Connection Charge		
	Standard Charge	€389,363.00
	Standard Charge – Additional Service Length	€0.00
	Quotable Charge (excl. Road Opening Licence)	
	Quotable – Road Opening Licence Fee	
	Quotable – Additional Costs Associated with Road Opening Licence	
	Shared Network Infrastructure Charge - Wastewater	
	Sub total	**€389,363.00**
Total Connection Charge		€586,347.00

Surety		
	Surety Standard	€109,875.00
	Surety Quotable	
Total Surety		€109,875.00

Appendix 5

Specification

Part 1

LEGEND:

Proposed Foul Sewer Manhole — FW1

Proposed Foul Sewer

Proposed Inspection Chamber

3.13 Gravity Sewer Pipe Material Types

The types and fittings outlined herein shall be used in the construction of the Gravity Sewers. Pipe material should not change between manholes. The list below does not apply to pipes installed by pipe jacking or micro tunnelling.

3.13.1 *Concrete:* Concrete Sewer pipes with spigot and socket joints and rubber ring fittings shall comply with IS EN 1916 (2002), BS 5911, Part 1 (2002 – 2010) and IS 6 (2004) or equivalent standard, strength Class 120 with minimum crushing loads in accordance with Table F of BS 5911-1 (2002-2010). All pipes and fittings shall have gasket type joints of spigot and socket or rebated form. (Pipe diameters 225mm and above)

3.13.2 *Thermoplastic Structured Wall Pipes:* Thermoplastic structured wall pipes shall comply with the provisions of IS EN 13476 (2007/2009). Pipes to be of Stiffness Class 8kN/m² and to be capable of demonstrating a jetting resistance of 2,600 psi (180 Bar) without damage when tested in accordance with Section 3.3 of WIS 4-35-01 (2008). (Sewer diameters 150mm up to 450mm. Service Connections of 100mm diameter).

3.13.3 *Unplasticised PVC:* Unplasticised PVC pipes and fittings shall comply with the provisions IS EN 1401 2009/2012. Pipes to be application area code "UD", Stiffness Class 8kN/m². Provision for jetting shall be based on the WRc Sewer Jetting Code of Practice, June 1997. Pipes to be capable of resisting a maximum jetting pump pressure of 2,600psi (180 Bar) without damage. (Sewer diameters 150mm up to 450mm, Service Connections of 100mm diameter).

NOTES:

Inspection Chambers to Comply with STD-WW-02 & 03

Foul Sewers Pipes to consist of Wavin WAV SPEC 6MB to BS EN 13476-2 2007 Type A multilayer and WIS 4-35-01 to comply with section 3.13 IW Code of Practice

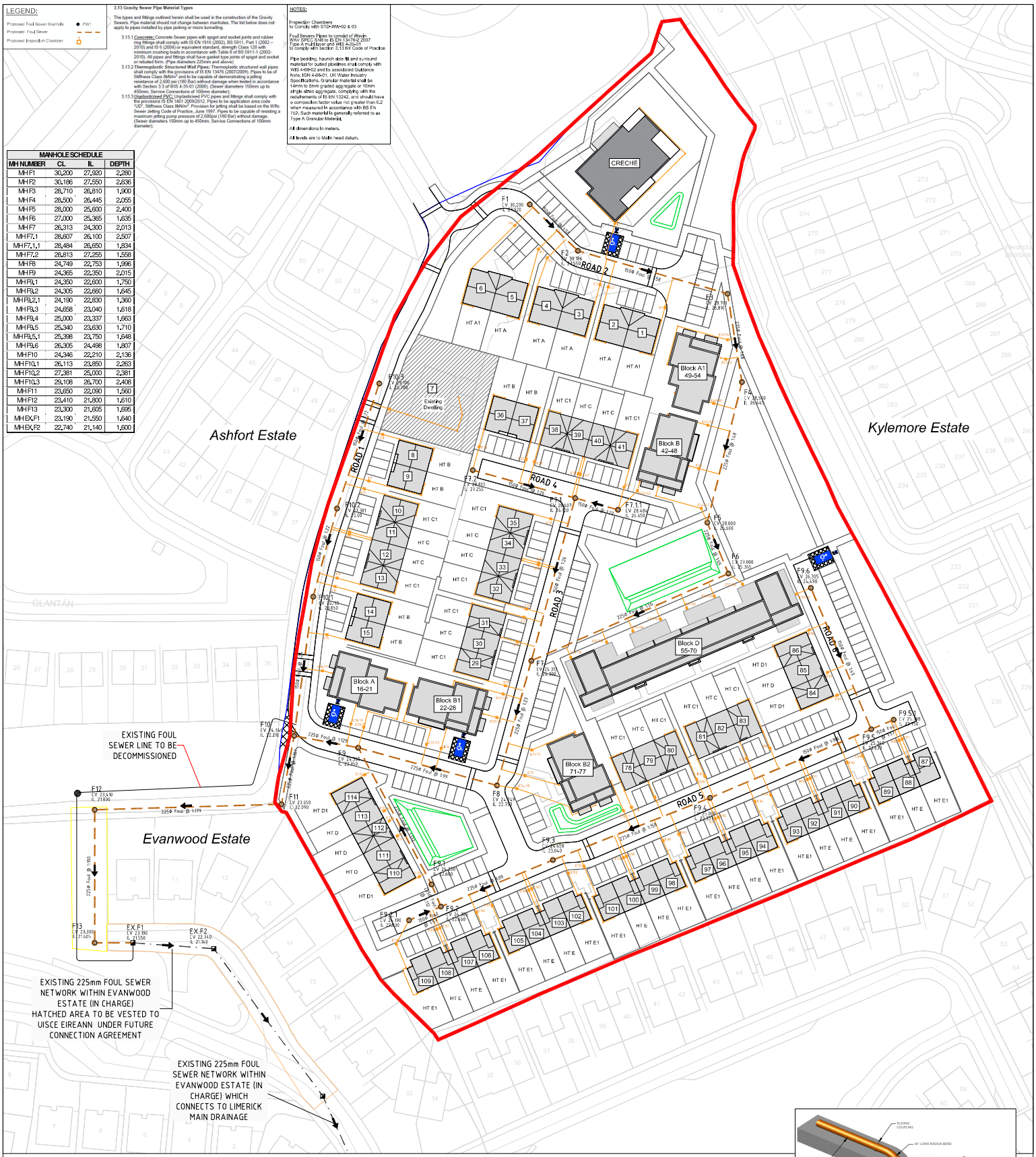
Pipe bedding, haunch side fill and surround material for buried pipelines shall comply with WIS 4-08-02 and its associated Guidance Note, IGN 4-08-01, UK Water Industry Specifications. Granular material shall be 14mm to 5mm graded aggregate or 10mm single sized aggregate, complying with the requirements of BS EN 13242, and should have a compaction factor value not greater than 0.2 when measured in accordance with BS EN 752. Such material is generally referred to as Type A Granular Material.

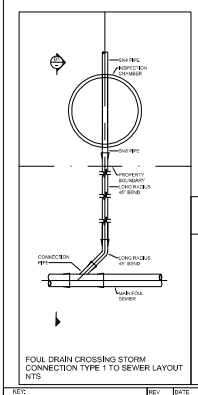
All dimensions in meters.

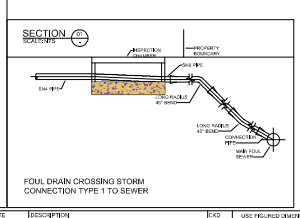
All levels are to Malin head datum.

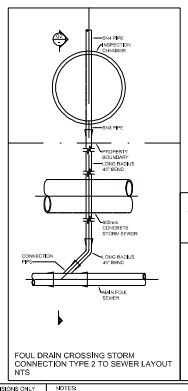
MANHOLE SCHEDULE

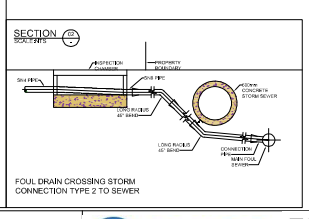
MH NUMBER	CL	IL	DEPTH
MHF1	30,200	27,920	2,280
MHF2	30,186	27,550	2,636
MHF3	28,710	26,810	1,900
MHF4	28,500	26,445	2,055
MHF5	28,000	25,600	2,400
MHF6	27,000	25,365	1,635
MHF7	26,313	24,300	2,013
MHF7.1	28,607	26,100	2,507
MHF7.1.1	28,484	26,650	1,834
MHF7.2	28,813	27,255	1,558
MHF8	24,749	22,753	1,996
MHF9	24,365	22,350	2,015
MHF9.1	24,350	22,600	1,750
MHF9.2	24,305	22,660	1,645
MHF9.2.1	24,190	22,830	1,360
MHF9.3	24,658	23,040	1,618
MHF9.4	25,000	23,337	1,663
MHF9.5	25,340	23,630	1,710
MHF9.5.1	25,398	23,750	1,648
MHF9.6	26,305	24,498	1,807
MHF10	24,346	22,210	2,136
MHF10.1	26,113	23,850	2,263
MHF10.2	27,381	25,000	2,381
MHF10.3	29,108	26,700	2,408
MHF11	23,850	22,090	1,560
MHF12	23,410	21,800	1,610
MHF13	23,300	21,605	1,695
MHEX.F1	23,190	21,550	1,640
MHEX.F2	22,740	21,140	1,600

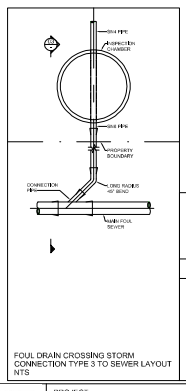


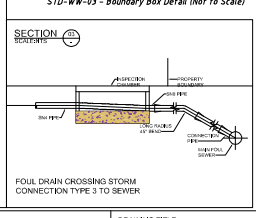


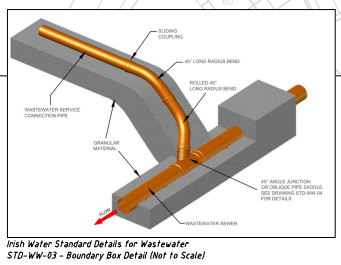












Irish Water Standard Details for Wastewater
STD-WW-03 – Boundary Box Detail (Not to Scale)

REV | DATE | DESCRIPTION | CKD

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE OFF DRAWINGS. CHECK ALL DIMENSIONS ON SITE. COPYRIGHT OSL.

NOTES:

OSL·BUTLER CONSULTING ENGINEERS
Civil, Structural & Project Engineering Services
Unit 38 Eastgate Drive, Little Island, Cork T45 YO49
Tel: +353 21 4297672

PROJECT: 24050 Monaleen
PROJECT STATUS: Planning
SCALE: 1:500 @A1
ISSUE DATE: 29.11.24
DRAWN BY: DV

DRAWING TITLE: Site Layout with Foul Sewer
DRAWING NO: 24050-OSLB-10-00-DR-C-0010
FOR PLANNING

SUITABILITY: A3
REVISION: 01

LEGEND:

- Existing Watermain
- Proposed 100mm Ø Class 'B' uPVC Watermain
- Proposed 150mm Ø Class 'B' uPVC Watermain
- Proposed Air Valve (A.V.)
- Proposed Stuilve Valve (SV)
- Proposed Scour Valve (Sc.V)
- Proposed Hydrant (H)
- Washout Hydrant (WO)
- Off-Line Hydrant (H.Off)
- Telemetry System - Kiosk (K)
- Bulk flow meter (BM)
- By-Pass flow meter 22 mm PE Pipe (bpf)
- Proposed Boundary Box (bbf)

NOTES:

Pipe bedding, haunch side fill and surround material for buried pipelines shall comply with WS 4-08-02 and its associated Guidance Note. IGN 4-08-01, UK Water Industry Specifications. Granular material shall be 14mm to 5mm graded aggregate or 10mm single sized aggregate, complying with the requirements of BS EN 13242, and should have a compaction factor value not greater than 0.2 when measured in accordance with BS EN 752. Such material is generally referred to as Type A Granular Material.

All dimensions in meters.

All levels are to Malin head datum.

All details are to be in accordance with Irish water Code of Practice & Irish Water Standard Details.

Ashfort Estate

Kylemore Estate

Evanwood Estate

CRECHE F.F.L 30.00

Existing Dwelling 29.80

Block A 16-21 F.F.L 24.70

Block B1 22-28 F.F.L 25.00

Block B2 71-77 F.F.L 25.00

Block A1 49-54 F.F.L 28.90

Block B 42-48 F.F.L 28.40

Block D 55-70 F.F.L 26.60

ROAD 1

ROAD 2

ROAD 3

ROAD 4

ROAD 5

ROAD 6

Proposed 150Ø HDPE Watermain

Existing 300mm Watermain

Irish Water Standard Details for Water - STD-W-19 - On-line Hydrant Details (Not to Scale)

Irish Water Standard Details for Water - STD-W-38F - By-Pass Flow Meter Chamber (Not to Scale)

Irish Water Standard Details for Water - STD-W-09 - Boundary Box Detail (Not to Scale)

Irish Water Standard Details for Water - STD-W-07 - General Pipe Connections (Not to Scale)

Irish Water Standard Details for Water - STD-W-15 - Stake Valve Details (Not to Scale)

Irish Water Standard Details for Water - STD-W-22 - On-line Air Valve (Not to Scale)

Irish Water Standard Details for Water - STD-W-27 - Marker Posts / Plates (Not to Scale)

Irish Water Standard Details for Water - STD-W-30 - Scour Chamber (Not to Scale)

Irish Water Standard Details for Water - STD-W-26 - Electromagnetic Meter Chamber (80-250 Dia.) (Not to Scale)

KEY

REV	DATE	DESCRIPTION	CKD

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NOTES

OSL·BUTLER CONSULTING ENGINEERS

Civil, Structural & Project Engineering Services

Unit 3B Eastgate Drive, Little Island, Cork T45 YO49

Tel: +353 21 4297672

PROJECT: 24050 Monaleen

PROJECT STATUS: Planning

SCALE: 1:500 @A1

ISSUE DATE: 29.11.24

DRAWN BY: DV

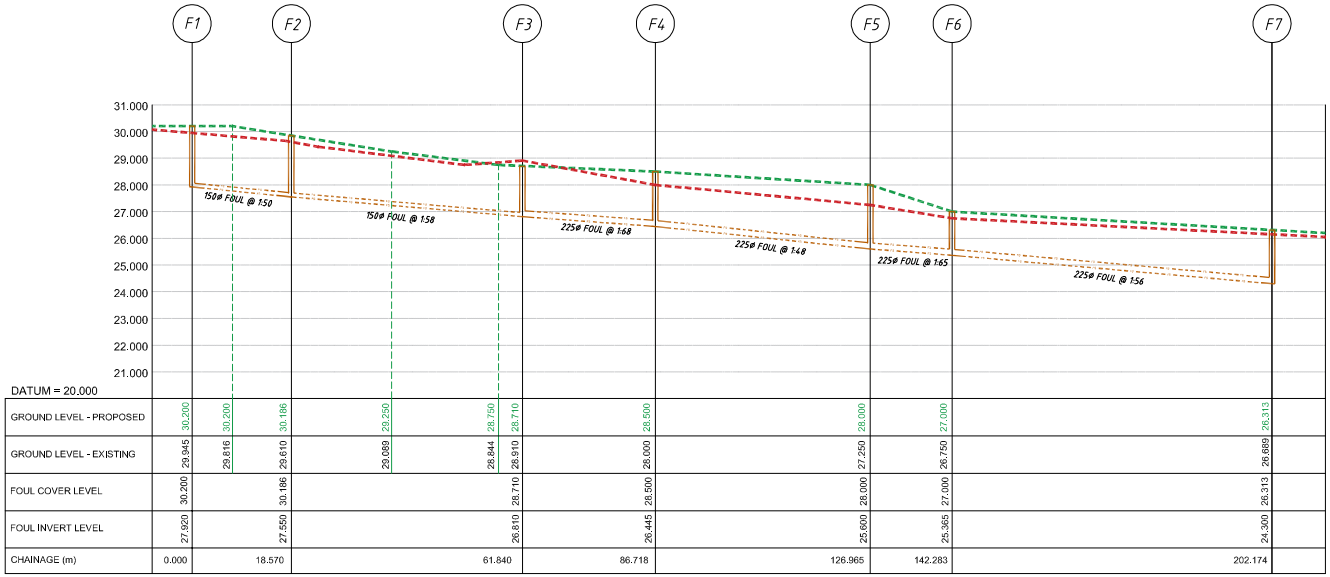
DRAWING TITLE: Site Layout with Watermain

DRAWING NO: 24050-OSLB-10-00-DR-C-0011

FOR PLANNING

SUITABILITY: A3

REVISION: 01



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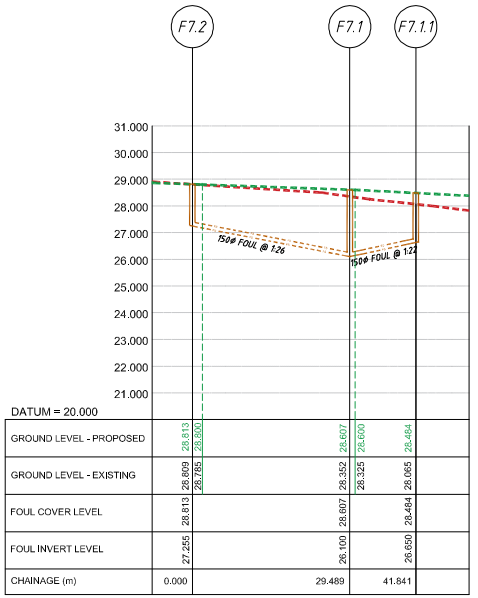
GROUND LEVEL - PROPOSED	30.200	30.200	30.186	29.250	28.750	28.710	28.500	28.000	27.000	26.313
GROUND LEVEL - EXISTING	29.945	29.816	29.610	29.089	28.844	28.910	28.000	27.250	26.750	26.689
FOUL COVER LEVEL	30.200		30.186			28.710	28.500	28.000	27.000	26.313
FOUL INVERT LEVEL	27.920		27.550			26.810	26.445	25.600	25.365	24.300
CHAINAGE (m)	0.000		18.570			61.840	86.718	126.965	142.283	202.174

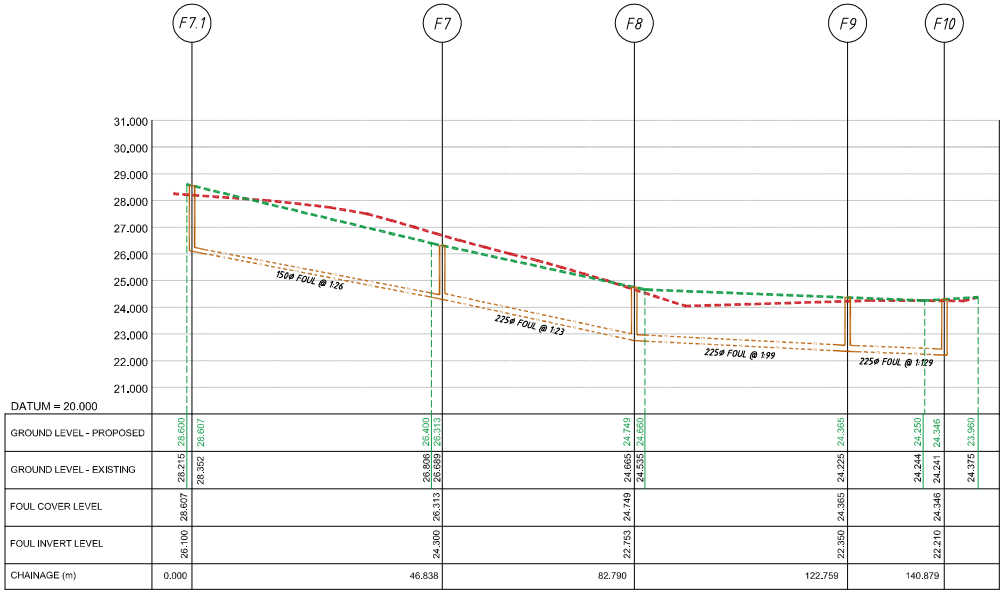
LONGITUDINAL SEWER SECTION FROM F1 to F7
HORIZONTAL SCALE 1:500, VERTICAL SCALE 1:100



DATUM = 20.000

GROUND LEVEL - PROPOSED	28.813	28.600	28.607	28.600	28.484
GROUND LEVEL - EXISTING	28.809	28.785	28.352	28.325	28.065
FOUL COVER LEVEL	28.813		28.607	28.484	
FOUL INVERT LEVEL	27.255		26.100	26.650	
CHAINAGE (m)	0.000		29.489	41.841	

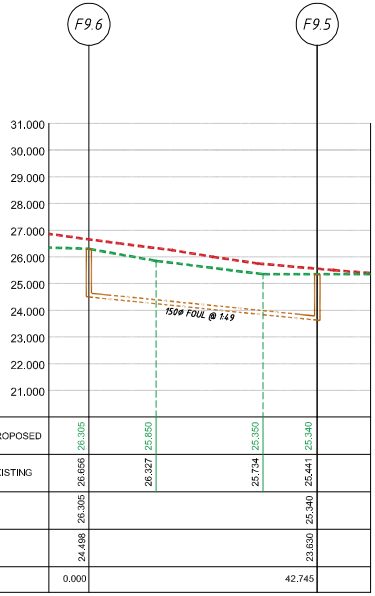
LONGITUDINAL SEWER SECTION FROM F7.2 to F7.1.1
HORIZONTAL SCALE 1:500, VERTICAL SCALE 1:100



DATUM = 20.000

GROUND LEVEL - PROPOSED	28.600	28.607	26.400	26.313	24.749	24.660	24.365	24.250	24.346	23.960
GROUND LEVEL - EXISTING	28.215	28.352	26.806	26.669	24.665	24.535	24.225	24.244	24.241	24.375
FOUL COVER LEVEL	28.607		26.313		24.749		24.365		24.346	
FOUL INVERT LEVEL	26.100		24.300		22.753		22.350		22.210	
CHAINAGE (m)	0.000		46.838		82.790		122.759		140.879	

LONGITUDINAL SEWER SECTION FROM F7.1 to F10
HORIZONTAL SCALE 1:500, VERTICAL SCALE 1:100



DATUM = 20.000

GROUND LEVEL - PROPOSED	26.305	25.850	25.350	25.340	
GROUND LEVEL - EXISTING	26.656	26.327	25.734	25.441	
FOUL COVER LEVEL	26.305			25.340	
FOUL INVERT LEVEL	24.498			23.630	
CHAINAGE (m)	0.000			42.745	

LONGITUDINAL SEWER SECTION FROM F9.6 to F9.5
HORIZONTAL SCALE 1:500, VERTICAL SCALE 1:100

Legend:
Existing Ground Profile
Proposed Ground Profile
Proposed Foul Sewer

KEY:

REV	DATE	DESCRIPTION	CKD

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NOTES

OSL·BUTLER CONSULTING ENGINEERS
Civil, Structural & Project Engineering Services
Unit 3B Eastgate Drive, Little Island, Cork T45 YO49
Tel: +353 21 4297672

PROJECT: 24050 Monaleen
PROJECT STATUS: Planning
SCALE: 1:500@A1
ISSUE DATE: 29.11.24
DRAWN BY: DV

DRAWING TITLE: Longitudinal Foul Sewer Section
DRAWING NO: 24050-OSLB-10-00-DR-C-0012
FOR PLANNING

SUITABILITY: A3
REVISION: 01

Part 2

Fig. 1 – Arterial/direct Water Route if Appendix 3, Part 3 applies (Not Applicable)

Fig. 2 – Arterial/direct Wastewater Route

LEGEND:

Proposed Foul Sewer Manhole — FW1

Proposed Foul Sewer

Proposed Inspection Chamber

3.13 Gravity Sewer Pipe Material Types

The types and fittings outlined herein shall be used in the construction of the Gravity Sewers. Pipe material should not change between manholes. The list below does not apply to pipes installed by pipe jacking or micro tunnelling.

3.13.1 *Concrete:* Concrete Sewer pipes with spigot and socket joints and rubber ring fittings shall comply with IS EN 1916 (2002), BS 5911, Part 1 (2002 – 2010) and IS 6 (2004) or equivalent standard, strength Class 120 with minimum crushing loads in accordance with Table F of BS 5911-1 (2002-2010). All pipes and fittings shall have gasket type joints of spigot and socket or rebated form. (Pipe diameters 225mm and above)

3.13.2 *Thermoplastic Structured Wall Pipes:* Thermoplastic structured wall pipes shall comply with the provisions of IS EN 13476 (2007/2009). Pipes to be of Stiffness Class 8kN/m² and to be capable of demonstrating a jetting resistance of 2,600 psi (180 Bar) without damage when tested in accordance with Section 3.3 of WIS 4-35-01 (2008). (Sewer diameters 150mm up to 450mm. Service Connections of 100mm diameter).

3.13.3 *Unplasticised PVC:* Unplasticised PVC pipes and fittings shall comply with the provisions IS EN 1401 2009/2012. Pipes to be application area code "UD", Stiffness Class 8kN/m². Provision for jetting shall be based on the WRc Sewer Jetting Code of Practice, June 1997. Pipes to be capable of resisting a maximum jetting pump pressure of 2,600psi (180 Bar) without damage. (Sewer diameters 150mm up to 450mm, Service Connections of 100mm diameter).

NOTES:

Inspection Chambers to Comply with STD-WW-02 & 03

Foul Sewers Pipes to consist of Wavin WAV SPEC 6MB to BS EN 13476-2 2007 Type A multilayer and WIS 4-35-01 to comply with section 3.13 IW Code of Practice

Pipe bedding, haunch side fill and surround material for buried pipelines shall comply with WIS 4-08-02 and its associated Guidance Note, IGN 4-08-01, UK Water Industry Specifications. Granular material shall be 14mm to 5mm graded aggregate or 10mm single sized aggregate, complying with the requirements of BS EN 13242, and should have a compaction factor value not greater than 0.2 when measured in accordance with BS EN 752. Such material is generally referred to as Type A Granular Material.

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MHF11	23,850	22,090	1,560
MHF12	23,410	21,800	1,610
MHF13	23,300	21,605	1,695
MHEX.F1	23,190	21,550	1,640
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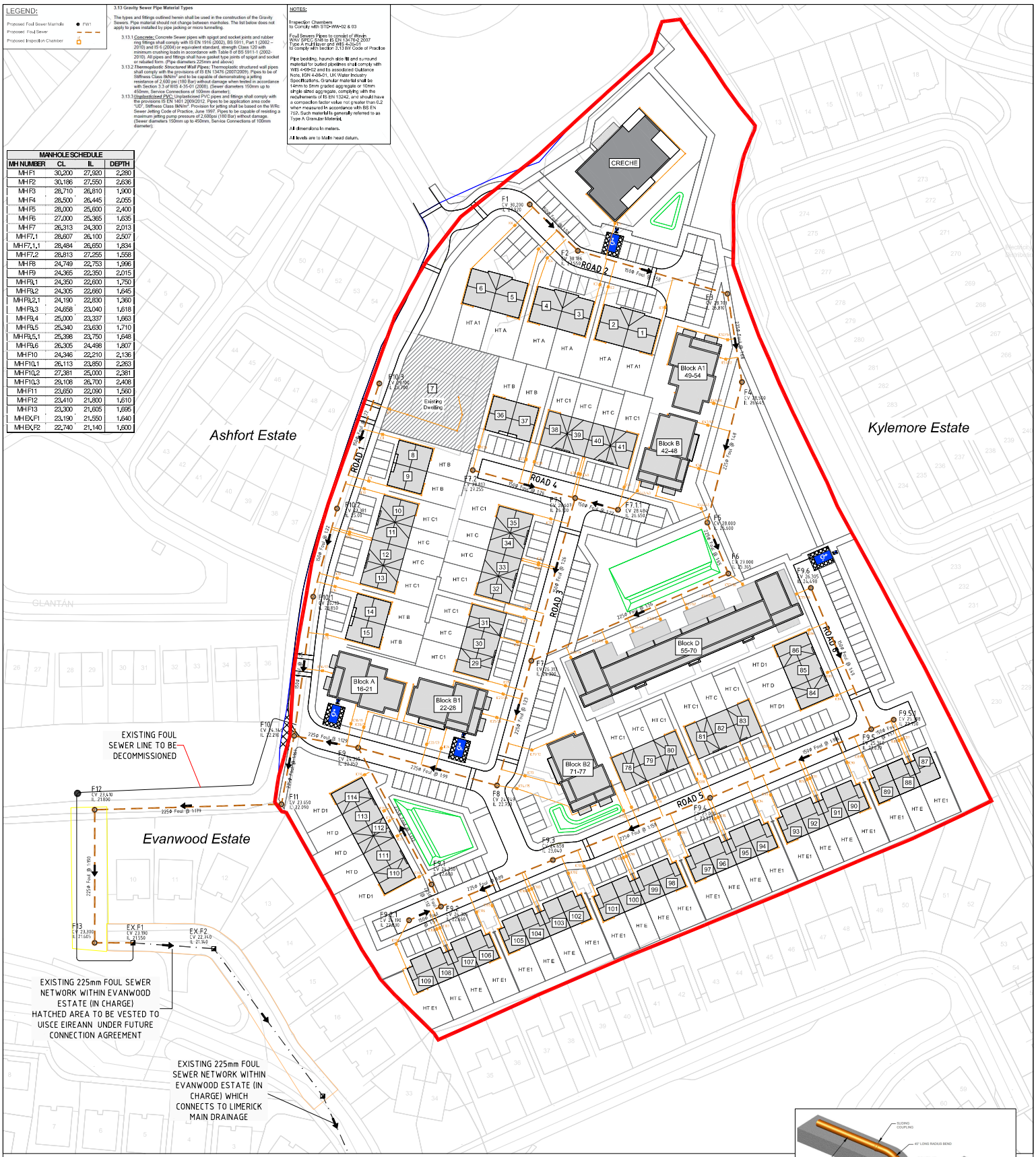

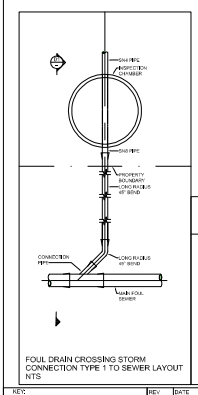

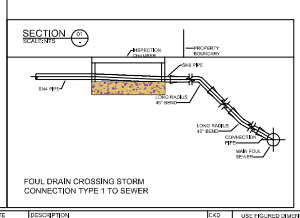

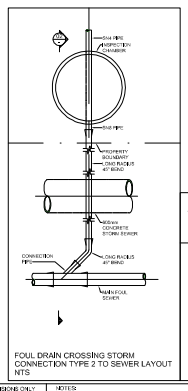

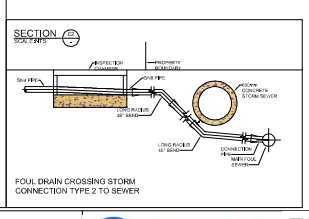

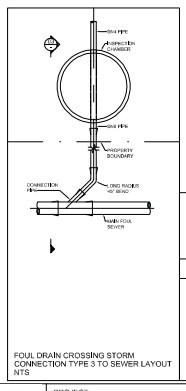

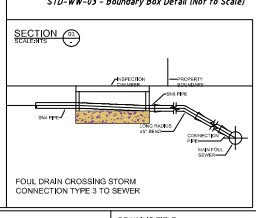

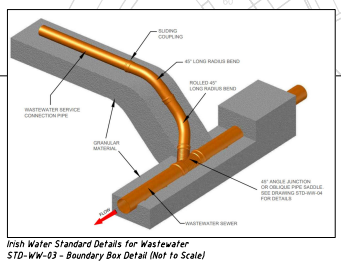

Irish Water Standard Details for Wastewater
STD-WW-03 – Boundary Box Detail (Not to Scale)

REV | DATE | DESCRIPTION | CKD

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE OFF DRAWINGS. CHECK ALL DIMENSIONS ON SITE. COPYRIGHT OSL.

NOTES:

OSL·BUTLER CONSULTING ENGINEERS
Civil, Structural & Project Engineering Services
Unit 38 Eastgate Drive, Little Island, Cork T45 YO49
Tel: +353 21 4297672

PROJECT: 24050 Monaleen
PROJECT STATUS: Planning
SCALE: 1:500 @A1
ISSUE DATE: 29.11.24
DRAWN BY: DV

DRAWING TITLE: Site Layout with Foul Sewer
DRAWING NO: 24050-OSLB-10-00-DR-C-0010
FOR PLANNING

SUITABILITY: A3
REVISION: 01

Appendix 6

Codes of Practice and Standard Details

- Standard Details for Water Infrastructure Version IW-CDS-5020-01 July 2020 (Revision 04)

- Standard Details for Wastewater Infrastructure Version IW-CDS-5030-01 July 2020 (Revision 04)

- Code of Practice for Water Infrastructure Version IW-CDS-5020-03 (Revision 2) - July 2020

- Code of Practice for Wastewater Infrastructure Version IW-CDS-5030-03 (Revision 2) – July 2020

Copies of these documents are included in USB.

Appendix 7

Part A

Form of Deed Grant of Wayleaves and Easements

DEVELOPER [ ]

and

UISCE ÉIREANN

DEED OF EASEMENT

Golf Links Road, Newtown, Monaleen, Limerick

CDS2300489201

DEED OF EASEMENT

THIS DEED OF EASEMENT is made the day of Two Thousand and .

BETWEEN **,** with company registration number having its registered address at , hereinafter called the "**Grantor**" which expression where the context so admits or requires shall include all Executors, Administrators, Successors and Assigns) of the One Part and **UISCE ÉIREANN**, a designated activity company, limited by shares, incorporated in Ireland (Company No. 530363), whose registered office is at Colvill House, 24-26 Talbot Street, Dublin 1 (hereinafter called "**UÉ**" which expression where the context so admits or requires shall include its successors and assigns) of the Other Part.

WHEREAS

A. In this Deed and in the several Schedules unless the context otherwise requires the following words and expressions shall have the **following** meanings:

(i) “Accessories” has the same meaning as in the Acts.

(ii) "The Acts" means the Water Services Acts 2007 to 2014.

(iii) "Water Services" has the same meaning as in the Acts.

(iv) "The Land" means the land of the Grantor specified in the First Schedule hereto.

(v) "The Pipeline" means any water main or water mains, sewer or sewers as defined in the Acts or Pipe or Pipes referred to in Clause 1 hereof which have been laid or are to be laid in the Strip and includes part of any such water main sewer or Pipe or any apparatus equipment or other thing (or part thereof) which is ancillary to any of them whether moveable or permanent or which assists in the inspection placement maintenance repair replacement rendering unusable or servicing of any water main or sewer or Pipe or any of them and which are required for Water Services.

(vi) “Pipe” has the same meaning as in the Acts.

(vii) "The Strip" means the strip of land more particularly delineated and described on the plan hereto annexed and thereon coloured yellow and forming part of the Land.

(viii) Reference to any enactment (including the Acts) includes reference to any statutory modification thereof whether by way of amendment, addition, deletion or repeal and re-enactment with or without amendment.

(ix) The singular of any word in these definitions or elsewhere in this Deed includes the plural and the masculine gender includes the feminine and neuter genders and where two or more persons together constitute the Grantor the

covenants by such a person shall be deemed to be joint and several covenants by both or everyone of such persons.

B. The Grantor is seized and possessed of the Land for the tenure mentioned in the First Schedule hereto.

C. UÉ is a designated activity company limited by shares and registered under the Companies Acts, 1963 to 2014, pursuant to Section 4 of the Water Services Act 2013 and is a water services Authority for the purposes of the Acts.

D. The Grantor has agreed with UÉ to grant to it for the purposes of its functions the rights easements and irrevocable licenses hereinafter set forth and upon treaty for such grant it was agreed that UÉ and the Grantor would give to the other of them the several covenants hereinafter contained on the part of each of them UÉ and the Grantor to the intent that the said covenants would be binding on their respective successors in title.

NOW THIS INDENTURE WITNESSETH as follows:-

1. In pursuance of the said Agreement and in consideration of the sum of one Euro (€1) paid by UÉ to the Grantor (the receipt whereof the Grantor doth hereby acknowledge) the Grantor as beneficial owner HEREBY GRANTS unto UÉ ALL AND SINGULAR the full free and sufficient wayleaves rights easements licenses and liberties to lay, keep, construct use inspect maintain repair replace remove or render unusable any mains Pipes, Accessories or any other materials connected with or facilitating the exercise or performance by UÉ of any of its functions or powers in connection with Water Services together with the right to introduce and place all necessary apparatus ancillary thereto on over or beneath the surface of that part of the Land that consists of the Strip together with the full and free right and liberty of UÉ its officers and servants and all persons authorised by UÉ to pass and repass over the Strip at all times by day and by night times on foot and with or without vehicles equipment machinery and apparatus for any of the purposes aforesaid and for the purposes of any similar works of UÉ contiguous to the Pipeline or the Strip and the Grantor further Grants as beneficial owner grants to UÉ its officers and servants and all persons authorised by UÉ full right and liberty to pass and repass over the Land of the Grantor for the purpose of accessing the Strip for any of the purposes aforesaid TO HOLD the said rights easements and licenses unto UÉ in fee simple or for such lesser interest as the Grantor may have as appearing in the First Schedule hereto (subject to the provision for surrender as specified in Clause 2 (iii) hereof) as rights easements and licenses appurtenant to all and every or any lands of UÉ used for the provision of Water Services and appurtenant to the rights which Uisce Éireann have or will have over lands of other Landowners for the provision of Water Services.

2. UÉ (to the intent so as to bind the rights easements and licenses hereby granted into whatsoever hands the same may come and with the intent to benefit and protect the Land and every part thereof) hereby covenants with the Grantor as follows:-

   (i) In exercising the rights easements and licences hereby granted to take all reasonable precautions to avoid obstruction or interference with the user of the Land and damage and injury thereto.

   (ii) So far as is reasonably practicable and with all practicable speed to make good all damage or injury to the Land caused by the exercise by UÉ of the rights easements and licences hereby granted.

(iii) So far as is reasonably practicable and so long as the Pipeline is used for or in connection with UÉ's Water Services functions to keep the Pipeline in proper repair and condition, and upon permanent abandonment of the Pipeline or any part thereof (notification whereof shall be given to the Grantor by UÉ):

(a) to render the Pipeline permanently safe and

(b) surrender back the rights easements and licences granted hereby to the Grantor.

(iv) To indemnify and keep indemnified the Grantor his servants, agents, licencees and invitees against all sums in respect of loss or damage, claims, demands, costs and expenses which the Grantor shall become legally liable to pay as compensation for accidental bodily injury or accidental loss of or damage to property where such injury or damage directly attributable to any default or negligence on the part of UÉ in the laying, construction, maintenance, repair, replacement, or removal of the Pipeline other than in consequence of the breach by the Grantor of any of the Grantor's covenants set out in Clause 3 below or in consequence of any malicious act or omission of the Grantor or any person for whom the Grantor is responsible in law.

(v) To pay all rates and taxes which may be imposed in respect of the Pipeline or the easements and licences hereby granted and any increased rates, taxes or insurance premiums which may be imposed on the Grantor in respect of adjoining land by virtue of the existence of the Pipeline.

(vi) If any interference with or disturbance of the functioning of any drain or drainage system in or under the Land can be shown by the Grantor to have been caused by the laying of any main Pipe or thing in the exercise of the rights easements and licences hereby granted, then with all practicable speed so far as is reasonably practicable to make good any damage or injury thereby occasioned and to make full compensation to the Grantor in respect thereof and in so far as the same shall not have been made good as aforesaid.

(vii) To compensate the Grantor his servants, agents, licencees and invitees in respect of any bodily injury or loss or damage to material property suffered by him or them where the same is caused by or arises from the Pipeline, other than in consequence of the breach by the Grantor of any of the Grantor's covenants set out in Clause 3 below or in consequence of any malicious or criminally reckless act or omission of the Grantor or any person for whom the Grantor is responsible in law and except in so far as the same has been made good by UÉ without loss to the Grantor.

PROVIDED that the Grantor shall (i) as soon as reasonably practicable give notice in writing to UÉ of any claim or action brought or threatened against the Grantor and (ii) not admit liability in respect of, nor settle or compromise, such action or claim as is referred to in sub-clause (iv) of this clause without the prior written consent of UÉ. UÉ may at its own expenses defend any such action or claim in the name of the Grantor.

3. The Grantor (to the intent so as to bind the Land and every part thereof into

whatsoever hands the same may come and with the intent to benefit and protect the rights easements and licences hereby granted) hereby covenants with UÉ as follows:-

(i) Not to do or cause deliberately or recklessly permit or suffer to be done on the Land anything calculated or likely to cause damage or injury to the Pipeline or interfere with the exercise by UÉ of the rights hereby granted, including the planting of trees or shrubs that would interfere with the Pipeline or its operation.

(ii) Not without the prior consent in writing of UÉ (such consent not to be unreasonably withheld) to excavate under or alter the level of the ground over or under the Strip or to make or cause or recklessly permit or suffer to be made any material alteration to or any deposit of anything upon any part of the Strip so as to interfere with or obstruct the access thereto or to the Pipeline by UÉ or so as to lessen or in any way interfere with the support afforded to the Pipeline by the surrounding soil including minerals or so as materially to reduce the depth of soil above or under the Pipeline.

(iii) Not to erect or install or cause or recklessly permit or suffer to be erected or installed any building, structure or other erection or any plant or permanent apparatus of any kind whatsoever or permanent apparatus or the carrying out of any works on, over or beneath the surface of the Strip or the making of any material change in the use of the Strip which would be likely to cause damage or injury to the Pipeline.

(iv) To observe the covenants and stipulations set out in the Third Schedule hereto.

PROVIDED that nothing in this clause shall prevent the Grantor from installing any necessary service pipes drains wires or cables under the supervision and with the consent (which consent shall not be unreasonably withheld and for which no charge shall be made) of UÉ or its agents or the carrying on of normal agricultural operations or acts of good husbandry including fencing hedging and ditching not causing any such interference obstruction or material reduction of the depth of soil above or under the Pipeline.

4.1 Any dispute arising under, or in connection with or arising out of Clauses 2 or 3 of this Deed of Easement shall, in default of agreement between the Parties, be referred by written notice from either Party to the decision of a single arbitrator to be agreed upon between the Parties hereto, or failing agreement to be appointed on the application of either Party by the President of the Law Society of Ireland. Any such reference to arbitration will be a submission to arbitration within the meaning of the Arbitration Act, 2010, or any Act amending or repealing same and shall be an arbitration conducted in Ireland and in the English language and shall be governed by the Arbitration Act, 2010 subject to the provisions of this Clause 4.

4.2 The arbitrator shall on the request of either Party hereto, at the sole cost of the requesting Party, provide a reasoned award.

5. The Grantor hereby acknowledges the right of UÉ to production of the Deeds and Documents set out in the Second Schedule hereto (possession whereof is retained by the Grantor) and to delivery of copies thereof and hereby undertakes for the safe custody thereof.

6. All communications relative to this Deed of Easement shall be addressed to the Grantor at his address given at the commencement of this Deed of Easement and to UÉ at Colvill House, 24-26 Talbot Street, Dublin 1, or such other address as UÉ may at any time or from time to time notify to the Grantor.

7. The Grantor as registered owner or as the person entitled to be registered as owner hereby assents to the registration of the aforesaid rights easements licenses and covenants as burdens on the property specified in the First Schedule hereto.

8. If anyone (hereinafter referred to as "the spouse") of joint Grantors shall have no proprietary interest legal or equitable in or claim to the land specified in the First Schedule hereto and shall have been joined solely for the purpose of satisfying the provisions of the Family Home Protection Act 1976, these presents shall be deemed to have been executed by the spouse solely for the purpose of signifying his or her consent to the within Deed and to payment of the consideration by UÉ to the other spouse and the spouse shall not by reason only of having executed these presents be liable for the performance by the other spouse of his or her obligations hereunder.

FIRST SCHEDULE
(Description and Tenure of the Grantors Land)

SECOND SCHEDULE
(Documents retained by Grantor)

THIRD SCHEDULE
(Grantor's Covenant Pursuant to
Clause 3 (iv))

1. Not to plant within the Strip any poplar trees, willow trees, ash trees, beech trees, conifers, horse chestnut trees, lime trees, maple trees, sycamore trees, apple trees or pear trees or any other trees of a similar size (whether deciduous or evergreen).

2. Not to allow any shrubs or hedges planted on the Strip to grow to a height exceeding 4 metres.

In this Schedule any stipulation of a negative nature whereby the Grantor is restrained from doing any act or thing shall be read and construed as a covenant on the part of the Grantor not to do or permit or suffer such thing to be done.

IN WITNESS whereof the Grantor and Uisce Éireann have executed and delivered this Deed the day and year first herein written.

GIVEN UNDER the
COMMON SEAL of the **GRANTOR**
and **DELIVERED** as a **DEED**[3]

_____
Director

_____
Director/Secretary

[3] Execution block to be confirmed/amended, as required, depending on status of Grantor (company, individual, etc.). Please liaise with Uisce Éireann, as required.

GIVEN UNDER the
COMMON SEAL of **UISCE ÉIREANN**
and **DELIVERED** as a **DEED**

_____
Director

_____
Director/Secretary

Appendix 7

Part B

DEED OF EASEMENT & TRANSFER
IN RESPECT OF
ARTERIAL PIPES

[ ][4]

And

UISCE ÉIREANN

[ ][5]

Golf Links Road, Newtown, Monaleen, Limerick

CDS2300489201

[2] Developer Name
[3] Project/Development Name/Address (i.e. location of Arterial Pipes)
[4] Insert Developer/Grantor name in CAPITALS and **bold**.

DEED OF EASEMENT & TRANSFER IN RESPECT OF ARTERIAL PIPES

THIS DEED is made the day of Two Thousand and Eighteen

BETWEEN [ ][6] (Company No. [ ][7]) whose registered office it at[ ][8] (hereinafter called the "**Grantor**" which expression where the context so admits or requires shall include all Executors, Administrators, Successors and Assigns) of the One Part and **UISCE ÉIREANN**, a designated activity company, limited by shares, incorporated in Ireland (Company No. 530363), whose registered office is at Colvill House, 24-26 Talbot Street, Dublin 1 (hereinafter called " **UÉ** " which expression where the context so admits or requires shall include its successors and assigns) of the Other Part.

WHEREAS

A. In this Deed and in the several Schedules unless the context otherwise requires the following words and expressions shall have the following meanings:

(i) "Accessories" has the same meaning as in the Acts.

(ii) "The Acts" means the Water Services Acts 2007 to 2014.

(iii) "Water Services" has the same meaning as in the Acts.

(iv) "The Land" means the land of the Grantor specified in the First Schedule – Part A hereto.

(v) "The Pipeline" means the arterial/direct water and/or wastewater elements of the Grantor's water and/or wastewater infrastructure which is in place between the Water and Wastewater Service Infrastructure and the UÉ network(s) which have been laid or are to be laid in the Strip and includes part of any such arterial/direct water and/or wastewater elements of the Grantor's water and/or wastewater infrastructure or any apparatus equipment or other thing (or part thereof) which is ancillary to any of them whether moveable or permanent or which assists in the operation, inspection placement maintenance repair replacement rendering unusable or servicing of any arterial/direct water and/or wastewater elements of the Grantor's water and/or wastewater infrastructure or any of them and which are required for Water Services (as shown in the drawing appended hereto at First Schedule – Part B).

(vi) "The Strip" means the strip of land more particularly delineated and described on the plan hereto annexed (Schedule – Part A) and thereon coloured yellow and forming part of the Land (in which the *"Arterial Pipes"* (as referred to in Appendix 3, Part 3 of the relevant *UÉ Connection Offer*) are laid).

---

[6] Insert Developer/Grantor name in CAPITALS and **bold**.
[7] Insert Company Number from www.cro.ie
[8] Insert registered office address from www.cro.ie

(vii) The "Water and Wastewater Service Infrastructure" means those water mains and sewers located or to be located within the development adjoining the Land and which are to be connected to the UÉ network(s) by way of the Pipeline.

(viii) Reference to any enactment (including the Acts) includes reference to any statutory modification thereof whether by way of amendment, addition, deletion or repeal and re-enactment with or without amendment.

(ix) The singular of any word in these definitions or elsewhere in this Deed includes the plural and the masculine gender includes the feminine and neuter genders and where two or more persons together constitute the Grantor the covenants by such a person shall be deemed to be joint and several covenants by both or everyone of such persons.

B. The Grantor is seized and possessed of the Land for the tenure mentioned in the First Schedule hereto.

C. UÉ is a designated activity company limited by shares and registered under the Companies Acts, 1963 to 2014, pursuant to Section 4 of the Water Services Act 2013 and is a water services Authority for the purposes of the Acts.

D. The Grantor has agreed with UÉ to grant to it for the purposes of its functions the rights easements and irrevocable licenses hereinafter set forth and upon treaty for such grant it was agreed that UÉ and the Grantor would give to the other of them the several covenants hereinafter contained on the part of each of them UÉ and the Grantor to the intent that the said covenants would be binding on their respective successors in title.

NOW THIS INDENTURE WITNESSETH as follows:-

1. In pursuance of the said Agreement and in consideration of the sum of one Euro (€1) paid by UÉ to the Grantor (the receipt whereof the Grantor doth hereby acknowledge) the Grantor as beneficial owner:

(i) HEREBY GRANTS unto UÉ ALL AND SINGULAR the full free and sufficient wayleaves rights easements licenses and liberties to lay, keep, construct use inspect maintain repair replace remove or render unusable the Pipeline or any other materials connected with or facilitating the exercise or performance by UÉ of any of its functions or powers in connection with Water Services together with the right to introduce and place all necessary apparatus ancillary thereto on over or beneath the surface of that part of the Land that consists of the Strip together with the full and free right and liberty of UÉ its officers and servants and all persons authorised by UÉ to pass and repass over the Strip at all times by day and by night times on foot and with or without vehicles equipment machinery and apparatus for any of the purposes aforesaid and for the purposes of any similar works of UÉ contiguous to the Pipeline or the Strip and the Grantor further Grants as beneficial owner to UÉ its officers and servants and all persons authorised by UÉ full right and liberty to pass and repass over the Land of the Grantor for the purpose of accessing the Strip for any of the purposes aforesaid TO HOLD the said rights easements and licenses unto UÉ in fee simple or for such lesser interest as the Grantor may have as appearing in the First Schedule hereto (subject to the provision for surrender as specified in Clause 2 (iii) hereof) as rights easements and licenses appurtenant to all and every or any lands of UÉ used for the provision of Water Services and appurtenant to the rights which UÉ have or will have over lands of other Landowners for the provision of Water Services; and

(ii) transfers to UÉ ownership of The Pipeline.

2. UÉ (to the intent so as to bind the rights easements and licenses hereby granted into whatsoever hands the same may come and with the intent to benefit and protect the Land and every part thereof) hereby covenants with the Grantor as follows:-

(i) In exercising the rights easements and licences hereby granted to take all reasonable precautions to avoid obstruction or interference with the user of the Land and damage and injury thereto.

(ii) So far as is reasonably practicable and with all practicable speed to make good all damage or injury to the Land caused by the exercise by UÉ of the rights easements and licences hereby granted.

(iii) So far as is reasonably practicable and so long as the Pipeline is used for or in connection with UÉ's Water Services functions to keep the Pipeline in proper repair and condition, and upon permanent abandonment of the Pipeline or any part thereof (notification whereof shall be given to the Grantor by UÉ):

(a) to render the Pipeline permanently safe and

(b) surrender back the rights easements and licences granted hereby to the Grantor.

(iv) To indemnify and keep indemnified the Grantor his servants, agents, licencees and invitees against all sums in respect of loss or damage, claims, demands, costs and expenses which the Grantor shall become legally liable to pay as compensation for accidental bodily injury or accidental loss of or damage to property where such injury or damage directly attributable to any default or negligence on the part of UÉ in the laying, construction, maintenance, repair, replacement, or removal of the Pipeline other than in consequence of the breach by the Grantor of any of the Grantor's covenants set out in Clause 3 below or in consequence of any malicious act or omission of the Grantor or any person for whom the Grantor is responsible in law.

(v) To pay all rates and taxes which may be imposed in respect of the Pipeline or the easements and licences hereby granted and any increased rates, taxes or insurance premiums which may be imposed on the Grantor in respect of adjoining land by virtue of the existence of the Pipeline.

(vi) If any interference with or disturbance of the functioning of any drain or drainage system in or under the Land can be shown by the Grantor to have been caused by the laying of any main pipe or thing in the exercise of the rights easements and licences hereby granted, then with all practicable speed so far as is reasonably practicable to make good any damage or injury thereby occasioned and to make full compensation to the Grantor in respect thereof and in so far as the same shall not have been made good as aforesaid.

(vii) To compensate the Grantor his servants, agents, licencees and invitees in respect of any bodily injury or loss or damage to material property suffered by him or them where the same is caused by or arises from the Pipeline, other than in consequence of the breach by the Grantor of any

of the Grantor's covenants set out in Clause 3 below or in consequence of any malicious or criminally reckless act or omission of the Grantor or any person for whom the Grantor is responsible in law and except in so far as the same has been made good by UÉ without loss to the Grantor.

PROVIDED that the Grantor shall (i) as soon as reasonably practicable give notice in writing to UÉ of any claim or action brought or threatened against the Grantor and (ii) not admit liability in respect of, nor settle or compromise, such action or claim as is referred to in sub-clause (iv) of this clause without the prior written consent of UÉ. UÉ may at its own expenses defend any such action or claim in the name of the Grantor.

3. The Grantor (to the intent so as to bind the Land and every part thereof into whatsoever hands the same may come and with the intent to benefit and protect the rights easements and licences hereby granted) hereby covenants with I UÉ W as follows:-

(i) Not to do or cause deliberately or recklessly permit or suffer to be done on the Land anything calculated or likely to cause damage or injury to the Pipeline or interfere with the exercise by UÉ of the rights hereby granted, including the planting of trees or shrubs that would interfere with the Pipeline or its operation.

(ii) Not without the prior consent in writing of UÉ (such consent not to be unreasonably withheld) to excavate under or alter the level of the ground over or under the Strip or to make or cause or recklessly permit or suffer to be made any material alteration to or any deposit of anything upon any part of the Strip so as to interfere with or obstruct the access thereto or to the Pipeline by UÉ or so as to lessen or in any way interfere with the support afforded to the Pipeline by the surrounding soil including minerals or so as materially to reduce the depth of soil above or under the Pipeline.

(iii) Not to erect or install or cause or recklessly permit or suffer to be erected or installed any building, structure or other erection or any plant or permanent apparatus of any kind whatsoever or permanent apparatus or the carrying out of any works on, over or beneath the surface of the Strip or the making of any material change in the use of the Strip which would be likely to cause damage or injury to the Pipeline.

(iv) To observe the covenants and stipulations set out in the Third Schedule hereto.

PROVIDED that nothing in this clause shall prevent the Grantor from installing any necessary service pipes drains wires or cables under the supervision and with the consent (which consent shall not be unreasonably withheld and for which no charge shall be made) of UÉ or its agents or the carrying on of normal agricultural operations or acts of good husbandry including fencing hedging and ditching not causing any such interference obstruction or material reduction of the depth of soil above or under the Pipeline.

4.1 Any dispute arising under, or in connection with or arising out of Clauses 2 or 3 of this Deed of Easement shall, in default of agreement between the parties, be referred by written notice from either party to the decision of a single arbitrator to be agreed upon between the parties hereto, or failing agreement to be appointed on the application of either party by the President of the Law Society of Ireland. Any such reference to arbitration will be a submission to arbitration within the meaning of the Arbitration Act, 2010, or any Act amending or repealing same and shall be an arbitration conducted in Ireland and in the English language and

shall be governed by the Arbitration Act, 2010 subject to the provisions of this Clause 4.

4.2 The arbitrator shall on the request of either party hereto, at the sole cost of the requesting party, provide a reasoned award.

5. The Grantor hereby acknowledges the right of UÉ to production of the Deeds and Documents set out in the Second Schedule hereto (possession whereof is retained by the Grantor) and to delivery of copies thereof and hereby undertakes for the safe custody thereof.

6. All communications relative to this Deed of Easement shall be addressed to the Grantor at his address given at the commencement of this Deed of Easement and to UÉ at Colvill House, 24-26 Talbot Street, Dublin 1, or such other address as UÉ may at any time or from time to time notify to the Grantor.

7. The Grantor as registered owner or as the person entitled to be registered as owner hereby assents to the registration of the aforesaid rights easements licenses and covenants as burdens on the property specified in the First Schedule hereto.

8. If anyone (hereinafter referred to as "the spouse") of joint Grantors shall have no proprietary interest legal or equitable in or claim to the land specified in the First Schedule hereto and shall have been joined solely for the purpose of satisfying the provisions of the Family Home Protection Act 1976, these presents shall be deemed to have been executed by the spouse solely for the purpose of signifying his or her consent to the within Deed and to payment of the consideration by UÉ to the other spouse and the spouse shall not by reason only of having executed these presents be liable for the performance by the other spouse of his or her obligations hereunder.

FIRST SCHEDULE (Part A)
(Description and Tenure of the Grantors Land)

FIRST SCHEDULE (Part B)
(Description of Pipeline)

SECOND SCHEDULE
(Documents retained by Grantor)

THIRD SCHEDULE
(Grantor's Covenant Pursuant to Clause 3 (iv))

1. Not to plant within the Strip any poplar trees, willow trees, ash trees, beech trees, conifers, horse chestnut trees, lime trees, maple trees, sycamore trees, apple trees or pear trees or any other trees of a similar size (whether deciduous or evergreen).

2. Not to allow any shrubs or hedges planted on the Strip to grow to a height exceeding 4 metres.

In this Schedule any stipulation of a negative nature whereby the Grantor is restrained from doing any act or thing shall be read and construed as a covenant on the part of the Grantor not to do or permit or suffer such thing to be done.

IN WITNESS whereof the Grantor and Uisce Éireann have executed and delivered this Deed the day and year first herein written.

GIVEN UNDER the
COMMON SEAL of the **GRANTOR**
and **DELIVERED** as a **DEED**[9]

_____
Director

_____
Director/Secretary

[9] Execution block to be confirmed/amended, as required, depending on status of Grantor (company, individual, etc.). Please liaise with Uisce Éireann, as required. .

GIVEN UNDER the
COMMON SEAL of **UISCE ÉIREANN**
and **DELIVERED** as a **DEED**

_____
Director

_____
Director/Secretary

Appendix 8 - Security

Uisce Éireann Deposit Agreement

Complete and return two copies of the signed Deposit Agreement to Uisce Éireann.

Please note; if you wish to use another form of agreement please contact Uisce Éireann.

DEPOSIT AGREEMENT

UISCE ÉIREANN

POLICY NO. IW-FIN-POL-001

FINANCIAL SECURITY PACKAGE

DEPOSIT AGREEMENT

CDS2300489201

PRO FORMA DEPOSIT AGREEMENT

THIS DEPOSIT AGREEMENT is made on 20[ ]

BETWEEN

(1) **[ ]**, a company incorporated under the laws of Ireland with companies office number [ ] and having its registered office at [ ] (the "**Depositor**"); and

(2) **UISCE ÉIREANN** having its registered office at Colvill House, 24 – 26 Talbot Street, Dublin 1, Ireland ("**Uisce Éireann**").

RECITALS

(B) Uisce Éireann and the Depositor [have entered]/[wish to enter] into the Agreement[s].

(C) In compliance with Uisce Éireann's Financial Security Policy, the Depositor has agreed to provide cash to Uisce Éireann as security for the Depositor's obligations under the Agreement(s) upon the terms and conditions of this Deposit Agreement.

IT IS AGREED as follows:

1. **DEFINITIONS AND INTERPRETATION**

Definitions

1.1 In this Deposit Agreement, unless the context otherwise requires, the following expressions shall have the following meanings:

"**Account**" means the account number IE29 AIBK 9333 8464 3085 94 held in the name of Uisce Éireann with the Account Bank AIB, Account Holder, Uisce Éireann BIC/SWIFT: AIBKIE2D (as renumbered or redesignated from time to time), as notified by Uisce Éireann to the Depositor and into which the Depositor will pay or transfer (or procure the payment or transfer of) the Deposit Monies;

"**Account Balance**" means the balance for the time being and from time to time standing to the credit of the Account together with all interest (negative or positive) accrued on, or debited from, that balance;

"**Account Bank**" means Allied Irish Banks or such replacement account bank as Uisce Éireann may in its absolute discretion nominate from time to time;

"**Agreement[s]**" means the Self-Lay Connection Agreement (and ancillary agreements and documents) entered into between Uisce Éireann and the Depositor;

"**Deposit Monies**" means the initial cash sum in the amount of the Self-Lay Surety (as set out in the Agreement[s] to be paid or transferred by the Depositor into the Account pursuant to Clause 3.1 together with all other cash sums paid or transferred into the Account pursuant to Clause 3.2;

"**Enforcement Event**" means a failure by the Depositor to make payment on a due date under or in connection with the Agreement[s];

"**Financial Security Policy**" means the Policy IW-FIN-POL-001, Financial Security Policy published by Uisce Éireann from time to time and approved by the Commission for Regulation of Utilities; and

"**Secured Obligations**" has the meaning given to it in Clause 2.

Interpretation

1.2

(a) Unless a contrary indication appears, any reference in this Deposit Agreement to:

(i) "**Uisce Éireann**", the "**Depositor**" or any other person shall be construed so as to include its successors in title, permitted assigns and permitted transferees;

(ii) an "**amendment**" includes a supplement, novation, restatement or re-enactment and "amended" will be construed accordingly;

(iii) a "**Clause**" shall be construed as a reference to a clause of this Deposit Agreement;

(iv) the "**Agreement[s]**", this "**Deposit Agreement**" or any other agreement or instrument is a reference to the same as amended, restated, supplemented and/or novated from time to time;

(v) "**encumbrance**" includes a mortgage, charge, pledge, lien, hypothecation, assignment or deposit by way of security or any other encumbrance or security interest of any kind (other than a lien arising in the ordinary course of business by operation of law) or any other type or preferential arrangement having a similar effect;

(vi) a "**person**" includes any person, firm, company, body corporate, corporation, government, state or agency of a state or any association, trust or partnership (whether or not having separate legal personality) of two or more of the foregoing; and

(vii) a time of day is a reference to Irish time;

(b) Clause headings are for ease of reference only and shall not affect the construction;

(c) words denoting the singular number only shall include the plural number also and vice versa; and

(d) words denoting one gender only shall include the other gender.

2. COVENANT TO PAY

The Depositor hereby irrevocably covenants to pay and discharge, as and when due and payable, all amounts and liabilities which are now or hereafter become due, owing or payable by it to Uisce Éireann, whether actually or contingently, as principal or as surety, solely or jointly and/or severally with others, whether in respect of principal, interest, fees, expenses or otherwise, under or in connection with

the Agreement[s] (all such amounts and liabilities together the "**Secured Obligations**").

3. **DEPOSIT**

3.1 The Depositor hereby undertakes, contemporaneously with entering into the Agreement[s], to pay or transfer the Deposit Monies into the Account.

3.2 The Depositor further undertakes that, so long as any Secured Obligation remains outstanding or to be discharged, it shall from time to time and as required under the Financial Security Policy pay or transfer further cash sums into the Account. Without prejudice to the Depositor's obligation to make such further payments or transfers, Uisce Éireann may notify the Depositor in writing of further sums required to be paid into the Account and the Depositor agrees and undertakes to make payment or have transferred the relevant sum(s) to the Account within 7 days of receipt by it of any such notice.

3.3 The Depositor hereby covenants that the aggregate of Deposit Monies paid or transferred by it into the Account shall at all times be equal to or greater than the aggregate of all present and future Secured Obligations.

3.4 All payments by the Depositor under this Clause 3 shall be:

(a) free and clear of any withholding or deduction;

(b) for value on the date of payment;

(c) made without set-off or counterclaim; and

(d) made by way of electronic funds transfer to the Account.

3.5 The Depositor shall promptly provide Uisce Éireann with evidence of its irrevocable payment of all Deposit Monies paid or transferred by it into the Account.

3.6 Each payment or transfer by the Depositor under this Clause 3 shall constitute an irrevocable payment by the Depositor to Uisce Éireann for application by it in accordance with this Deposit Agreement.

3.7 The Depositor acknowledges and agrees that (a) all Deposit Monies paid or transferred into the Account will upon payment constitute monies belonging absolutely to Uisce Éireann and will be co-mingled with other deposit monies paid by other counterparties of Uisce Éireann under or in connection with similar arrangements with Uisce Éireann, and (b) the Account Bank will be entitled to and will charge or levy bank costs, charges, expenses, etc. (as referred to in Clause 4.3) relating to the Account by deducting the same from the Account Balance.

3.8 Uisce Éireann shall require the Account Bank to provide it with regular statements setting out the Account Balance, details of all payments made into and out of the Account (including, but not limited to, payments by or to the Depositor) and all bank costs, charges, etc. (as referred to in Clause 4.3) deducted from or charged to the Account from time to time. Uisce Éireann shall be entitled to keep confidential all such statements and all other details and information relating to the Account and the Account Balance.

3.9 In any litigation or arbitration proceedings arising out of or in connection with this Deposit Agreement and/or the Agreement[s], the entries made in or in respect of the Account maintained by the Account Bank are conclusive evidence of the matters to which they relate.

3.10 Any certification or determination by Uisce Éireann of an amount or rate under or in connection with the Account, the Account Balance, the Deposit Monies, this Deposit Agreement and/or the Agreement[s] is, in the absence of manifest error, conclusive evidence of the matters to

which it relates.

4. APPLICATION OF DEPOSIT MONIES

4.1 Subject to Clauses 4.2, 4.3 and 10 (Set-off), Uisce Éireann shall, and may only, apply the Deposit Monies in and towards payment and satisfaction of the Secured Obligations as and when they fall due. Any such application of the Deposit Monies, whether in whole or in part, shall operate to discharge, pro tanto, the relevant Secured Obligations.

4.2 If, at any time, in its absolute discretion, it is satisfied that the Deposit Monies paid by the Depositor into the Account exceed the then present and future Secured Obligations, then as soon as practicable after receipt of a written request from the Depositor Uisce Éireann shall pay or procure the payment of an amount equal to the excess to the Depositor from the Account or from such other sources as it may decide. The Depositor acknowledges and agrees that any such payment shall be without prejudice to its own continuing obligations under Clause 3.2.

4.3 The Depositor acknowledges and agrees that the Account and the Account Balance shall be operated in accordance with the usual terms and conditions operated by the Account Bank from time to time and that Uisce Éireann shall have no liability whatsoever in respect of any reduction in value or application of the Account Balance and the Deposit Monies as a result of and/or in or towards bank costs, charges, expenses, fees, commissions, set-off or counterclaim by the Account Bank in any circumstance whatsoever save where the same results from Uisce Éireann's negligence or wilful misconduct.

5. UISCE ÉIREANN COVENANTS

Uisce Éireann shall:

(a) operate the Account in good faith and in a proper commercial and business-like manner in accordance with the Financial Security Policy unless and until an Enforcement Event occurs; and

(b) use its reasonable endeavours to procure a market related rate of interest applicable to the Account Balance from time to time.

6. DEPOSITOR ACKNOWLEDGEMENTS AND COVENANTS

6.1 The Depositor acknowledges, agrees and undertakes that it will not, and will not be entitled to:

(a) seek, or assert any right to seek, payment or release of any part of the Account Balance to it or support anyone else seeking to do any of the same; or

(b) claim or assert any right, title, interest and/or benefit in or to the Account and/or the Account Balance (or any part thereof) or support anyone else seeking to do so; or

(c) do, or cause or permit to be done, anything which may in any way depreciate, jeopardise or otherwise prejudice the Account, the Account Balance or Uisce Éireann's right and title thereto.

6.2 The Depositor acknowledges and agrees that (a) its right to payment under Clause 4.2 is a separate stand-alone right against Uisce Éireann itself and not in respect of the Account and/or the Account Balance, and (b) it has no right, title, interest and/or benefit in or to the Account and/or the Account Balance.

7. SECURITY COVER

7.1 This Deposit Agreement and the payments and transfers made by the Depositor pursuant to Clause 3 (*Deposit*) is made to satisfy the obligation(s) of the Depositor under the Agreement[s]

to provide or procure Security Cover (as defined in the Financial Security Policy).

7.2 The Depositor shall have the right at any time, upon 30 days' prior written notice in writing to Uisce Éireann, to offer alternative or substitute collateral as Security Cover. Any such alternative collateral must be in form and substance satisfactory to Uisce Éireann (at its discretion but consistent with the provisions relating to Security Cover as set out in the Financial Security Policy).

8. **REPRESENTATIONS**

8.1 The Depositor hereby represents and warrants to Uisce Éireann that:

(a) it is a company duly incorporated and existing under the laws of Ireland[10];

(b) it has full power to enter into, deliver and perform its obligations under this Deposit Agreement;

(c) all necessary corporate, shareholder and other action needed to permit it to execute and deliver this Deposit Agreement, to perform its obligations hereunder has been taken;

(d) the obligations on its part are legal, valid, binding and enforceable;

(e) all authorisations, consents, registrations and notifications which must be obtained in connection with its execution and performance of this Deposit Agreement have been obtained or made and are in full force and effect;

(f) its execution of, compliance with its obligations under this Deposit Agreement do not and will not conflict with:

(i) its constitutional documents; or

(ii) any law or regulation binding on it;

(g) immediately prior to payment thereof into the Account, it is the beneficial owner, free and clear of any encumbrance, of the Deposit Monies;

(h) it is not required to make any deduction or withholding from any payment into the Account;

(i) the choice of Irish law as the governing law of this Deposit Agreement will be recognised and enforced in its jurisdiction of incorporation; and

(j) any judgment obtained in Ireland in relation to this Deposit Agreement will be recognised and enforced in its jurisdiction of incorporation.

8.2 The representations and warranties set out in Clause 8.1 shall be deemed to be made by the Depositor by reference to the facts and circumstances then existing on the date of each further payment or transfer pursuant to Clause 3.2.

9. **FURTHER ASSURANCE**

Each party hereto undertakes, from time to time and at all times to execute and do all such deeds, assurances, agreements, instruments, acts and things as the other may

[10] In the event that the any of the Representations at Clause 8.1 above cannot be made, the Depositor should contact Uisce Éireann immediately to discuss.

reasonably require in furtherance of the intent and purpose of this Deposit Agreement.

10. SET-OFF AND RIGHT OF APPROPRIATION

Without limiting any other right of set-off or of combining accounts or any similar right to which Uisce Éireann may be entitled (including rights under the Agreement[s] or any other contract between Uisce Éireann and the Depositor), Uisce Éireann shall be entitled at any time following an Enforcement Event and without notice to the Depositor to:

(a) set-off all or any part of the Secured Obligations (whether or not then due and payable by the Depositor) against the obligations and liabilities of Uisce Éireann under or in respect of the Agreement[s]; and/or

(b) apply or appropriate such proportion of the Account Balance as represents the Deposit Monies in or towards the payment or discharge of the Secured Obligations.

11. RELEASE

3.1. Uisce Éireann shall pay or procure the payment to the Depositor of an amount equal to the balance of the Deposit Monies (following their application in accordance with Clause 4 and after deduction of any actual or contingent tax loss, cost, charge or liability imposed, arising, levied or assessed thereon or in respect thereof) together with a sum representing a good faith and fair apportionment of interest applicable to the Deposit Monies (by reference to the time(s) and amounts paid by the Depositor into the Account) upon receipt of the written request of the Depositor:

(a) once the Secured Obligations have been indefeasibly discharged in full and provided that the Depositor has no further obligations to Uisce Éireann under or in respect of the Agreement[s]; and

(b) subject to no Enforcement Event subsisting at such time, upon receipt by it of alternative or substitute collateral as Security Cover (as defined in the Financial Security Policy) in form and substance satisfactory to Uisce Éireann together with a legal opinion from Uisce Éireann's legal counsel confirming that the provision of such alternative or substitute collateral and the payment of such amount to the Depositor (or to its order) will not expose Uisce Éireann to the risk of the alternative or substitute collateral being avoided, set aside or reduced as a result of insolvency or any similar event.

3.2 The Depositor acknowledges and agrees that its right to payment under Clause 11.1 is a separate stand-alone right against Uisce Éireann itself and not in respect of the Account and/or the Account Balance.

12 TAX INDEMNITY

If Uisce Éireann is required to make any payment of or on account of tax on or in relation to this Deposit Agreement, the Account, the Account Balance and/or the Deposit Monies or if any liability in respect of any of the same is imposed, levied or assessed against Uisce Éireann, the Depositor shall, upon demand by Uisce Éireann, indemnify Uisce Éireann if it suffers a loss, liability or cost (directly or indirectly) as a result against such payment or liability. Uisce Éireann shall be entitled to apply

the Account Balance to pay and discharge any such tax or liability at any time without notice to the Depositor.

13 NOTICES AND COMMUNICATION

Any communication or notification given or made by a party under this Deposit Agreement shall be in accordance with the Financial Security Policy.

14 ASSIGNMENT

14.1 The Depositor may not assign, transfer, declare trusts over or otherwise deal with any of its rights or obligations under this Deposit Agreement without Uisce Éireann's prior written consent.

14.2 Uisce Éireann may at any time assign, transfer and/or declare trusts over its rights and obligations under this Deposit Agreement without the consent of the Depositor.

14.3 This Deposit Agreement shall be binding upon and inure to the benefit of the Depositor and Uisce Éireann and their respective successors and permitted assigns.

15 MISCELLANEOUS

Rights cumulative, no waiver

15.1 Failure by Uisce Éireann to exercise any right, or delay in doing so, will not operate as a waiver of that right; and a failure or delay in exercising, or a single or partial exercise of any right, power, privilege or remedy does not preclude any exercise of further exercise of that (or any other) right, powers and remedies provided by law.

Certificate conclusive

15.2 In any action, proceedings or claim relating to this Deposit Agreement, a certificate as to any amount due to Uisce Éireann or any Secured Obligation amount(s) signed by an officer of Uisce Éireann shall, except in the case of manifest error, be conclusive and binding on the Depositor.

Partial invalidity

15.3 If, at any time, any provision of this Deposit Agreement is or becomes illegal, invalid or unenforceable in any respect under the law of any jurisdiction, neither the legality, validity or enforceability of the remaining provisions nor the legality, validity or enforceability of such provision under the law of any other jurisdiction shall in any way be affected or impaired.

16 GOVERNING LAW

This Deposit Agreement is governed by, and shall be construed in accordance with, Irish law.

17 ENFORCEMENT

Jurisdiction of Irish courts

17.1 The courts of Ireland have exclusive jurisdiction to settle any dispute arising out of or in connection with this Deposit Agreement (including a dispute regarding the existence, validity

or termination of this Deposit Agreement) (a "Dispute"). The Depositor agrees that the courts of Ireland are the most appropriate and convenient courts to settle Disputes and accordingly it will not argue to the contrary.

18 **COUNTERPARTS**

This Deposit Agreement may be executed in any number of counterparts, and this has the same effect as if the signatures on the counterparts were on a single copy of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Deposit Agreement to be duly executed as a deed and delivered on the date first set forth above.

DEPOSIT AGREEMENT - EXECUTION PAGE

GIVEN under the **COMMON SEAL**
of [***Depositor***]
and **DELIVERED** as a **DEED**

_____	_____
Director	Director/Secretary
_____	_____
Print name	Print name

or

Executed as a Deed

By: _____

Witnessed by: _____
Signature

_____
Print name

Address:

Occupation:

Date:

GIVEN under the **COMMON SEAL**
of **UISCE ÉIREANN**
and **DELIVERED** as a **DEED**

_____	_____
Director	Director/Secretary
_____	_____
Print name	Print name

Appendix 9

Quality Assurance Regime

- Quality Assurance (QA) Design Requirements Manual
  IW-CDS-5010-01 (Revision 3- August 2020)

- Quality Assurance (QA) Field Inspection Requirements Manual
  IW-CDS-5010-02 (Revision 3 – August 2020)

Copies of these documents are included in USB.

Appendix 10

Register of Premises Serviced

House No or Name (related to Appendix 5 Layout):	Date of Connection (estimated):	Date that Meter fit is Required (estimated):

Note: This register to be completed and provided to Uisce Éireann at the pre-construction site meeting. Subsequent updates of the register to be also provided to Uisce Éireann at the intervals outlined in General Condition 18.

Appendix C – Foul Sewer Calculations

TITLE	Job Reference
Proposed Development at Old Orchard, Monaleen, Limerick, County Limerick	25066
SUBJECT	**Calc. Sheet No.**
Wastewater Discharge Calculations - Post Development	1

DRAWING NUMBER	Calculations by	Checked by	Date
25066-OSL-11-DR-C-1130	BJM	DB	23/10/2025

Foul Drainage

Housing Units	116	no.
Dry Weather Flow (DWF)[1]	150	litres/person/day
Average Occupancy Ratio[2]	2.7	person/unit
Total Site Occupancy (i.e. population)	313	person
Total Daily Wastewater Discharge + 10% Unit Consumption Allowance[3]	51,678	l/day
Peak Flow Factor[4]	6.0	

Post Development Average Discharge	**0.60**	l/s
Post Development Peak Discharge[5]	**3.59**	l/s

Foul Sewer Organic Loading

	Average Concentration[6]	Maximum Concentration[7]
BOD (mg/l)	168	422
SS (mg/l)	163	435
N (mg/l)	40.6	78.6
P (mg/l)	7.1	15.5
COD (mg/l)	389	1000

Notes:

1. Dry Weather Flow (DWF) is 150 litres/person/day from the Irish Water Code of Practice for Wastewater Infrastructure.
2. Occupancy ratio of 2.7 persons per dwelling from Irish Water Code of Practice for Wastewater Infrastructure.
3. The unit consumption allowance is 10% in accordance with the Irish Water Code of Practice for Wastewater Infrastructure.
4. The Peak Flow factor is taken as 6 times Dry Weather Flow (0 to 750 population), 4.5 DWF for 751 to 1000 and 3.0 DWF for 1001 to 5000
5. The peak discharge is equal to the Total Wastewater Discharge multiplied by the peak flow factor, expressed in litres/second.
6. The average concentrations of wastewater parameters taken from EPA "Wastewater Treatment Manuals, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels".
7. Assumed Maximum concentration is equal to the average concentration plus 2 times the standard deviation (for the 95%ile) taken from EPA "Wastewater Treatment Manuals, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels".

TITLE		**Job Reference**	
Proposed Development at Old Orchard, Monaleen, Limerick, County Limerick		24041	
SUBJECT		**Calc. Sheet No.**	
Wastewater Discharge Calculations - Post Development Creche		2	
DRAWING NUMBER	**Calculations by**	**Checked by**	**Date**
25066-OSL-11-DR-C-1130	BJM	DB	23/10/2025

Foul Drainage

Day Staff [7]	20	no.
Dry Weather Flow (DWF)[1]	50	litres/person/day
Children	102	no.
Dry Weather Flow (DWF)[1]	50	litres/person/day
Total Daily Wastewater Discharge + 10% Unit Consumption Allowance[2]	6,732	l/day
Peak Flow Factor[3]	6.0	
Post Development Average Discharge	**0.08**	l/s
Post Development Peak Discharge[4]	**0.47**	l/s

Foul Sewer Organic Loading

	Average Concentration[5]	Maximum Concentration[6]
BOD (mg/l)	168	422
SS (mg/l)	163	435
N (mg/l)	40.6	78.6
P (mg/l)	7.1	15.5
COD (mg/l)	389	1000

Notes:

1. Dry Weather Flow (DWF) is 50 litres/person/day for Staff and Patrons taken from Irish Water "Code of Practice for Wasterwater Infrastructure".
2. The unit consumption allowance is 10% in accordance with the Irish Water "Code of Practice for Wastewater Infrastructure".
3. The Peak Flow factor is taken from Irish Water "Code of Practice for Wasterwater Infrastructure" Appendix C Section 1.2.7
4. The peak discharge is equal to the Total Wastewater Discharge multiplied by the peak flow factor, expressed in litres/second.
5. The average concentrations of wastewater parameters taken from EPA "Wastewater Treatment Manuals, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels".
6. Assumed Maximum concentration is equal to the average concentration plus 2 times the standard deviation (for the 95%ile) taken from EPA "Wastewater Treatment Manuals, Treatment Systems for Small Communities, Business, Leisure Centres and Hotels".
7. Ratio of Adults to Children 1:5, Schedule 6 of the Child Care Act 1991 (Early Years Service) Regulations 2016.

Appendix D – Permissible Site Discharge Calculations

PROJECT			JOB REF.
Proposed Development at Old Orchard, Monaleen, Limerick, Co. Limerick			25066
SUBJECT			**Calc. Sheet No.**
Surface Water Calculations - Permissible Site Discharge			1
Drawing ref.	**Calculations by**	**Checked by**	**Date**
25066-OSL-11-DR-C-1120	BJM	BJM	21/10/2025

OSL·BUTLER CONSULTING ENGINEERS

PERMISSIBLE SURFACE WATER DISCHARGE CALCULATIONS

Site Area

What is the overall catchment area? **3.567** Hectares (ha) Site is Less than 50 Hectares

Pre-Development Catchment Soil Characteristics

Are there different soil types present on the pre-developed site? No

Catchment	This refers to the entire site area	1	
Area		3.57	Hectares (ha)
Drainage Group		1	Class
Depth to Impermeable Layers		2	Class
Permeability Group above Impermeable Layers		3	Class
Slope [6]		1	Class
SOIL Type		2	From FSR Table
[1]SOIL Index		0.30	

SOIL	SOIL Value	SPR
1	0.15	0.10
2	0.30	0.30
3	0.40	0.37
4	0.45	0.47
5	0.50	0.53

Site SOIL Index Value **0.30**

Site SPR Value **0.30**

Post-Development Catchment Characteristics

Is the development divided into sub-catchments? No

What is the actual drainage area for catchment? 3.567 Hectares (ha)

Contributing Areas	Area (m^2)	Runoff Coeff.	Effective Area (m^2)
Hard surfaces inclusive of roofs, roads, footpaths and any other hardstanding areas	18171.453	1.00	18171.5
Green Areas or park land	17500.526	0.20	3500.1

Include Public Open Space in Effective Catchment Area? Yes

Effective Catchment Area **21671.6** m^2

Effective Catchment Runoff Coefficient **0.600**

Long-Term Storage

Is long-term Storage provided? No

Permissible Site Discharge

Refer to UkSuds Calc

What is the Standard Average Annual Rainfall (SAAR)? 1028.7 mm

Met Éireann Extreme Rainfall\SAAR 1991 – 2020
Co-ordinates (Irish Grid) Easting: 162100, Northing: 155871

Is the overall site area less than 50 hectares? Yes

[5]$QBAR_{Rural}$ calculated for 50 ha and linearly interpolated for area of site 10.20 Litres/sec

[7]Site Discharge = **7.13** Litres/sec = 2.00 l/s/ha

Notes and Formulae

1. SOIL index value calculated from Flood Studies Report - The Classification of Soils from Winter Rainfall Acceptance Rate (Table 4.5).
2. SPR value calculated from GDSDS - Table 6.7.
3. Rainfall depth for 100 year return period, 6 hour duration with additional 10% for climate change.
4. Long-term storage Vol_{xs} (m^3) = Rainfall.Area.10.[(PIMP/100)(0.8.α)+(1-PIMP/100)(β.SPR)-SPR]. (GDSDS Section 6.7.3).
   Where long-term storage cannot be provided on-site due to ground conditions, Total Permissible Outflow is to be kept to $QBAR_{(Rural)}$.
5. Total Permissible Outflow - $QBAR_{(Rural)}$ calculated in accordance with GDSDS - Regional Drainage Policies
   (Volume 2 - Chapter 6), i.e. $QBAR(m3/s)=0.00108x(Area)^{0.89}(SAAR)^{1.17}(SOIL)^{2.17}$ - For catchments greater than 50 hectares in area. Flow rates are linearly interpolated for areas samller than 50hectares.
6. Where Total Permissible Outflow is less than 2.0l/s and not achievable, use 2.0 l/s or closest value possible.
7. QBAR multiplied by growth factors of 0.85 for 1 year, 2.1 for 30 year and 2.6 for 100 year return period events, from GDSDS Figure C2.

PROJECT	JOB REF.
Proposed Development at Old Orchard, Monaleen, Limerick, Co. Limerick	25066
SUBJECT	**Calc. Sheet No.**
Surface Water Calculations - Soil Characteristics from FSR	2

Drawing ref.	Calculations by	Checked by	Date
25066-OSL-11-DR-C-1120	DV	BJM	21/10/2025

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Estimation of flood peaks from catchment characteristics

Property		Classes
A	Drainage group	1 Rarely waterlogged within 60 cm at any time (well and moderately well drained) 2 Commonly waterlogged within 60 cm during winter (imperfect and poor) 3 Commonly waterlogged within 60 cm during winter and summer (very poorly drained)
B	Depth to 'impermeable' layers	1 >80 cm 2 80–40 cm 3 <40 cm
C	Permeability group (above 'impermeable' layers or to 80 cm)	1 Rapid 2 Medium 3 Slow
D	Slope	1 0–2° 2 2–8° 3 >8°

Table 4.4 Classification of soil factors.

Having decided all four parameters, Table 4.5 was used to reach the index of 'winter rain acceptance'.

Table 4.5 The classification of soils by winter rain acceptance rate from soil survey data.

Drainage class Group	Depth to impermeable layer (cm)	Slope classes								
		0 - 2°			2 - 8°			>8°		
		Permeability rates above impermeable layers								
		Rapid (1)	Medium (2)	Slow (3)	Rapid (1)	Medium (2)	Slow (3)	Rapid (1)	Medium (2)	Slow (3)
1	>80	1			1			1	2	3
	40 - 80				2			3		4
	<40	—	—	—	—	—	—	—	—	—
2	>80	2		3		4		—		
	40 - 80									
	<40	3								
3	>80					5		—		
	40 - 80							—		
	<40									

Winter rain acceptance indices: 1, very high; 2, high; 3, moderate; 4, low; 5, very low. Upland peat and peaty soils are in Class 5. Urban areas are unclassified.

1. Soil index (SPR) value calculated from Flood Studies Report - The Classification of Soils from Winter Rainfall Acceptance Rate (Table 4.5).

Appendix E – Interception and Treatment Volumes Calculations

PROJECT			JOB REF.
Proposed Development at Old Orchard, Monaleen, Limerick, Co. Limerick			25066
SUBJECT			**Calc. Sheet No.**
Surface Water Calculations - Interception Volume			1
Drawing ref.	**Calculations by**	**Checked by**	**Date**
25066-OSL-11-DR-C-1120	DV	BJM	21/10/2025

OSL·BUTLER CONSULTING ENGINEERS

SURFACE WATER CALCULATIONS

Site Area

Total Site Area =	3.57	Hectares (ha)

Interception Volume (Post-Development)

Impermeable Area =	2.167	Hectares (ha)
Rainfall Depth =	5	mm
Interception Volume =	86.69	m^3

Notes

1. Interception Volume (m^3) = Impermeable Area (ha) x 5mm x 10 (GDSDS Section 6.3.1.2.1). For sites where a pond is applicable.

80% runoff from impermeable areas assumed.

PROJECT			JOB REF.
Proposed Development at Old Orchard, Monaleen, Limerick, Co. Limerick			25066
SUBJECT			**Calc. Sheet No.**
Surface Water Calculations - Treatment Volume			2
Drawing ref.	**Calculations by**	**Checked by**	**Date**
25066-OSL-11-DR-C-1120	DV	BJM	21/10/2025

SURFACE WATER CALCULATIONS

Site Area

Total Site Area =	3.57	Hectares (ha)

Treatment Volume (Post-Development)

Impermeable Area =	2.167	Hectares (ha)
Rainfall Depth =	15	mm
[1]Treatment Volume (Vt) =	260.06	m^3

Notes

1. Treatment Volume Vt (m^3) = Impermeable Area (ha) x 15mm x 10 (GDSDS Section 6.3.1.2.1). For sites where a pond is applicable.

80% runoff from impermeable areas assumed.

Appendix F – Water Demand Calculations

TITLE	Job Reference
Proposed Development at Old Orchard, Monaleen, Limerick, County Limerick	25066
SUBJECT	**Calc. Sheet No.**
Water Demand Calculations - Post Development	1

DRAWING NUMBER	Calculations by	Checked by	Date
25066-OSL-11-DR-C-1140	BJM	DB	23/10/2025

DEMAND

Housing Units	116	no.
Daily Demand per person	150	litres/person/day
Average Occupancy Ratio[1]	2.7	person/unit
Total Site Occupancy	313	people
Average Daily Demand	46,980	l/day
Average Day in Peak Week[2]	58,725	l/day
Normal Length of Day[3]	12	hours
Peak Factor[4]	5.0	

Post Development Peak Water Demand[5]	**3.40**	l/s
Post Development Average Water Demand	**0.54**	l/s
Normal Demand[6]	**1.09**	l/s

Notes:

1. Occupancy ratio of 2.7 persons per dwelling from Irish Water Code of Practice for Water Infrastructure.
2. Average Day in Peak Week is 1.25 times the average daily demand.
3. Assumed normal demand is the total daily demand during the normal length of day.
4. Peak Factor for pipe sizing from Irish Water Code of Practice for Water Infrastructure
5. Peak Factor multiplied by Average Day in Peak Week flow
6. Normal demand is the total daily demand during the normal length of day.
7. Fire flow is required at 25l/s as per B.S. 5306-1:1976.

TITLE	Job Reference
Proposed Development at Old Orchard, Monaleen, Limerick, County Limerick	25066
SUBJECT	**Calc. Sheet No.**
Water Demand Calculations - Post Development Creche	2

DRAWING NUMBER	Calculations by	Checked by	Date
25066-OSL-11-DR-C-1140	BJM	DB	23/10/2025

DEMAND

			Daily Demand per person[1]	
Day Staff [7]	20	people	50	litres/person/day
Children	102	people	50	litres/person/day

Average Daily Demand	6,120	l/day
Average Day in Peak Week[2]	7,650	l/day
Normal Length of Day[3]	12	hours
Peak Factor[4]	5.0	

Post Development Peak Water Demand[5]	**0.443**	l/s
Post Development Average Water Demand	**0.071**	l/s
Normal Demand[6]	**0.142**	l/s

Notes:

1. Daily Demand per person is 50 litres/person/day for Staff taken from Irish Water "Code of Practice for Wasterwater Infrastructure".
2. Average Day in Peak Week is 1.25 times the average daily demand.
3. Assumed normal demand is the total daily demand during the normal length of day.
4. Peak Factor of 2.1 assumed due to size of development.
5. Peak Factor multiplied by Average Day in Peak Week flow
6. Normal demand is the total daily demand during the normal length of day.
7. Ratio of Adults to Children 1:5, Schedule 6 of the Child Care Act 1991 (Early Years Service) Regulations 2016.

Appendix G – Surface Water Critical Storm Calculations

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by: BJM	Checked by: JT	Approved By: DB
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		



Tank 2 - Aquacell

Type : Tank

Dimensions

Exceedance Elevation (m)	24.425
Depth (m)	2.350
Base Elevation (m)	22.075
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	96
Average Slope (1:x)	0.00
Total Volume (m³)	484.781

Depth (m)	Area (m²)	Volume (m³)
0.000	462.08	0.000
1.090	462.08	483.521

Inlets

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	5.005
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	5.006
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	37.736



Tank 3 - Aquacell

Type : Tank

Dimensions

Exceedance Elevation (m)	24.150
Depth (m)	2.394
Base Elevation (m)	21.756
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	96
Average Slope (1:x)	0.00
Total Volume (m³)	307.442

Depth (m)	Area (m²)	Volume (m³)
0.000	178.56	0.000
1.790	178.56	306.838

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1.015
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	1.016
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	24.053



Tank 4 - Aquacell

Type : Tank

Dimensions

Exceedance Elevation (m)	23.750
Depth (m)	2.460
Base Elevation (m)	21.290
Freeboard (mm)	0
Initial Depth (m)	0.000
Porosity (%)	96
Average Slope (1:x)	0.00
Total Volume (m³)	208.931

Depth (m)	Area (m²)	Volume (m³)
0.000	150.399	0.000
1.440	150.399	207.911

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	8.001
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	8.002
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	21.541



Tank 1 - MC3500

Type : Chamber

Dimensions

Exceedance Elevation (m)	27.187
Depth (m)	1.843
Base Elevation (m)	24.734
Number of Chambers	96
Number of Rows	6
Distance Between Rows (mm)	150
Total Volume (m³)	552.528

Chamber Shape

Type	Parabolic Arch Chamber
Chamber Length (m)	2.184
Wall Thickness (mm)	100
Diameter / Base Width (mm)	1905
Height (mm)	1143

Embedded Parameters

Porosity (%)	40
Height Above (m)	0.300
Height Below (m)	0.300
Sides (m)	0.300
Ends (m)	0.300

Inlets

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	1.007
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	1.008
Outlet Type	Free Discharge

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by: BJM	Checked by: JT	Approved By: DB
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

Flow Options

Peak Flow Calculation	Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimize Excavation
Design Level	Level Crowns
Min. Cover Depth (m)	1.200
Min. Slope (1:x)	1000.00
Max. Slope (1:x)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☑
Reduce Channel Depths	☑

Manhole Options

Apply Offset	☐

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Title: Rainfall Analysis Criteria	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Reduced
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	300
Perform First Flush Analysis	☐

Rainfall

FSR 5YR

Type: FSR

Region	Scotland and Ireland
M5-60 (mm)	14.6
Ratio R	0.265
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
5.0	30.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Title: Rainfall Analysis Criteria	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 30YR

Type: FSR

Region	Scotland and Ireland
M5-60 (mm)	14.6
Ratio R	0.265
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	30.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Title: Rainfall Analysis Criteria	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 100YR

Type: FSR

Region	Scotland and Ireland
M5-60 (mm)	14.6
Ratio R	0.265
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	30.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 5YR: 5 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (km²)	Max. Inflow (L/s)	Total Inflow Volume (m³)
C1-1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	23.0	10.607
C1-2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	16.1	7.425
C1-3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	24.6	11.350
C1-4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	23.5	10.861
C1-5	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	3.8	1.763
C1-6	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	35.6	16.466
C1-7	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	5.7	2.651
C1-8	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	8.9	4.099
C2-1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	17.4	8.034
C2-2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	34.3	15.848
C2-3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	38.2	17.666
C2-4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	20.2	9.341
C2-5	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	12.4	5.719
C3-1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	14.9	6.891

C3-2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	20.4	9.440
C3-3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	8.8	4.078
C3-4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	9.2	4.252
C3-5	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	20.5	9.458
C3-6	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	9.2	4.267
C2-6	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	17.3	7.980
C3-Blue Roof 1	FSR 5YR: 5 years: +30 %: 30 mins: Summer	0.00	1.0	1.593
C3-Blue Roof 2	FSR 5YR: 5 years: +30 %: 30 mins: Summer	0.00	1.0	1.738
C3-7	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	9.2	4.246
C3-8	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	8.4	3.901
C3-9	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	9.7	4.468
C4-1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	13.3	6.150
C4-2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	0.00	22.2	10.259

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		



FSR 30YR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (km²)	Max. Inflow (L/s)	Total Inflow Volume (m³)
C1-1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	33.6	15.513
C1-2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	23.5	10.862
C1-3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	35.9	16.605
C1-4	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	34.4	15.885
C1-5	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	5.6	2.582
C1-6	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	52.1	24.078
C1-7	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	8.4	3.871
C1-8	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	13.0	6.001
C2-1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	25.4	11.743
C2-2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	50.2	23.172
C2-3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	55.9	25.829
C2-4	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	29.6	13.660
C2-5	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	18.1	8.364
C3-1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	21.8	10.079

C3-2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	29.9	13.810
C3-3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	12.9	5.965
C3-4	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	13.5	6.220
C3-5	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	29.9	13.831
C3-6	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	13.5	6.241
C2-6	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	25.3	11.668
C3-Blue Roof 1	FSR 30YR: 30 years: +30 %: 15 mins: Summer	0.00	1.0	0.750
C3-Blue Roof 2	FSR 30YR: 30 years: +30 %: 15 mins: Summer	0.00	1.0	0.750
C3-7	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	13.4	6.208
C3-8	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	12.3	5.704
C3-9	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	14.1	6.531
C4-1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	19.5	8.997
C4-2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	0.00	32.5	14.997

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 100YR: 100 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (km^2)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
C1-1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	43.4	20.029
C1-2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	30.4	14.022
C1-3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	46.4	21.435
C1-4	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	44.4	20.508
C1-5	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	7.2	3.329
C1-6	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	67.3	31.085
C1-7	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	10.8	5.002
C1-8	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	16.8	7.746
C2-1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	32.8	15.165
C2-2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	64.8	29.919
C2-3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	72.2	33.349
C2-4	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	38.2	17.636
C2-5	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	23.4	10.796
C3-1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	28.2	13.018

C3-2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	38.6	17.825
C3-3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	16.7	7.698
C3-4	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	17.4	8.025
C3-5	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	38.7	17.858
C3-6	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	17.4	8.055
C2-6	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	32.6	15.063
C3-Blue Roof 1	FSR 100YR: 100 years: +30 %: 15 mins: Summer	0.00	1.0	0.750
C3-Blue Roof 2	FSR 100YR: 100 years: +30 %: 15 mins: Summer	0.00	1.0	0.750
C3-7	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	17.4	8.019
C3-8	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	15.9	7.362
C3-9	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	18.3	8.432
C4-1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	25.2	11.617
C4-2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	0.00	41.9	19.363

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 5YR: 5 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	30.104	28.704	28.842	0.138	23.0	0.156	0.000	21.4	10.603	OK
S2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	30.257	28.476	28.624	0.148	37.5	0.168	0.000	35.9	18.004	OK
S3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	30.084	28.439	28.543	0.104	35.9	0.118	0.000	35.0	17.998	OK
S4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	29.305	27.785	27.873	0.088	35.0	0.099	0.000	34.1	17.977	OK
S5	FSR 5YR: 5 years: +30 %: 15 mins: Winter	28.914	27.248	27.360	0.112	58.6	0.127	0.000	55.7	29.306	OK
S6	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	27.473	25.031	25.440	0.409	6.2	0.463	0.000	6.0	316.880	Surcharged
S7	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	27.725	24.884	25.440	0.556	8.2	0.629	0.000	8.1	425.934	Surcharged
S7.2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	28.043	26.643	26.794	0.151	26.7	0.171	0.000	23.1	12.589	OK
S7.1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	29.002	27.602	27.690	0.088	23.5	0.100	0.000	22.8	10.877	OK
BP1	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	27.675	24.760	25.440	0.680	8.1	0.770	0.000	8.0	425.925	Surcharged
S6.1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	27.004	25.499	25.701	0.202	35.6	0.229	0.000	31.8	16.463	OK
S6.2	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	26.889	25.174	25.440	0.266	2.4	0.301	0.000	2.4	124.907	OK
S8	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	27.187	24.734	25.440	0.706	2.2	0.799	0.000	2.2	417.257	Surcharged
S9	FSR 5YR: 5 years: +30 %: 15 mins: Winter	27.015	24.633	24.723	0.090	30.5	0.101	0.000	29.2	15.448	OK
S10	FSR 5YR: 5 years: +30 %: 15 mins: Winter	24.741	23.267	23.353	0.086	38.4	0.097	0.000	36.6	19.980	OK
S11	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.455	22.044	22.421	0.377	13.4	0.426	0.000	13.0	800.997	OK
S12	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.500	21.930	22.420	0.490	17.1	0.555	0.000	26.7	942.982	Surcharged
S13	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.200	21.785	22.440	0.655	39.0	0.740	0.000	16.6	949.003	Surcharged
BP3	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.300	21.817	22.447	0.630	60.9	0.712	0.000	39.0	946.205	Surcharged

S9.1	FSR 5YR: 5 years: +30 %: 15 mins: Summer	27.593	26.055	26.055	0.000	0.0	0.000	0.000	0.0	0.000	OK
S12.1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	30.258	28.700	28.769	0.069	14.9	0.078	0.000	14.4	6.891	OK
S12.2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	29.184	27.583	27.679	0.096	34.8	0.109	0.000	33.3	16.320	OK
S12.3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	27.261	25.991	26.096	0.105	42.1	0.118	0.000	40.8	20.388	OK
S12.4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	26.204	24.872	24.972	0.100	50.0	0.113	0.000	48.8	24.668	OK
S11.1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	26.652	25.193	25.272	0.079	17.4	0.089	0.000	16.7	8.038	OK
S11.2	FSR 5YR: 5 years: +30 %: 15 mins: Winter	25.402	24.187	24.312	0.125	51.0	0.141	0.000	46.7	23.851	OK
S11.3	FSR 5YR: 5 years: +30 %: 15 mins: Winter	24.982	22.642	22.874	0.232	84.9	0.263	0.000	80.9	41.513	OK
S11.4	FSR 5YR: 5 years: +30 %: 15 mins: Winter	24.466	22.413	22.669	0.256	101.1	0.289	0.000	92.4	50.767	OK
S11.5	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.303	22.228	22.483	0.255	9.4	0.289	0.000	9.5	320.923	OK
S11.5.1	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.378	22.376	22.483	0.107	0.9	0.121	0.000	0.9	32.475	OK
BP2	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.350	22.106	22.483	0.377	10.8	0.427	0.000	10.6	366.135	Surcharged
S11.6	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	24.425	22.075	22.483	0.408	7.3	0.462	0.000	7.3	352.169	Surcharged
S14	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	23.940	21.756	22.420	0.664	12.6	0.751	0.000	12.5	927.260	Surcharged
S15	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	23.850	21.698	22.301	0.603	13.2	0.683	0.000	12.8	952.369	Surcharged
S16	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	23.650	21.446	22.299	0.853	13.7	0.964	0.000	13.5	987.070	Surcharged
S17	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	23.700	21.290	22.297	1.007	13.5	1.138	0.000	7.8	1126.343	Surcharged
EX S1	FSR 5YR: 5 years: +30 %: 960 mins: Winter	23.575	21.250	21.326	0.076	7.8	0.000	0.000	7.8	759.820	OK
S17.1	FSR 5YR: 5 years: +30 %: 15 mins: Winter	23.650	22.250	22.316	0.066	22.2	0.075	0.000	22.0	10.270	OK
S17.2	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	23.650	21.314	22.297	0.983	1.7	1.111	0.000	1.7	57.962	Surcharged

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 30YR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	30.104	28.704	28.893	0.189	33.6	0.214	0.000	31.0	15.510	OK
S2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	30.257	28.476	28.660	0.184	54.5	0.208	0.000	52.8	26.345	OK
S3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	30.084	28.439	28.568	0.129	52.8	0.146	0.000	51.6	26.340	OK
S4	FSR 30YR: 30 years: +30 %: 15 mins: Winter	29.305	27.785	27.895	0.110	51.6	0.124	0.000	50.3	26.317	OK
S5	FSR 30YR: 30 years: +30 %: 15 mins: Winter	28.914	27.248	27.388	0.140	86.2	0.159	0.000	82.3	42.728	OK
S6	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	27.473	25.031	25.752	0.721	8.2	0.816	0.000	8.1	431.061	Surcharged
S7	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	27.725	24.884	25.752	0.868	11.0	0.982	0.000	10.9	578.336	Surcharged
S7.2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	28.043	26.643	26.851	0.208	39.1	0.236	0.000	33.5	18.429	OK
S7.1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	29.002	27.602	27.711	0.109	34.4	0.123	0.000	33.5	15.900	OK
BP1	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	27.675	24.760	25.752	0.992	10.9	1.122	0.000	10.9	577.619	Surcharged
S6.1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	27.004	25.499	26.132	0.633	52.1	0.716	0.000	44.3	23.915	Surcharged
S6.2	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	26.889	25.174	25.752	0.578	3.3	0.654	0.000	3.1	170.010	Surcharged
S8	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	27.187	24.734	25.752	1.018	2.2	1.152	0.000	2.2	491.502	Surcharged
S9	FSR 30YR: 30 years: +30 %: 15 mins: Winter	27.015	24.633	24.744	0.111	44.9	0.125	0.000	43.2	22.027	OK
S10	FSR 30YR: 30 years: +30 %: 15 mins: Winter	24.741	23.267	23.372	0.105	56.6	0.119	0.000	54.4	28.837	OK
S11	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.455	22.044	22.713	0.669	14.5	0.756	0.000	14.1	1005.754	Surcharged
S12	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.500	21.930	22.717	0.787	18.9	0.890	0.000	18.5	1121.947	Surcharged
S13	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.200	21.785	22.721	0.936	43.6	1.059	0.000	18.3	1149.186	Surcharged
BP3	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.300	21.817	22.717	0.900	19.0	1.018	0.000	43.6	1404.894	Surcharged

S9.1	FSR 30YR: 30 years: +30 %: 15 mins: Summer	27.593	26.055	26.055	0.000	0.0	0.000	0.000	0.0	0.000	OK
S12.1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	30.258	28.700	28.784	0.084	21.8	0.095	0.000	21.1	10.079	OK
S12.2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	29.184	27.583	27.704	0.121	51.0	0.137	0.000	48.9	23.876	OK
S12.3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	27.261	25.991	26.124	0.133	61.9	0.150	0.000	59.9	29.830	OK
S12.4	FSR 30YR: 30 years: +30 %: 15 mins: Winter	26.204	24.872	24.997	0.125	73.5	0.142	0.000	72.0	36.088	OK
S11.1	FSR 30YR: 30 years: +30 %: 15 mins: Winter	26.652	25.193	25.290	0.097	25.4	0.110	0.000	24.5	11.749	OK
S11.2	FSR 30YR: 30 years: +30 %: 15 mins: Winter	25.402	24.187	24.344	0.157	74.6	0.177	0.000	68.9	34.881	OK
S11.3	FSR 30YR: 30 years: +30 %: 15 mins: Winter	24.982	22.642	22.965	0.323	124.8	0.365	0.000	116.9	60.684	OK
S11.4	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.466	22.413	22.778	0.365	11.6	0.413	0.000	11.6	397.621	OK
S11.5	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.303	22.228	22.778	0.550	12.9	0.622	0.000	12.7	442.235	Surcharged
S11.5.1	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.378	22.376	22.778	0.402	1.3	0.455	0.000	1.3	44.710	Surcharged
BP2	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.350	22.106	22.778	0.672	14.5	0.760	0.000	14.4	504.423	Surcharged
S11.6	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	24.425	22.075	22.778	0.703	7.6	0.795	0.000	7.6	464.938	Surcharged
S14	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.940	21.756	22.711	0.955	12.9	1.080	0.000	12.9	1125.944	Surcharged
S15	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.850	21.698	22.593	0.895	13.6	1.012	0.000	13.1	1158.702	Surcharged
S16	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.650	21.446	22.590	1.144	14.2	1.294	0.000	13.9	1202.863	Surcharged
S17	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.700	21.290	22.589	1.299	13.9	1.469	0.000	7.8	1305.741	Surcharged
EX S1	FSR 30YR: 30 years: +30 %: 960 mins: Winter	23.575	21.250	21.326	0.076	7.8	0.000	0.000	7.8	782.309	OK
S17.1	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.650	22.250	22.589	0.339	2.3	0.383	0.000	2.3	80.097	Surcharged
S17.2	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	23.650	21.314	22.589	1.275	2.3	1.441	0.000	2.3	78.905	Surcharged

FSR 100YR: 100 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	30.104	28.704	29.055	0.351	43.4	0.397	0.000	38.9	20.039	Surcharged
S2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	30.257	28.476	28.690	0.214	69.2	0.242	0.000	67.5	34.021	OK
S3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	30.084	28.439	28.587	0.148	67.5	0.167	0.000	65.3	34.017	OK
S4	FSR 100YR: 100 years: +30 %: 15 mins: Winter	29.305	27.785	27.912	0.127	65.3	0.143	0.000	63.8	33.992	OK
S5	FSR 100YR: 100 years: +30 %: 15 mins: Winter	28.914	27.248	27.406	0.158	110.2	0.179	0.000	108.2	55.101	OK
S6	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	27.473	25.031	26.127	1.096	10.3	1.239	0.000	10.0	526.673	Surcharged
S7	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	27.725	24.884	26.127	1.243	13.6	1.405	0.000	13.6	707.064	Surcharged
S7.2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	28.043	26.643	26.997	0.354	50.8	0.400	0.000	43.5	23.800	Surcharged
S7.1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	29.002	27.602	27.730	0.128	44.4	0.145	0.000	43.6	20.497	OK
BP1	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	27.675	24.760	26.127	1.367	13.6	1.546	0.000	13.5	705.903	Surcharged
S6.1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	27.004	25.499	26.821	1.322	67.3	1.495	0.000	56.6	30.888	Flood Risk
S6.2	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	26.889	25.174	26.127	0.953	4.1	1.077	0.000	4.0	207.693	Surcharged
S8	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	27.187	24.734	26.126	1.392	2.2	1.575	0.000	2.2	517.501	Surcharged
S9	FSR 100YR: 100 years: +30 %: 15 mins: Winter	27.015	24.633	24.761	0.128	58.0	0.144	0.000	55.9	28.052	OK
S10	FSR 100YR: 100 years: +30 %: 15 mins: Winter	24.741	23.267	23.387	0.120	73.3	0.136	0.000	70.7	36.684	OK
S11	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.455	22.044	23.044	1.000	14.8	1.132	0.000	14.4	1060.728	Surcharged
S12	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.500	21.930	23.048	1.118	37.6	1.264	0.000	54.7	1207.686	Surcharged
S13	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.200	21.785	23.052	1.267	63.8	1.433	0.000	34.4	1238.848	Surcharged
BP3	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.300	21.817	23.264	1.447	99.7	1.636	0.000	63.8	1643.453	Surcharged

S9.1	FSR 100YR: 100 years: +30 %: 15 mins: Summer	27.593	26.055	26.055	0.000	0.0	0.000	0.000	0.0	0.000	OK
S12.1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	30.258	28.700	28.797	0.097	28.2	0.110	0.000	27.3	13.018	OK
S12.2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	29.184	27.583	27.726	0.143	65.9	0.162	0.000	63.3	30.829	OK
S12.3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	27.261	25.991	26.151	0.160	80.0	0.181	0.000	77.4	38.515	OK
S12.4	FSR 100YR: 100 years: +30 %: 15 mins: Winter	26.204	24.872	25.020	0.148	94.8	0.168	0.000	93.2	46.567	OK
S11.1	FSR 100YR: 100 years: +30 %: 15 mins: Winter	26.652	25.193	25.305	0.112	32.8	0.127	0.000	31.7	15.171	OK
S11.2	FSR 100YR: 100 years: +30 %: 15 mins: Winter	25.402	24.187	24.374	0.187	96.5	0.212	0.000	93.8	44.847	OK
S11.3	FSR 100YR: 100 years: +30 %: 15 mins: Winter	24.982	22.642	23.404	0.762	166.0	0.862	0.000	144.5	78.300	Surcharged
S11.4	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.466	22.413	23.111	0.698	14.4	0.789	0.000	14.1	493.038	Surcharged
S11.5	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.303	22.228	23.110	0.882	15.6	0.998	0.000	15.2	546.568	Surcharged
S11.5.1	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.378	22.376	23.110	0.734	1.6	0.831	0.000	1.5	55.304	Surcharged
BP2	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.350	22.106	23.110	1.004	17.5	1.136	0.000	17.4	623.085	Surcharged
S11.6	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	24.425	22.075	23.110	1.035	7.7	1.171	0.000	7.7	465.441	Surcharged
S14	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.940	21.756	23.043	1.287	12.9	1.455	0.000	12.9	1153.527	Surcharged
S15	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.850	21.698	22.927	1.229	13.6	1.390	0.000	13.2	1193.505	Surcharged
S16	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.650	21.446	22.925	1.479	14.3	1.673	0.000	14.0	1248.875	Surcharged
S17	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.700	21.290	22.923	1.633	14.0	1.847	0.000	7.8	1342.471	Surcharged
EX S1	FSR 100YR: 100 years: +30 %: 4320 mins: Winter	23.575	21.250	21.326	0.076	7.8	0.000	0.000	7.8	2636.822	OK
S17.1	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.650	22.250	22.923	0.673	2.9	0.761	0.000	2.8	99.400	Surcharged
S17.2	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.650	21.314	22.923	1.609	2.8	1.820	0.000	2.8	97.843	Surcharged

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by: BJM	Checked by: JT	Approved By: DB
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 5YR: 5 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank 1 - MC3500	FSR 5YR: 5 years: +30 %: 2160 mins: Winter	25.440	25.440	0.706	0.706	8.0	228.650	0.000	0.000	2.2	417.326	58.617	OK
Tank 2 - Aquacell	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	22.483	22.483	0.408	0.408	10.6	181.101	0.000	0.000	7.3	352.236	62.643	OK
Tank 3 - Aquacell	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	22.420	22.420	0.664	0.664	16.6	113.852	0.000	0.000	12.6	928.052	62.968	OK
Tank 4 - Aquacell	FSR 5YR: 5 years: +30 %: 1440 mins: Winter	22.297	22.297	1.007	1.007	7.1	145.339	0.000	0.000	4.1	139.741	30.437	OK

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by: BJM	Checked by: JT	Approved By: DB
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 30YR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank 1 - MC3500	FSR 30YR: 30 years: +30 %: 2160 mins: Winter	25.752	25.752	1.018	1.018	10.9	349.621	0.000	0.000	2.2	492.226	36.724	OK
Tank 2 - Aquacell	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	22.778	22.778	0.703	0.703	14.4	311.910	0.000	0.000	7.6	465.143	35.660	OK
Tank 3 - Aquacell	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	22.711	22.711	0.955	0.955	18.3	163.688	0.000	0.000	12.9	1128.661	46.758	OK
Tank 4 - Aquacell	FSR 30YR: 30 years: +30 %: 1440 mins: Winter	22.589	22.589	1.299	1.299	7.7	187.485	0.000	0.000	1.7	105.109	10.265	OK

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by: BJM	Checked by: JT	Approved By: DB
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 100YR: 100 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank 1 - MC3500	FSR 100YR: 100 years: +30 %: 2160 mins: Winter	26.126	26.126	1.392	1.392	13.5	467.280	0.000	0.000	2.2	518.529	15.429	OK
Tank 2 - Aquacell	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.110	23.110	1.035	1.035	17.4	459.319	0.000	0.000	7.7	465.262	5.252	OK
Tank 3 - Aquacell	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	23.043	23.043	1.287	1.287	34.4	220.570	0.000	0.000	12.9	1164.325	28.256	OK
Tank 4 - Aquacell	FSR 100YR: 100 years: +30 %: 1440 mins: Winter	22.923	22.923	1.633	1.633	7.9	208.148	0.000	0.000	1.7	96.198	0.375	OK

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 5YR: 5 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S1	S2	30.104	28.842	0.143	10.603	0.8	0.67	21.4	OK
1.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S2	S3	30.257	28.624	0.126	18.004	1.3	0.52	35.9	OK
1.002	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S3	S4	30.084	28.543	0.096	17.998	1.8	0.23	35.0	OK
1.003	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S4	S5	29.305	27.873	0.100	17.977	1.6	0.18	34.1	OK
1.004	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S5	S6	28.914	27.360	0.111	29.306	2.4	0.28	55.7	OK
1.005	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S6	S7	27.473	25.283	0.274	48.348	1.0	0.68	84.1	OK
1.006	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S7	BP1	27.725	25.180	0.271	64.020	1.3	0.9	111.7	OK
3.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S7.1	S7.2	29.002	27.690	0.120	10.877	1.1	0.32	22.8	OK
3.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S7.2	S7	28.043	26.794	0.139	12.589	0.9	0.73	23.1	OK
1.007	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	BP1	Tank 1 - MC3500	27.675	25.038	0.291	63.462	2.2	0.89	113.3	OK
2.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S6.1	S6.2	27.004	25.701	0.175	16.463	1.0	1	31.8	OK
2.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S6.2	S6	26.889	25.322	0.200	19.072	0.7	0.47	33.8	OK
7.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S12.1	S12.2	30.258	28.769	0.082	6.891	1.1	0.2	14.4	OK
7.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S12.2	S12.3	29.184	27.679	0.100	16.320	1.9	0.37	33.3	OK

7.002	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S12.3	S12.4	27.261	26.096	0.102	20.388	2.3	0.41	40.8	OK
7.003	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S12.4	S12	26.204	24.972	0.165	24.668	1.6	0.4	48.8	OK
1.009	FSR 5YR: 5 years: +30 %: 720 mins: Winter	Pipe	S8	S9	27.187	25.401	0.038	156.217	0.6	0.07	2.2	Surch arged
1.010	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S9	S10	27.015	24.723	0.088	15.448	1.7	0.18	29.2	OK
1.011	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S10	S11	24.741	23.353	0.113	19.980	1.3	0.12	36.6	OK
1.012	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11	S12	24.455	22.184	0.185	26.489	0.6	0.19	38.4	OK
4.000	FSR 5YR: 5 years: +30 %: 15 mins: Summer	Pipe	S9.1	S9	27.593	26.055	0.000	0.000	0.0	0	0.0	OK
1.008	FSR 5YR: 5 years: +30 %: 60 mins: Winter	Pipe	Tank 1 - MC3500	S8	27.187	25.151	0.375	10.843	0.1	0.03	2.7	Surch arged
1.013	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S12	BP3	24.500	22.160	0.215	50.655	1.1	0.41	83.5	OK
1.014	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	BP3	S13	24.300	22.017	0.193	50.405	1.3	0.25	82.9	OK
5.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.1	S11.2	26.652	25.272	0.102	8.038	1.0	0.26	16.7	OK
5.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.2	S11.3	25.402	24.312	0.123	23.851	1.7	0.34	46.7	OK
5.002	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.3	S11.4	24.982	22.874	0.244	41.513	1.1	0.65	80.9	OK
5.003	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.4	S11.5	24.466	22.669	0.233	50.767	1.3	0.75	92.4	OK
6.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.5.1	S11.5	24.378	22.456	0.145	5.726	0.4	0.27	12.1	OK
5.004	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S11.5	BP2	24.303	22.439	0.222	56.435	1.5	0.34	99.7	OK
5.007	FSR 5YR: 5 years: +30 %: 960 mins: Summer	Pipe	S11.6	S11	24.425	22.411	0.225	263.726	0.5	0.32	8.2	Surch arged

5.005	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	BP2	Tank 2 - Aquacell	24.350	22.339	0.142	64.210	3.1	0.71	115.8	OK
5.006	FSR 5YR: 5 years: +30 %: 960 mins: Summer	Pipe	Tank 2 - Aquacell	S11.6	24.425	22.411	0.336	263.829	0.1	0.1	8.3	OK
1.015	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S13	Tank 3 - Aquacell	24.200	21.993	0.222	49.981	2.1	0.34	82.2	OK
1.016	FSR 5YR: 5 years: +30 %: 240 mins: Summer	Pipe	Tank 3 - Aquacell	S14	24.150	22.257	0.450	230.865	0.1	0.13	15.2	Surch arged
1.017	FSR 5YR: 5 years: +30 %: 600 mins: Summer	Pipe	S14	S15	23.940	22.313	0.300	474.693	0.7	0.22	15.0	Surch arged
1.018	FSR 5YR: 5 years: +30 %: 120 mins: Winter	Pipe	S15	S16	23.850	21.985	0.300	151.577	0.7	0.26	17.7	OK
1.019	FSR 5YR: 5 years: +30 %: 60 mins: Winter	Pipe	S16	S17	23.650	21.770	0.300	88.789	0.7	0.32	22.0	Surch arged
1.020	FSR 5YR: 5 years: +30 %: 960 mins: Winter	Pipe	S17	EX S1	23.700	22.287	0.078	759.820	0.6	0.24	7.8	Surch arged
8.000	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S17.1	S17.2	23.650	22.316	0.091	10.270	1.5	0.19	22.0	OK
8.001	FSR 5YR: 5 years: +30 %: 15 mins: Winter	Pipe	S17.2	Tank 4 - Aquacell	23.650	21.454	0.152	9.952	1.7	0.52	21.5	OK
8.002	FSR 5YR: 5 years: +30 %: 960 mins: Summer	Pipe	Tank 4 - Aquacell	S17	23.750	22.220	0.300	19.005	0.1	0.08	4.2	Surch arged

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 30YR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S1	S2	30.104	28.893	0.187	15.510	0.9	0.98	31.0	OK
1.001	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S2	S3	30.257	28.660	0.156	26.345	1.4	0.77	52.8	OK
1.002	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S3	S4	30.084	28.568	0.119	26.340	2.0	0.34	51.6	OK
1.003	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S4	S5	29.305	27.895	0.125	26.317	1.8	0.26	50.3	OK
1.004	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S5	S6	28.914	27.388	0.138	42.728	2.6	0.42	82.3	OK
1.005	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S6	S7	27.473	25.422	0.375	70.270	1.0	0.91	112.4	Surcharged
1.006	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S7	BP1	27.725	25.266	0.337	93.044	1.5	1.27	157.3	Surcharged
3.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S7.1	S7.2	29.002	27.711	0.159	15.900	1.1	0.47	33.5	OK
3.001	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S7.2	S7	28.043	26.851	0.181	18.429	1.0	1.06	33.5	OK
1.007	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	BP1	Tank 1 - MC3500	27.675	25.110	0.359	92.367	2.3	1.17	148.7	OK
2.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S6.1	S6.2	27.004	26.132	0.225	23.915	1.1	1.39	44.3	Surcharged
2.001	FSR 30YR: 30 years: +30 %: 30 mins: Winter	Pipe	S6.2	S6	26.889	25.395	0.271	38.786	0.7	0.58	41.8	OK
7.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S12.1	S12.2	30.258	28.784	0.102	10.079	1.2	0.3	21.1	OK
7.001	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S12.2	S12.3	29.184	27.704	0.127	23.876	2.1	0.55	48.9	OK

7.002	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S12.3	S12.4	27.261	26.124	0.129	29.830	2.5	0.6	59.9	OK
7.003	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S12.4	S12	26.204	24.997	0.205	36.088	1.9	0.6	72.0	OK
1.009	FSR 30YR: 30 years: +30 %: 180 mins: Winter	Pipe	S8	S9	27.187	25.443	0.049	40.183	0.6	0.07	2.2	Surch arged
1.010	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S9	S10	27.015	24.744	0.108	22.027	1.9	0.27	43.2	OK
1.011	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S10	S11	24.741	23.372	0.149	28.837	1.3	0.17	54.4	OK
1.012	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11	S12	24.455	22.238	0.240	39.985	0.6	0.27	55.4	OK
4.000	FSR 30YR: 30 years: +30 %: 15 mins: Summer	Pipe	S9.1	S9	27.593	26.055	0.000	0.000	0.0	0	0.0	OK
1.008	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	Tank 1 - MC3500	S8	27.187	25.106	0.372	2.854	0.1	0.04	3.4	OK
1.013	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S12	BP3	24.500	22.215	0.265	74.576	1.3	0.61	122.7	OK
1.014	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	BP3	S13	24.300	22.097	0.295	74.147	1.4	0.36	121.9	OK
5.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.1	S11.2	26.652	25.290	0.127	11.749	1.1	0.39	24.5	OK
5.001	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.2	S11.3	25.402	24.344	0.154	34.881	1.9	0.5	68.9	OK
5.002	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.3	S11.4	24.982	22.965	0.343	60.684	1.1	0.94	116.9	OK
5.003	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.4	S11.5	24.466	22.776	0.324	74.292	1.3	1.08	134.1	OK
6.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.5.1	S11.5	24.378	22.529	0.219	8.372	0.4	0.36	16.0	OK
5.004	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S11.5	BP2	24.303	22.513	0.300	82.388	1.5	0.49	144.5	OK
5.007	FSR 30YR: 30 years: +30 %: 30 mins: Summer	Pipe	S11.6	S11	24.425	22.320	0.148	16.673	0.4	0.33	8.3	Surch arged

5.005	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	BP2	Tank 2 - Aquacell	24.350	22.421	0.197	93.716	2.9	1.02	167.4	OK
5.006	FSR 30YR: 30 years: +30 %: 960 mins: Summer	Pipe	Tank 2 - Aquacell	S11.6	24.425	22.656	0.375	317.435	0.1	0.1	8.4	Surch arged
1.015	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S13	Tank 3 - Aquacell	24.200	22.096	0.325	73.468	2.3	0.5	120.9	OK
1.016	FSR 30YR: 30 years: +30 %: 120 mins: Winter	Pipe	Tank 3 - Aquacell	S14	24.150	22.439	0.450	156.074	0.1	0.13	15.7	Surch arged
1.017	FSR 30YR: 30 years: +30 %: 120 mins: Winter	Pipe	S14	S15	23.940	22.438	0.300	154.526	0.7	0.23	15.6	Surch arged
1.018	FSR 30YR: 30 years: +30 %: 60 mins: Winter	Pipe	S15	S16	23.850	21.891	0.300	88.992	0.7	0.33	22.3	OK
1.019	FSR 30YR: 30 years: +30 %: 30 mins: Winter	Pipe	S16	S17	23.650	21.664	0.293	52.600	0.8	0.5	34.2	OK
1.020	FSR 30YR: 30 years: +30 %: 960 mins: Winter	Pipe	S17	EX S1	23.700	22.576	0.078	782.309	0.6	0.24	7.8	Surch arged
8.000	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S17.1	S17.2	23.650	22.331	0.114	15.013	1.6	0.28	32.2	OK
8.001	FSR 30YR: 30 years: +30 %: 15 mins: Winter	Pipe	S17.2	Tank 4 - Aquacell	23.650	21.532	0.225	14.487	1.8	0.76	31.4	OK
8.002	FSR 30YR: 30 years: +30 %: 2160 mins: Summer	Pipe	Tank 4 - Aquacell	S17	23.750	22.480	0.300	67.935	0.1	0.08	4.1	Surch arged

Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

FSR 100YR: 100 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S1	S2	30.104	29.055	0.225	20.039	1.0	1.23	38.9	Surcharged
1.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S2	S3	30.257	28.690	0.181	34.021	1.5	0.99	67.5	OK
1.002	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S3	S4	30.084	28.587	0.137	34.017	2.1	0.43	65.3	OK
1.003	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S4	S5	29.305	27.912	0.143	33.992	1.9	0.33	63.8	OK
1.004	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S5	S6	28.914	27.406	0.266	55.101	2.3	0.55	108.2	OK
1.005	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S6	S7	27.473	25.676	0.375	90.354	1.4	1.26	155.9	Surcharged
1.006	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S7	BP1	27.725	25.389	0.375	119.748	1.9	1.72	213.7	Surcharged
3.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S7.1	S7.2	29.002	27.730	0.225	20.497	1.1	0.62	43.6	OK
3.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S7.2	S7	28.043	26.997	0.225	23.800	1.1	1.37	43.5	Surcharged
1.007	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	BP1	Tank 1 - MC3500	27.675	25.177	0.375	118.988	2.5	1.66	211.3	Surcharged
2.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S6.1	S6.2	27.004	26.821	0.225	30.888	1.4	1.78	56.6	Flood Risk
2.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S6.2	S6	26.889	25.801	0.300	36.113	0.9	0.85	61.7	Surcharged
7.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S12.1	S12.2	30.258	28.797	0.120	13.018	1.3	0.38	27.3	OK
7.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S12.2	S12.3	29.184	27.726	0.152	30.829	2.2	0.71	63.3	OK

7.002	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S12.3	S12.4	27.261	26.151	0.154	38.515	2.7	0.77	77.4	OK
7.003	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S12.4	S12	26.204	25.020	0.225	46.567	2.3	0.77	93.2	OK
1.009	FSR 100YR: 100 years: +30 %: 180 mins: Winter	Pipe	S8	S9	27.187	25.621	0.054	41.114	0.6	0.07	2.2	Surch arged
1.010	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S9	S10	27.015	24.761	0.124	28.052	2.0	0.35	55.9	OK
1.011	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S10	S11	24.741	23.387	0.181	36.684	1.3	0.22	70.7	OK
1.012	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11	S12	24.455	22.287	0.288	49.011	0.7	0.35	71.8	OK
4.000	FSR 100YR: 100 years: +30 %: 15 mins: Summer	Pipe	S9.1	S9	27.593	26.055	0.000	0.000	0.0	0	0.0	OK
1.008	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	Tank 1 - MC3500	S8	27.187	25.169	0.375	3.137	0.1	0.05	4.3	Surch arged
1.013	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S12	BP3	24.500	22.264	0.308	92.983	1.4	0.8	160.5	OK
1.014	FSR 100YR: 100 years: +30 %: 960 mins: Winter	Pipe	BP3	S13	24.300	23.018	0.450	1172.694	1.2	0.59	198.2	Surch arged
5.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.1	S11.2	26.652	25.305	0.150	15.171	1.1	0.5	31.7	OK
5.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.2	S11.3	25.402	24.374	0.216	44.847	1.7	0.69	93.8	OK
5.002	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.3	S11.4	24.982	23.404	0.375	78.300	1.3	1.16	144.5	Surch arged
5.003	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.4	S11.5	24.466	23.038	0.375	95.946	1.6	1.44	178.5	Surch arged
6.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.5.1	S11.5	24.378	22.648	0.225	10.807	0.5	0.47	21.1	Surch arged
5.004	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S11.5	BP2	24.303	22.604	0.372	105.965	1.8	0.67	196.5	Surch arged
5.007	FSR 100YR: 100 years: +30 %: 15 mins: Summer	Pipe	S11.6	S11	24.425	22.309	0.213	6.190	0.5	0.34	8.7	Surch arged

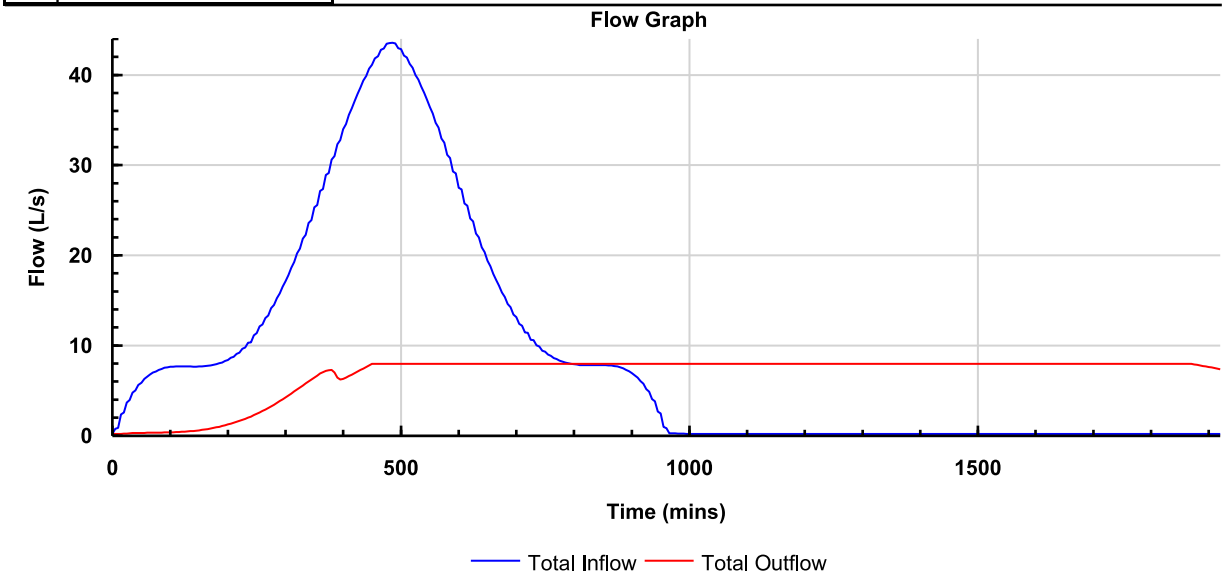
5.005	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	BP2	Tank 2 - Aquacell	24.350	22.474	0.250	120.480	3.3	1.47	240.2	OK
5.006	FSR 100YR: 100 years: +30 %: 15 mins: Summer	Pipe	Tank 2 - Aquacell	S11.6	24.425	22.310	0.235	6.846	0.1	0.11	8.7	OK
1.015	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S13	Tank 3 - Aquacell	24.200	22.196	0.425	91.444	2.4	0.65	158.1	OK
1.016	FSR 100YR: 100 years: +30 %: 120 mins: Winter	Pipe	Tank 3 - Aquacell	S14	24.150	22.622	0.450	162.667	0.1	0.14	16.6	Surcharged
1.017	FSR 100YR: 100 years: +30 %: 60 mins: Winter	Pipe	S14	S15	23.940	22.493	0.300	84.805	0.7	0.24	16.5	Surcharged
1.018	FSR 100YR: 100 years: +30 %: 30 mins: Winter	Pipe	S15	S16	23.850	21.830	0.206	49.918	0.7	0.4	27.5	OK
1.019	FSR 100YR: 100 years: +30 %: 30 mins: Winter	Pipe	S16	S17	23.650	21.765	0.300	62.873	0.9	0.65	44.4	Surcharged
1.020	FSR 100YR: 100 years: +30 %: 4320 mins: Winter	Pipe	S17	EX S1	23.700	22.754	0.078	2636.822	0.6	0.24	7.8	Surcharged
8.000	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S17.1	S17.2	23.650	22.343	0.133	19.379	1.7	0.36	41.6	OK
8.001	FSR 100YR: 100 years: +30 %: 15 mins: Winter	Pipe	S17.2	Tank 4 - Aquacell	23.650	21.575	0.225	18.721	1.9	0.98	40.7	Surcharged
8.002	FSR 100YR: 100 years: +30 %: 2160 mins: Summer	Pipe	Tank 4 - Aquacell	S17	23.750	22.719	0.300	81.969	0.1	0.08	4.0	Surcharged

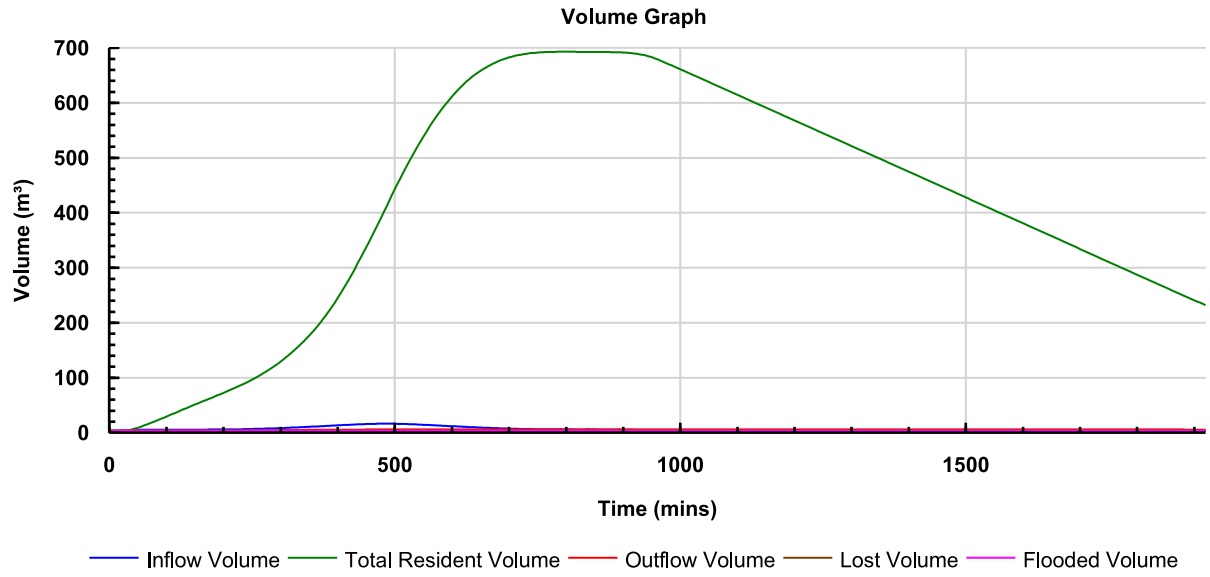
Phase
FSR 5YR: 5 years: Increase Rainfall (%): +30: 960 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
EX S1			7.8	759.820
TOTAL	43.6	990.467	7.8	759.820

Graphs





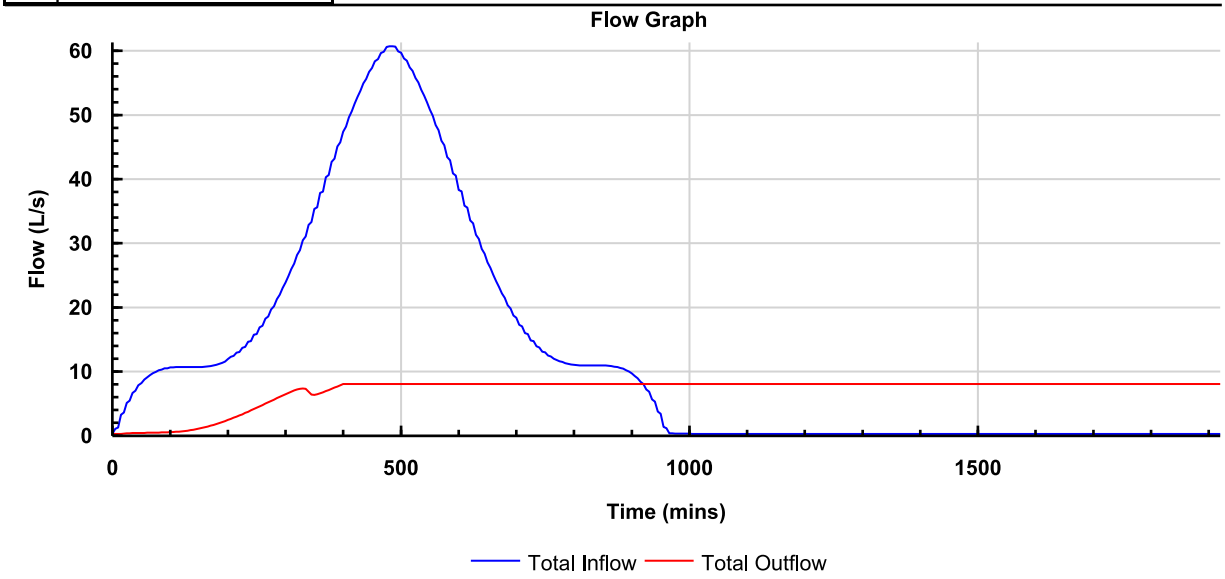
Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

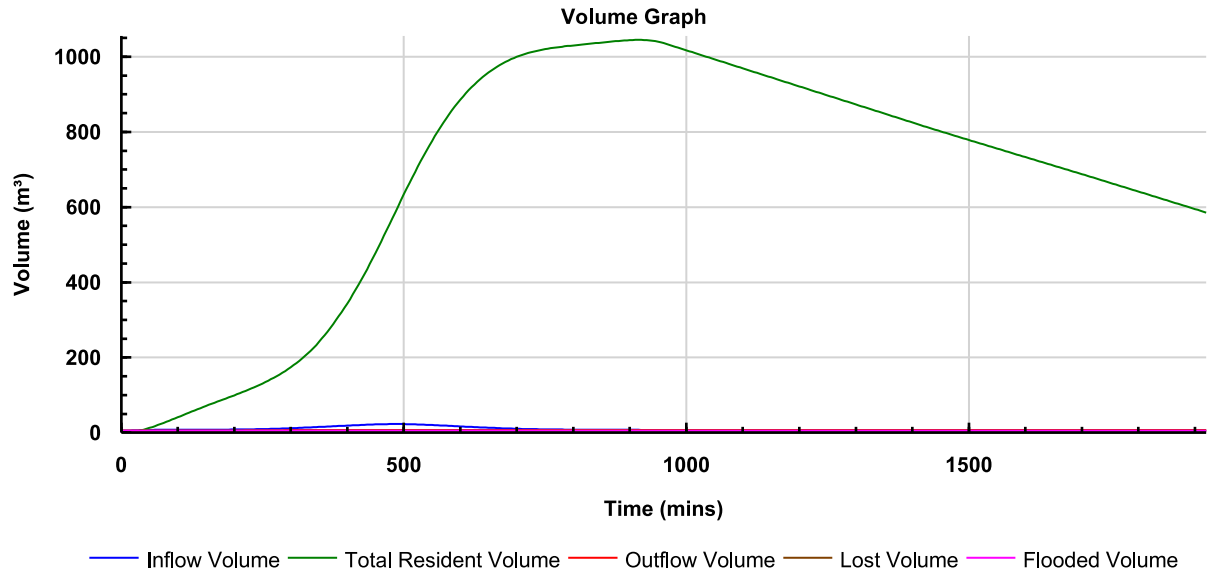
Phase
FSR 30YR: 30 years: Increase Rainfall (%): +30: 960 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
EX S1			7.8	782.309
TOTAL	60.7	1381.767	7.8	782.309

Graphs





Project:	Date:		
Residential Development at Old Orchard Monaleen, Limerick County Limerick	21/10/2025		
	Designed by:	Checked by:	Approved By:
	BJM	JT	DB
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Unit 38 Eastgate Drive Little Island, Cork T45 YO49		

Phase
FSR 100YR: 100 years: Increase Rainfall (%): +30: 4320 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
EX S1			7.8	2636.822
TOTAL	26.4	2705.130	7.8	2636.822

Graphs

