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Engineering Services Report

Proposed Residential Development

Glover Court, York Street, Dublin 2

Client: Dublin City Council

Job No. D117

July 2025

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ENGINEERING SERVICES REPORT

PROPOSED RESIDENTIAL DEVELOPMENT,

GLOVER COURT, YORK STREET, DUBLIN 2

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1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Dublin City Council to prepare an Engineering Services Report to accompany a planning submission for a proposed residential development at Glover Court, York Street, Dublin 2.

1.1 Report Overview

This report details the following aspects of the proposed development:

- Stormwater Drainage Infrastructure
- Foul Drainage Infrastructure
- Potable Water Infrastructure

In preparing this report, CS Consulting has made reference to the following:

- Dublin City Development Plan 2022–2028;
- Dublin City Council Strategic Flood Risk Assessment, 2022 – 2028;
- Building Regulation 2010 (Part H)
- Greater Dublin Regional Code of Practice for Drainage Works (Version6)
- Greater Dublin Strategic Drainage Study (GDSDS) 2005
- Irish Water's Code of Practice for Water Infrastructure (2020)
- Irish Water's Code of Practice for Wastewater Infrastructure (2020);
- Local Authority Drainage Records

The Engineering Services Report is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting, and with the various additional information submitted by the other members of the design team, as part of the planning submission.

1.2 Site Location

The proposed development site in situated within Glover court, York Street, Dublin 2. The site is located in the administrative jurisdiction of Dublin City Council and has a development site area of circa 0.3ha.

Figure 1 – Location of Proposed Development Site
(map data & imagery: EPA, OSM Contributors, Google)

The location of the proposed development site is shown in **Figure 1** above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in **Figure 2.**

The development site falls immediately south of Marlin Hotel, and is bound to the east by Mercer Street Lower, to the south by York Street, and to the west by existing commercial buildings.

Figure 2 – Elements of surrounding street network
(map data & imagery: NTA, Dublin Bus, GoCar, Yuko, DublinBikes, OSM Contributors, Google)

1.3 Site Characteristics

The subject site currently comprises of existing residential units which shall be refurbished under this planning application. The site currently generates minimal vehicular, cyclist, and pedestrian traffic. The site is currently assessed from York Street.

1.4 Ground Conditions

The site is currently brownfield. A topographical survey was carried out by BPM Surveys Ltd. on the subject site. The site currently falls from approx. 12.94 mAOD at south-western boundary of the site to 12.83 mAOD towards north-eastern boundary of the site.

1.5 Proposed Development

The project comprises of the retrofit and amalgamation of the existing blocks, with the addition of new bays, additional floors, new vertical cores, new access decks and balconies. The proposal is to provide 53 residential units comprising of 15 no. 1 bed apartments, 30 no. 2 bed apartments, 8 no. 3 bed apartments. The York Street block will be extended at both ends and by one additional upper floor. The upper floor on the York Street block will be held back on the new build section of the western boundary to create a stepping down in height in respect of the protected structure context to Aungier Street which includes the Swan Bar. The Mercer Street block will be extended on the corner with York Street and by two additional upper floors. The amalgamated building will comprise of a 5 and 6 storey block to York Street and a 7-storey block to Mercer Street. New stairs and lift cores are to be accommodated within the grid of the existing frame, one in each block. A new external façade is introduced throughout the building with access provided by a new access deck to the internal courtyard and balconies to the street facing facades.

2.0 WATER SUPPLY

2.1 Existing Water Supply

Irish Water drainage records indicate that there are existing watermain connections to the existing buildings on site, these existing residential units are served by an existing 100mm watermain traversing the central sections of the site. IW records also indicate an existing 7" cast-iron watermain along Mercer Street running along the eastern boundary of the development site and an existing 100mm ductile-iron watermain to the south of the development site. See **Appendix B** for Irish Water watermain records.

It is worth noting that the existing watermain serving the existing buildings on site are proposed to be decommissioned under this application.

2.2 Proposed Water Supply Design & Calculations

All the residential units within the proposed development shall be served via a new connection off the existing 100mm ductile-iron watermain located to the south of the development site extents.

The proposed development comprises of a total of 53no. apartment units.

Based on Irish Water guidelines, the proposed development shall have the following water demand:

- For the residential units:
  - ⇒ 405 l/day per residential unit (based on 2.7 persons per unit x 150l/person/day).
  - ⇒ Average water demand:

    405 l/day per residential unit x 53no. units = 21,465 l/day = 0.248 l/s

⇒ Average day/peak week demand:

0.248 l/s x 1.25 = 0.31 l/s

⇒ Peak water demand (5 times average water demand):

0.31 l/s x 5 = 1.55 l/s

Please refer to CS Consulting Drawing no. **D117-CSC-ZZ-XX-DR-C-0003** for the proposed watermain layout.

2.3 Irish Water Liaison

A Pre-Connection Enquiry for this scheme has been submitted to Irish Water and Confirmation of Feasibility has been received, and a copy of this document is attached in **Appendix A** of this report.

2.4 Design Standards

The proposed development will be designed in accordance with:

- Irish Water Code of Practice for Water Infrastructure.
- Part H of the Building Regulations

3.0 FOUL DRAINAGE

3.1 Existing Foul Drainage Infrastructure

Irish Water drainage records does not indicate any public foul sewers in the close proximity of the development site. However, IW records indicate that there is existing 300mm diameter combined clay sewers along Mercer Street and York Street to the east and south of the development site extents. See **Appendix B** for Irish Water drainage records.

3.2 Proposed Foul Drainage Design & Calculations

The proposed development shall require a new separate foul drainage system to collect and convey the effluent generated by the proposed buildings.

All foul effluent generated by the proposed development shall be collected in 225mm diameter foul pipes and flow under gravity to the proposed combined sewer located in Bow Lane East and connect to existing 300mm combined sewer located in Mercer Street via a new connection.

Based on Irish Water guidelines, the proposed development shall generate the following foul effluent:

- For the residential units:
  - ⇒ 446l/ residential unit (based on 2.7 persons per residential unit x 150l/person/day, + a 10% increase factor).
  - ⇒ Average flow (DWF):

    446l/ residential unit x 53no. units = 23,638 l/day = 0.273 l/s

⇒ Peak Flow (6 x DWF):

0.273 l/s x 6 =1.638 l/s

Please refer to CS Consulting Drawing **D117-CSC-ZZ-XX-DR-C-0002** for proposed foul drainage layouts.

3.3 Irish Water Liaison

A Pre-Connection Enquiry for this scheme has been submitted to Irish Water and Confirmation of Feasibility has been received, and a copy of this document is attached in **Appendix A** of this report.

3.4 Design Standards

The proposed development will be designed in accordance with:

- Irish water Code of Practice for wastewater Infrastructure
- Part H of the Building Regulations

4.0 SURFACE WATER MANAGEMENT PLAN

4.1 Existing Surface Water Drainage Infrastructure

Irish Water drainage records do not indicate any public storm sewers in the close proximity of the development site. However, IW records indicate that there is existing 300mm diameter combined clay sewers along Mercer Street and York Street to the east and south of the development site extents. See **Appendix B** for Irish Water drainage records.

4.2 Proposed Surface Water Drainage Design

4.2.1 Proposed surface water drainage layout and connection

Stormwater from the proposed development shall be attenuated via a stormtech attenuation tank at ground level and blue-green roofs at three separate locations on the roof level. Provided attenuation volume is of order 64m^3 with 47m^3 provided within the stormtech tank and with 17m^3 provided within the blue roof buildup. As there are no dedicated surface water sewers in the vicinity of the subject site, surface water drainage of the proposed development will be discharged into the existing combined sewer located in Mercer Street. Please refer to CS Consulting Drawing **D117-CSC-ZZ-XX-DR-C-0002** for proposed drainage layouts.

Given the above it is worth noting that standard Dublin City Council manhole detail for discharge to combined sewer is included before drainage leaves the site. It is also worth noting that the last private surface water manhole will include a flow control device that will limit the flow to a maximum of 2 l/sec.

4.2.2 Allowable run-off rate and attenuation storage provision

The development is required to retain stormwater volumes predicted to be experienced during extreme rainfall events. This is defined as the volume of storm water generated during a 1-in-100-year storm event, increased by 20% for the predicted effects of climate change.

To ensure an accurate calculation of the development's required attenuation storage volume, the following data were obtained from Met Éireann:

a) the SAAR (Standard Annual Average Rainfall) for the area (810mm/year);

b) the sliding duration table for the site, indicating the 1-in-100-year rainwater intensities to be used; and

c) Soil type value for the subject lands has been established as soil type 2 based on the undertaken desktop study. This value will be reviewed pending the completion of site investigation works.

QBar is calculated as follows:

$$QBAR = 0.00108 \times AREA^{0.89} \times SAAR^{1.17} \times SOIL^{2.17}.$$

The calculated Q-Bar value for the subject site is 0.48 l/sec. To maintain the flow control device free of blockages, however, it is generally recommended to provide an outlet diameter allowing a minimum flow rate of 2.0 l/s through the system. It is therefore proposed to limit stormwater water run-off from the proposed development to a maximum of 2.0 l/s, rather than the greenfield discharge rate of 0.48 l/s.

Based on the adopted run off rate there is a requirement to provide attenuation storage of 60m^3 on-site. It is proposed to provide this attenuation storage through:

- An underground attenuation tank providing a volume of **47m^3**
- Blue-Green roofs providing a total volume of **17m^3**

The overall attenuation storage volume provided of 64m^3 is sufficient to meet the 60m^3 attenuation storage requirements for the proposed development. Refer to **Appendix C** for attenuation calculations.

It is worth noting that in relation to the permeable paving as per the local authority guidance runoff rate from this areas has been taken with the runoff value of 50% in the attenuation calculations.

4.2.3 Summary of Compliance with Criteria 1-4 of GDSDS

The GDSDS and the Regional Code of Practice for Drainage Works require that a development's stormwater drainage arrangements satisfy four main criteria:

- Criterion 1: River Water Quality Protection – satisfied by interception and treatment of run-off within SuDS features as a part of the proposed development design.

- Criterion 2: River Regime Protection - satisfied by limiting the volume of surface water run-off.

- Criterion 3: Level of Service (flooding) for the site – Fluvial flood risk and pluvial flood risk are addressed by the development being designed in accordance with DCC Development Plan and GDSDS. For further detail, refer to the Site Specific Flood Risk Assessment (SSFRA) report submitted under separate cover with this planning application.

- Criterion 4: River Flood Protection – satisfied by providing attenuation storage and limiting the volume of surface water run-off.

4.2.4 Design Standards

i) The Greater Dublin Strategic Drainage Study (GDSDS), Volume 2
ii) The Greater Dublin Regional Code of Practice for Drainage Works
iii) British Standard BS EN 752:2008 (Drains and Sewer Systems Outside Buildings)
iv) Part H of the Building Regulations (Building Drainage).

4.3 Stormwater Interception and Treatment

The Greater Dublin Strategic Drainage Study (GDSDS) recommends calculating stormwater interception and treatment volume requirements as follows:

- *Interception storage*: A minimum of 5mm of rainfall must be captured in the SuDS elements
- *Treatment storage*: If the interception storage requirement is not met, a minimum of 15mm of rainfall must be treated.

The interception volume requirement can be calculated on the basis of 5mm rainfall across the overall site's area proposed for development of approximately 2,200 m^2:

Treatment Volume Required = 2,200m^2 x 0.005m = 11.0 m^3

The development incorporates blue-green roofs, permeable paving, stormtech attenuation tank and soft landscaping; all of which contribute to the interception volume provided on site, as outlined in **Table 1** below:

Table 1 – Interception Volumes Provided

SuDS Measure	Interception (mm/m^2)	Area (m^2)	Volume (m^3)
Green Roofs	10	172	1.72
Permeable Paving	10	626	6.26
Soft Landscaping	5	396	1.98
Stormtech Tank	92	50	4.60
TOTAL			**14.56**

The volume provided of 14.56m^3 satisfies the required interception volume of 11.0m^3.

The GDSDS recommends that if the initial runoff from at least 5 mm of rainfall can be intercepted, additional treatment for runoff (treatment volume) is not required. In this development, the stormwater management measures, including blue-green roofs, permeable paving, stormtech attenuation tank and soft landscaping successfully intercept runoff from at least 5 mm of rainfall. Treatment of the runoff although not required is provide by all above mentioned SuDS elements and it is deemed to be an added benefit to the required interception volume.

4.4 SuDS Design

4.4.1 Proposed SuDS Elements

Refer to CS Consulting drawing **D117-CSC-XX-XX-DR-C-0007** for the proposed development's SuDS layout.

The proposed development shall include a number of Sustainable Drainage Systems (SuDS) measures limiting post-development stormwater run-off to the greenfield discharge rate of the site:

1) Blue-Green roofs

2) Permeable paving

3) Stormtech isolator row

Blue-Green Roofs

Firstly, in relation to the provision of green/blue infrastructure the provision of green/blue roof on the overall roof of the existing building has been reviewed however the implementation of this infrastructure on the full roof area had proven unfeasible. All areas of the roof that have been deemed feasible for blue-green roof infrastructure have been populated with the green-blue roof buildup as illustrated on CS Consulting drawing **D117-CSC-XX-XX-DR-C-0007**. It is also worth noting that given the constraints on provision of the green-blue roof, compensation for the areas on which the integration of green-blue roof had proven unfeasible has been provided in a form of maximisation of the provision of permeable paving and soft landscaping on the proposed development site with all areas within the site apart from the playground and plaza area being covered in either soft landscaping or permeable paving. The green-blue roofs shall retain and attenuate rainfall at source prior to out falling to the public network. (in accordance with Technical Summary of Dublin City Council Green and Blue Roof Guide (2021).

Permeable Paving

Pervious pavements provide a pavement suitable for pedestrian and/or vehicular traffic, while allowing rainwater to infiltrate through the surface and into the underlying structural layers. The water is temporarily stored beneath the over lying surface before use, infiltration to the ground, or controlled discharge downstream.

StormTech Isolator Row

The StormTech Isolator Row is a patented technique to inexpensively improve stormwater quality and provide easy access for inspection and maintenance. By using the StormTech Isolator Row a TSS removal of 80%, a hydrocarbon (diesel) removal of 90%, a total Zinc removal of 53 and a total Phosphorus removal of 49% can be achieved.

The Isolator Row is a row of StormTech chambers that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for setting and filtration of sediment as stormwater rises in the Isolator Row and ultimately passes through the filter fabric. The Open bottom chambers and perforated sidewalls allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row, protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

4.4.2 SuDS Management Train

Through which SuDS is rainwater falling on the below elements going through before discharge.

- Roof of main buildings
- Road and paving
- Footpaths

4.4.3 SuDS Outline Management Plan

The following outline maintenance requirements for the elements of the proposed surface water drainage system:

Attenuation Storage Tank (Stormtech)

The following table provides guidance on the type of operation and maintenance schedule that may be appropriate for an attenuation tank storage. The list of actions is not exhaustive, and some actions may not always be required.

Operation & Maintenance Requirements for Attenuation Storage Tanks		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae, or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays.	Annually, or as required

Remedial Actions	Repair/rehabilitate inlets, outlet, overflows, and vents.	As required
Monitoring	Inspect/check all inlets, outlets, vents, and overflows to ensure that they are in good condition and operating as designed.	Annually
	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required

Permeable Pavement

The following table provides guidance on the type of operation and maintenance schedule that may be appropriate for permeable pavements. The list of actions is not exhaustive, and some actions may not always be required.

Operation & Maintenance Requirements for Pervious Pavements		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most

		likely to collect the most sediment
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation

	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Manholes and Drains

The following table provides guidance on the type of operation and maintenance schedule that may be appropriate for manholes and drains. The list of actions is not exhaustive, and some actions may not always be required.

Operation & Maintenance Requirements for Manholes and Drains		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
	Remove sediment from road gullies.	Annually, or as required
Remedial Actions	Repair/rehabilitate inlets and outlet	As required

Monitoring	Inspect/check all inlets and outlets to ensure that they are in good condition and operating as designed.	Annually

Green-Blue Roof

The following table provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive, and some actions may not always be required. Actual requirements will depend on the planting, the desired aesthetic and visual effect and the biodiversity objectives for the system. Maintenance specifications and schedules should therefore be specified for any individual green-blue roof.

Operation & Maintenance Requirements for Green-Blue Roofs		
Maintenance Schedule	Required Action	Typical Frequency
Regular Inspections	Inspect all components including soil substrate, vegetation, drains, irrigation systems (if applicable), membranes and roof structure for proper operation, integrity of waterproofing and structural stability	Annually and after severe storms
	Inspect soil substrate for evidence of erosion channels and identify any sediment sources	Annually and after severe storms

	Inspect drain inlets to ensure unrestricted runoff from the drainage layer to the conveyance or roof drain system	Annually and after severe storms
	Inspect underside of roof for evidence of leakage	Annually and after severe storms
Regular Maintenance	Remove debris and litter to prevent clogging of inlet drains and interference with plant growth	Six monthly and annually or as required
	During establishment (i.e., year one), replace dead plants as required	Monthly (Usually responsibility of manufacturer)
	Post establishment, replace dead plants as required (where > 5% of coverage)	Annually (in autumn)
	Remove fallen leaves and debris from deciduous plant foliage	Six monthly or as required
	Remove nuisance and invasive vegetation, including weeds	Six monthly or as required
	Mow grasses, prune shrubs and manage other planting (if appropriate) as required – clippings should be removed and not allowed to accumulate	Six monthly or as required

Remedial Actions	If erosion channels are evident, these should be stabilised with extra soil substrate similar to the original material, and sources of erosion damage should be identified and controlled	As required
	If drain inlet has settled, cracked, or moved, investigate and repair as appropriate	As required

If mechanical systems are located on the roof, then spill prevention measures should be exercised to ensure that roof runoff is not contaminated. The mechanical system area should be bunded and provided with separate drainage.

All maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height. Training and guidance information on operating and maintaining the roof should be provided to all property owners and tenants. Safety fastenings will be required for personnel working on the roof. Specific maintenance needs of the green-blue roof should be monitored, and maintenance schedules adjusted to suit requirements.

Access routes to the roof should be designed and maintained to be safe and efficient, and walkways should always be kept clear of obstructions. Secure points for harness attachments should be provided when access near to the roof edges is required.

Appendix A: Correspondence with Irish Water [Pre-connection Enquiry]

CONFIRMATION OF FEASIBILITY

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

Slaven Sose

CS Consulting
19-22 Dame Street
Dublin 2
D02E267
Ireland

26 February 2024

Our Ref: CDS24000999 Pre-Connection Enquiry
Site at, Glovers Court, York Street, Dublin

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 53 unit(s) at Site at, Glovers Court, York Street, Dublin, (the **Development)**.

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

- **Water Connection** - Feasible without infrastructure upgrade by Irish Water

- The proposed Development indicates that Uisce Éireann assets are present on the site. The Developer has to demonstrate that proposed structures and works will not inhibit access for maintenance or endanger structural or functional integrity of the assets during and after the works. For design submissions and queries related to diversion/build near or over, please contact UÉ Diversion Team via email address diversions@water.ie

- **Wastewater Connection** - Feasible without infrastructure upgrade by Irish Water

- The Development has to incorporate Sustainable Drainage Systems/ Attenuation in the management of storm water and to reduce surface water inflow into the receiving combined sewer. Full details of these have to be agreed with the LA Drainage Division.

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/

Where can you find more information?

- **Section A -** What is important to know?
- **Section B -** Details of Uisce Éireann's Network(s)

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

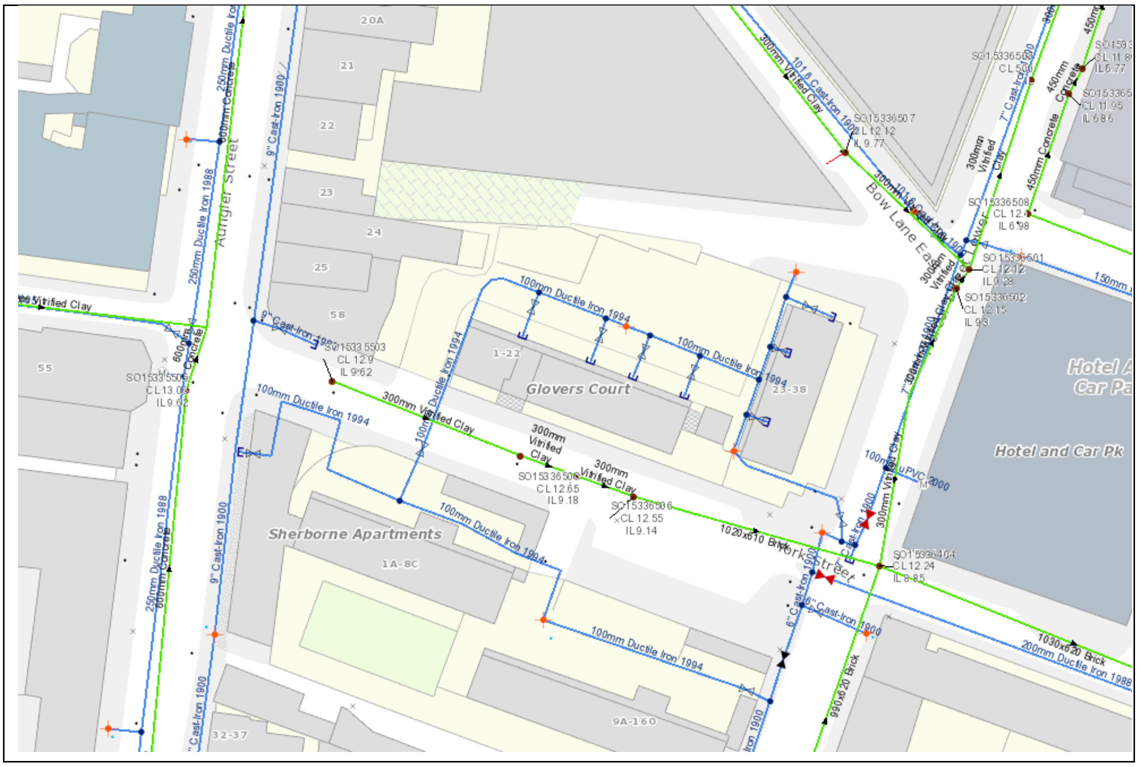
Section A - What is important to know?

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)

Section B – Details of Uisce Éireann’s Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie



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Note: The information provided on the included maps as to the position of Uisce Éireann’s underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann’s network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann’s underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann’s underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

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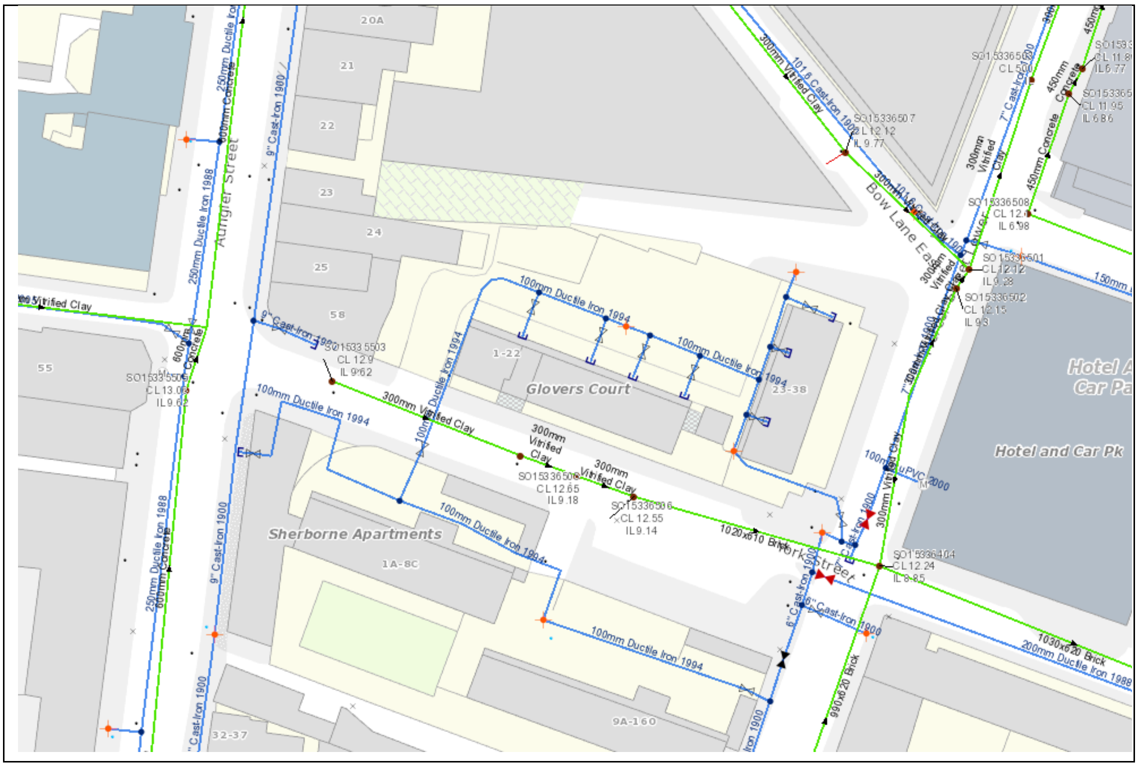
Appendix B: Existing Irish Water & Local Authority Record Plans

Section B – Details of Uisce Éireann’s Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie



Note: The information provided on the included maps as to the position of Uisce Éireann’s underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann’s network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann’s underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann’s underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

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Appendix C: Attenuation Calculations

Project:	Glover's Court
Project No.:	D117
Calculation:	Attenuation 100-year
Calcs By:	AC
Checked By:	SS
Date:	24/07/2025

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DUBLIN - LONDON - LIMERICK

Site Location:	Dublin		
Design Storm Return Period:	100 years		
Climate Change Factor:	20 %		
Soil Type:	2		
Total Site Area:	0.22 ha		
Hardstand Area:	0.11 ha	............@	80% Impervious
Permeable Paving:	0.06 ha	............@	50% Impervious
Softstand Area:	0.04 ha	............@	20% Impervious
Effective Impermeable Area:	0.13 ha		

Allowable Outflow	**Calculate**		
IH124: QBAR = 0.00108 x $AREA^{0.89}$ x $SAAR^{1.17}$ x $SOIL^{2.17}$			
AREA:	0.00 km^2		
SAAR:	810 mm		
SOIL:	0.3		
QBAR/ha	2.16 l/s/ha		
Allowable Outflow	**2.00 l/s**	Smallest Allowable Discharge Rate	2 l/s

Storage required =	**60 m^3**

Duration (min)	Rainfall 100-Year (mm)	Rainfall 100-Year with CCF (mm)	Intensity (mm/hr)	Discharge (Q = 2.78iA) (l/s)	Proposed Runoff (m^3)	Contiguous Land Runoff (m^3)	Total Runoff (m^3)	Allowable Outflow (m^3)	Storage Required (m^3)
2	0.0	0.0	0.0	0	0	0	0	0	0
5	14.7	17.6	211.7	77	23	0	23	1	23
10	20.5	24.6	147.6	54	32	0	32	1	31
15	24.2	29.0	116.2	42	38	0	38	2	36
30	29.9	35.9	71.8	26	47	0	47	4	44
60	37.0	44.4	44.4	16	58	0	58	7	51
120	45.7	54.8	27.4	10	72	0	72	14	58
180	51.7	62.0	20.7	8	81	0	81	22	60
240	56.5	67.8	17.0	6	89	0	89	29	60
360	63.9	76.7	12.8	5	101	0	101	43	57
540	72.4	86.9	9.7	4	114	0	114	65	49
720	79.1	94.9	7.9	3	125	0	125	86	38
1080	89.5	107.4	6.0	2	141	0	141	130	11
1440	97.7	117.2	4.9	2	154	0	154	173	-19
2880	107.7	129.2	2.7	1	170	0	170	346	-176
4320	116.8	140.2	1.9	1	184	0	184	518	-334
5760	125.2	150.2	1.6	1	197	0	197	691	-494
8640	140.2	168.2	1.2	0	221	0	221	1037	-816
11520	153.7	184.4	1.0	0	242	0	242	1382	-1140
14400	166.1	199.3	0.8	0	262	0	262	1728	-1466
17280	177.7	213.2	0.7	0	280	0	280	2074	-1794
23040	199.2	239.0	0.6	0	314	0	314	2765	-2451
28800	219.0	262.8	0.5	0	345	0	345	3456	-3111
36000	242.1	290.5	0.5	0	382	0	382	4320	-3938

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