



Coughlan Consulting Engineering

Consulting Structural & Civil Engineering
25 Kiltipper Avenue, Aylesbury, Tallaght, Dublin 24.
T 086 3872337 / E robertcoughlan@ymail.com

22042

30th September 2022

SD22A/0047 Additional Information for 41 Watermeadow Park, Old Bawn, Dublin 24

Coughlan Consulting Engineering have been appointed by McNeveion Design through Adam and Rhian Riordan to provide Civil Engineering Services on an Additional Information request to Planning Permission Application SD22A/0047. Item 3-7 will be addressed in this submission.

Item 3

(b) There is a lack of SuDS (Sustainable Drainage Systems) shown for the proposed development. Natural SUDS features shall be incorporated into the proposed drainage system. The SUDS shall be an integrated multi-disciplinary approach which locally addresses water quality, water quantity, and provides for amenity and biodiversity enhancement which meets the objectives of South Dublin County Council Development Plan 2016-2022. The applicant is requested to submit the following:

(a) A drawing to show how surface water shall be attenuated to greenfield run off rates.

Response: Please see attached Drawing Number 22042-DRG 100.

The request for Additional Information asks that the discharge rate (of surface water) from site shall be limited to green field run off rates.

<http://www.uksuds.com/drainage-calculation-tools/greenfield-runoff-rate-estimation> was used to calculate the Greenfield Run Off Rate. The greenfield runoff rate for this site would be circa 0.15l/s. Coughlan Consulting Engineering believe it is not physically possible to restrict flows to this rate and would potentially pose a flooding risk as the risk of blockage in the system would be very high.

(b) Submit a drawing to show what SuDS (Sustainable Drainage Systems) are proposed. Examples of SuDS include permeable paving, filter drain planter boxes or other such SuDS.

Response: Please see attached Drawing Number 22042-DRG 100.

- 1) Grassed areas will be provided as outlined on Drawing Number 20042-DRG 100.
- 2) Permeable paving will be provided on the remaining ground level hardstanding of the development in both trafficked and hard standing areas
- 3) 1 No 210l water butt will be provided on the rainwater downpipe which will cater for a portion of the roof run off.
- 4) It is then proposed to introduce a Surface Water Filter Drain along the full length of the permeable area to the rear and grassed area to the south which allows attenuation into the soil. A typical detail of the proposed filter drain can be found on Drawing Number 22042-DRG 100.
- 5) Any additional Surface Water will then pass through a new Surface Water manhole before connecting into the main Surface Water network on Watermeadow Drive.
- 6) This proposal ensures that the existing private drain network at the rear of the dwellings adjacent to the houses will not be required to cater for additional loading

(c) SUDs Management - The applicant is requested to submit a comprehensive SUDS Management Plan to demonstrate that the proposed SUDS features have reduced the rate of run off into the existing surface water drainage network. A maintenance plan should also be included as a demonstration of how the system will function following implementation.

Response: The maintenance plan of the Suds system will be generally straight forward as this system is serving 1 house.

- 1) The property owner will be briefed that the waterbutt rainwater should be used regularly to water gardens, clear cars etc.
- 2) There will be a silt trap in each of the 2 surface water AJ's in the rear and side of the back garden. This will assist removing silt that comes off the roof structure. These silt traps should be cleaned every 6 months.
- 3) The AJ's have been positioned that the filter drain can be easily rodded if required.
- 4) The permeable paving will require the joints in the pavings to remain clean and free of silt and debris. The property owner will be briefed that the paving needs to be regularly swept and power wash cleaned on a yearly basis.

Item 4

There are no soil percolation test results, design calculations or dimensions submitted for the proposed soakaway. The applicant is requested to submit a report showing site specific soil percolation test results and design calculations for the proposed soakaway in accordance with BRE Digest 365 – Soakaway Design.

Response: A soakaway system was suggested by McNevin Design is the original Planning Submission. This form of attenuation works very well subject to favourable infiltration rates.

Coughlan Consulting Engineering were appointed in August 2022 and requested an Infiltration Test be carried out. A test hole in accordance with BRE Digest 365 was dug and filled with water to $\frac{3}{4}$ height with the time taken to be observed for the hole to empty to $\frac{1}{4}$ full. This test was to be repeated 2 further times.

The water in the test dropped 100mm in 10 hours of observing. Coughlan Consulting Engineering terminated the testing and confirmed that the infiltration rate is too slow and that a Soakaway will not be suitable on the site. The surface water drainage system has been redesigned as per 22042-DRG 100

Item 5

The applicant is requested to submit a revised drawing showing plan and cross-sectional views, dimensions, and location of proposed soakaway. Any proposed soakaway shall be located fully within the curtilage of the property and shall be:

- (i) At least 5m from any building, public sewer, road boundary or structure.
- (ii) Generally, not within 3m of the boundary of the adjoining property.
- (iii) Not in such a position that the ground below foundations is likely to be adversely affected.
- (iv) 10m from any sewage treatment percolation area and from any watercourse / floodplain.
- (v) Where possible Soakaways must include an overflow connection to the surface water drainage network.

Response: Please see Item 4 above explaining why a soakaway will not be proposed in the site.

Item 6

The applicant is requested to submit a flood risk report to show what if any flood risk there is for proposed development. If there is a flood risk on the site then show in a report and drawing what measures are proposed to mitigate against such flooding. All floor levels shall be a minimum of 500mm above the highest known flood level for the site.

Response: Please see separate Site Specific Flood Risk Assessment for the development carried out by Coughlan Consulting Engineering. In summary CFRAMS Flood Extent Maps were consulted to establish the Flood Zone. It was determined that the proposed development site is currently located in Flood Zone C for fluvial and coastal flooding. The proposed development is therefore considered to be at a low risk of flooding and is deemed appropriate for the site.

The proposed Finished Floor Level for the ground floor of the dwelling will be 150mm above external ground level.

Item 7

7. The applicant has not submitted water supply drawings or foul water drainage plans for the proposed development. The applicant is requested to submit a drawing in plan showing the existing and proposed water supply layout for the development and foul water drainage layouts up to and including the point of connection to the public foul water sewer, including the location of all AJs, manholes, pipe size, material type and direction of flow. Maps of the public watermains and Wastewater drainage networks may be obtained, if available, for required locations in by emailing:

datarequests@water.ie. All proposals are to comply with the Irish Water Standard Details for Water Infrastructure available at (<https://www.water.ie/connections/Water-Standard-Details.pdf>). Prior to the commencement of development the applicant or developer shall enter into water and wastewater connection agreement(s) with Irish Water.

Response: Please see attached 22042-DRG 100 for details of the separate foul and surface water drainage systems. Both the foul and surface water systems will discharge directly into the main network street systems. This proposal ensures that the existing private drain network at the rear of the dwellings adjacent to the houses will not be required to cater for additional loading.

Record drainage maps can be found in Appendix B.

For and on behalf of: Coughlan Consulting Engineering
25 Kiltipper Avenue,
Aylesbury,
Tallaght,
Dublin 24.

Robert Coughlan

Signed: _____

Name: Robert Coughlan
Qualifications: BE, CEng, MIEI, MISTuctE, BER Assessor.
Professional Body/Membership No. MIEI No.: 053927

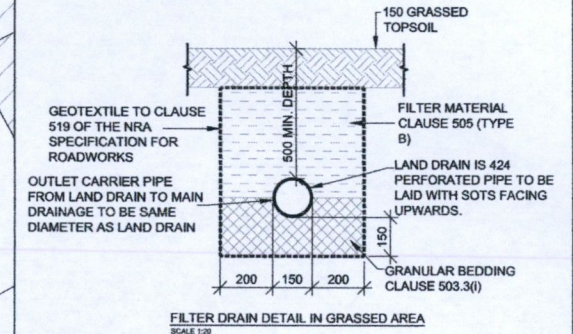
Appendix A: Drawing Number 20042-DRG 100

DRAWING STATUS

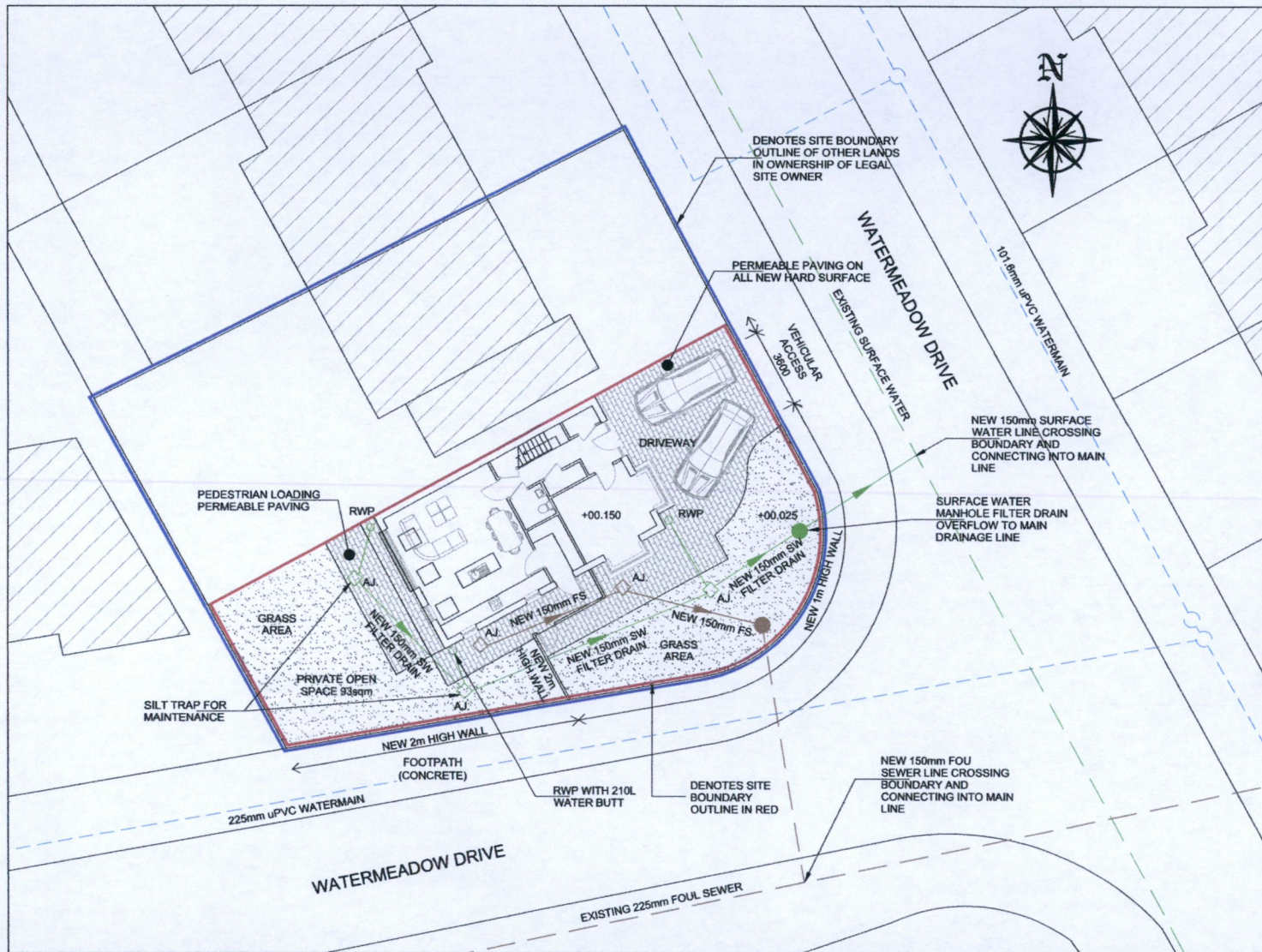
FOR PLANNING

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS.
2. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE. ENGINEER TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.



NOTE
FILTRATION RATES ARE NOT SUITABLE FOR SOAKAWAY



PROPOSED DRAINAGE PLAN

SCALE: 1:200

LEGEND

---	EXISTING FOUL WATER SEWER	○	EXISTING FOUL SEWER MANHOLE	A.J. ◇	PROPOSED FOUL A.J.
---	EXISTING SURFACE WATER	○	EXISTING SURFACE WATER MANHOLE	A.J. ◇	PROPOSED SURFACE WATER A.J.
---	EXISTING WATERMAIN	●	PROPOSED FOUL SEWER MANHOLE	RWP ○	RAIN WATER PIPE
---	PROPOSED FOUL SEWER PIPE	●	PROPOSED SURFACE WATER MANHOLE		
---	PROPOSED SURFACE WATER PIPE	⊕	HYDRANT		
---	PROPOSED NEW WATERMAIN				

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25 Kiltipper Avenue
Aylesbury
Tallaght
Dublin 24



Tel: 086 3872337

EMAIL: robertcoughlan@gmail.com

Drawing Status
FOR PLANNING

Project
No. 41 Watermeadow Park Oldbawn,
Dublin 24, D24 CH7V

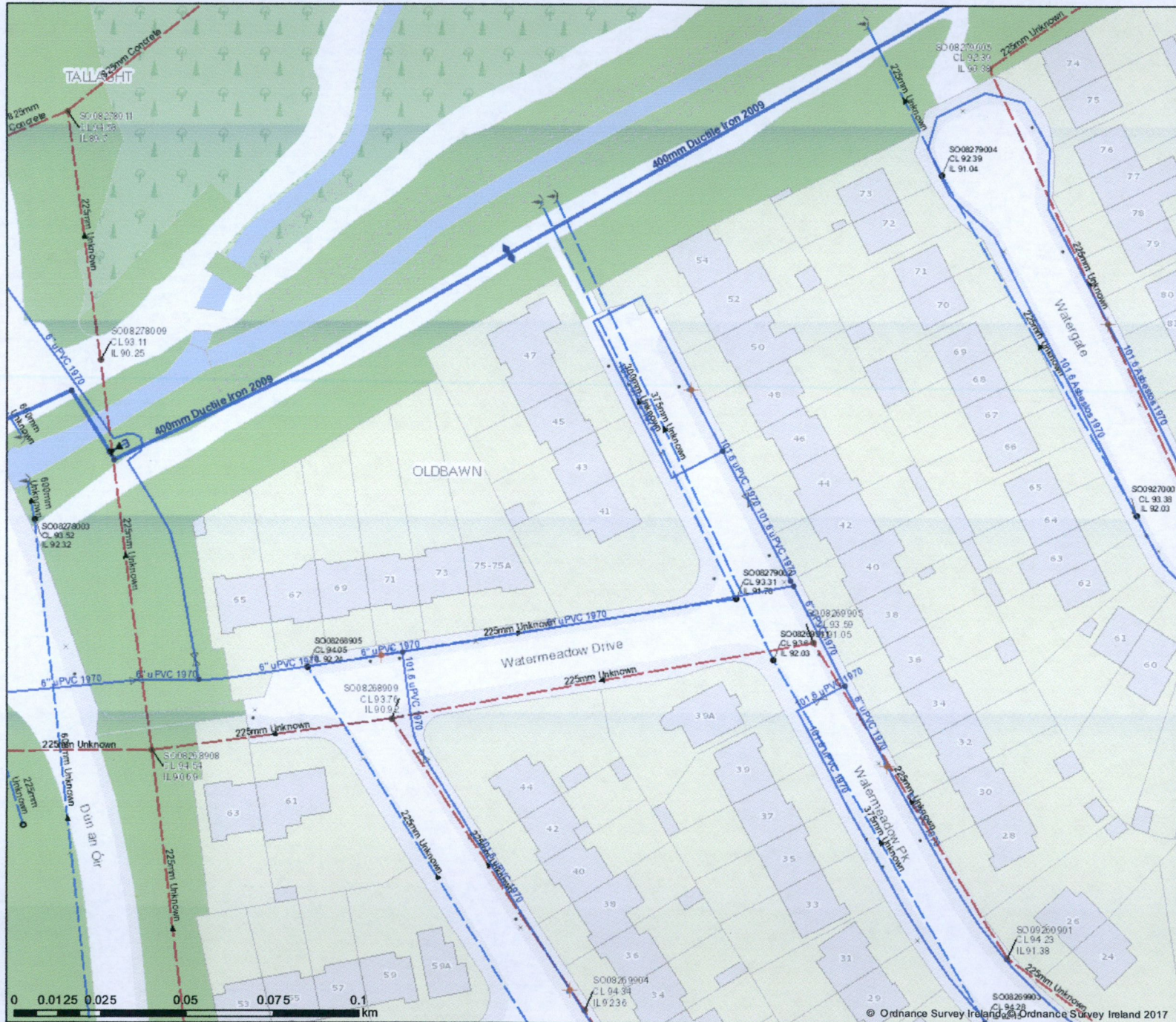
Client

Title
Proposed Drainage Plan

scale	date	drawn	chk.	job.no.	drg.no.	Rev.
1:200 A3	SEP 22	LB	RC	22042	100	

Appendix B: Drainage Record Maps

Irish Water Web Map



UISCE
EIREANN · IRISH
WATER

Print Date: 21/09/2022

Printed by: Irish Water

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2. Whilst every care has been taken in its compilation, Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantee, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information should not be relied upon in the event of excavations or any other working carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network 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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NOTE: DIAL BEFORE YOU DIG Phone: 1850 427 747 or e-mail dig@gasnetworks.ie - The actual position of the gas/electricity distribution and transmission network must be verified on site before any mechanical excavating takes place. If any mechanical excavation is proposed, hard copy maps must be requested from GNI re gas. All work in the vicinity of gas distribution and transmission network must be completed in accordance with the current edition of the Health & Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (1890 28 93 89) or can be downloaded free of charge at www.hsa.ie

Water Distribution Networks	Sewer/Combined Networks	Storm Water Network
<ul style="list-style-type: none"> Water Treatment Plant Storage Cell/Tower Dosing Point Water Meter Abstraction Point Telemetry Kiosk Reservoir Potable Raw Water Water Distribution Mains Trunk Water Mains Water Lateral Lines Water Casings Water Abandoned Lines Boundary Meter Sub-Check Meter Group Scheme Source Meter Waste Meter Unknown Meter - Other Meter Non-Return PRV PSV Slack Line Valve Open/Closed Butterfly Line Valve Open/Closed Slack Boundary Valve Open/Closed Butterfly Boundary Valve Open/Closed Stop Valve Single Air Control Valve Double Air Control Valve Water Stop Valves Water Service Connections Water Distribution Chambers Water Network Junctions Pressure Monitoring Point Fire Hydrant Fire Hydrant/Washout Water Fittings Cap Reducer Tap Other Fittings 	<ul style="list-style-type: none"> Waste Water Treatment Plant Waste Water Pump Station Sewer Mains Irish Water Gravity - Combined Gravity - Unknown Pumping - Combined Pumping - Foul Pumping - Unknown Syphon - Combined Syphon - Foul Overflow Sewer Mains Private Gravity - Combined Gravity - Foul Gravity - Unknown Pumping - Combined Pumping - Foul Pumping - Unknown Syphon - Combined Syphon - Foul Overflow Sewer Lateral Lines Sewer Casings Sewer Manholes Standard Backdrop Cascade Catchpit Staircase Hatchbox Lampbox Hydrobrake Other, Unknown Storm Clean Outs Stormwater Chambers Discharge Type Outfall Overflow Soakaway Other, Unknown Gas Networks Ireland Transmission High Pressure Gasline Distribution Medium Pressure Gasline Distribution Low Pressure Gasline ESB Networks ESB HV Lines MV Underground HV Overhead HV Abandoned ESB MV/LV Lines MV Overhead Three Phase MV Overhead Single Phase LV Overhead Three Phase LV Overhead Single Phase MV/LV Underground Non-Service Gaslines Proposed Under Construction Out of Service Discommissioned Water Non-Service Assets Water Point Feature Water Pipe Water Structure Waste Non-Service Assets Waste Point Feature Sewer Waste Structure 	<ul style="list-style-type: none"> Surface Water Mains Surface Gravity Mains Surface Water Pressurised Mains Surface Water Pressurised Mains Private Inlet Type Gully Standard Other, Unknown Storm Manholes Standard Backdrop Cascade Catchpit Staircase Hatchbox Lampbox Hydrobrake Other, Unknown Storm Clean Outs Stormwater Chambers Discharge Type Outfall Overflow Soakaway Other, Unknown Gas Networks Ireland Transmission High Pressure Gasline Distribution Medium Pressure Gasline Distribution Low Pressure Gasline ESB Networks ESB HV Lines MV Underground HV Overhead HV Abandoned ESB MV/LV Lines MV Overhead Three Phase MV Overhead Single Phase LV Overhead Three Phase LV Overhead Single Phase MV/LV Underground Non-Service Gaslines Proposed Under Construction Out of Service Discommissioned Water Non-Service Assets Water Point Feature Water Pipe Water Structure Waste Non-Service Assets Waste Point Feature Sewer Waste Structure