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Proposed Development
Main Street, Rathcoole, Co. Dublin

Design of Site Development Works

Status	Author	Approved by	Issue Date
Draft	AG	AG	01/11/2021
Planning	AG	AG	12/01/2022

Contents

1. Introduction

This report has been prepared by EDPM Consulting Engineers to accompany a Planning Application submission to South Dublin County Council for the construction of a residential development at Main Street, Rathcoole, Co. Dublin

The purpose of this report is to describe the proposed civil engineering infrastructure for the development and how it connects to the public infrastructure serving the area. It will also demonstrate the compliance and adequacy of the proposed Site Development Works.

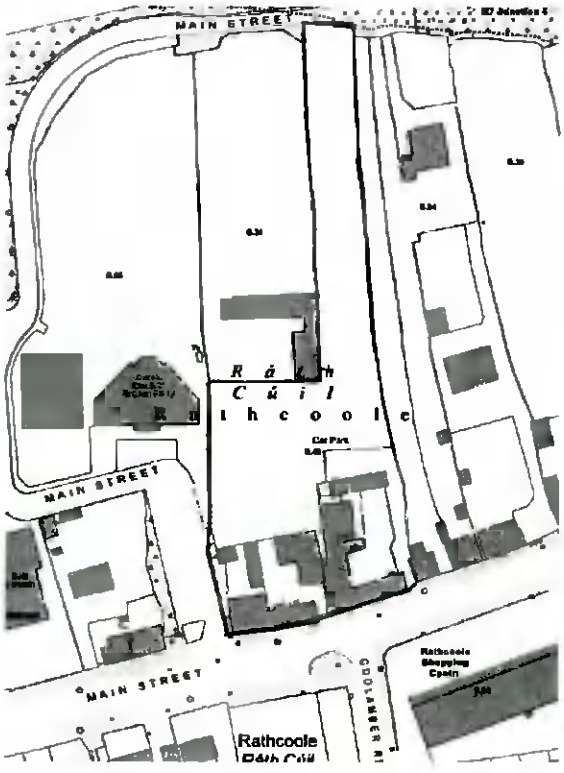
The proposed designs are based on layouts provided by Downey Associates.

This report should be read in conjunction with the following drawings submitted with the planning application:

- P-100 Proposed Roads Layout and Levels
- P-101 Proposed Foul Sewer and Storm Drain Layout
- P-102 Proposed Watermain Layout
- P-103 Proposed Road Sections and Details
- P-104 Turning Movements, Road Signs and Road Markings
- P-105 Proposed Storm Drain and Foul Sewer Sections
- P-106 Hydrobrake and Attenuation Storage Details

2. Site

The site is located in the centre of Rathcoole, it has a long narrow aspect with a north-south orientation. It is currently used as a commercial premises with customer parking to the rear. The site is in a mature urban setting with existing buildings and infrastructure on adjacent sites.

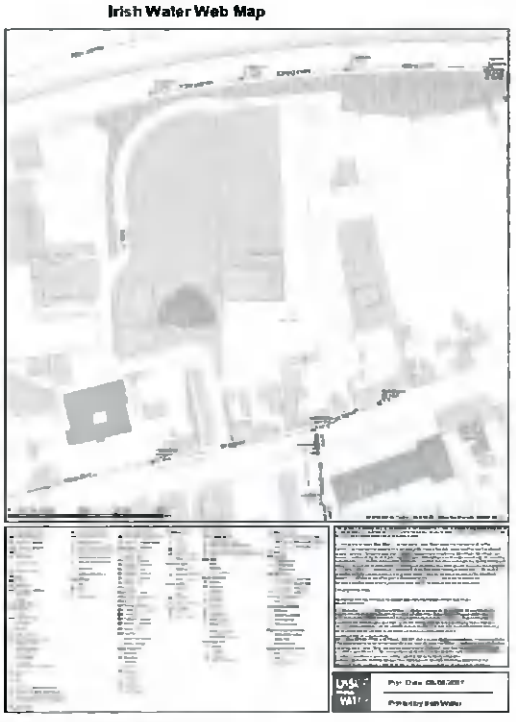


3. Existing Services

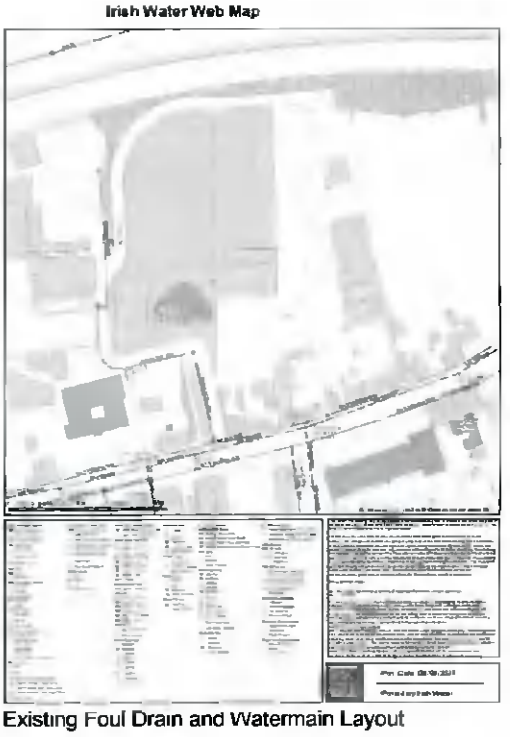
From mapping provided by South Dublin County Council, there are existing services adjacent to the site.

There is an existing 250mmØ storm drain and existing 300mmØ foul sewer in the public domain off the southern boundary of the site. There is also an existing 100mmØ uPVC watermain off the western boundary of the site.

Below are maps provided by SDCC showing the arrangement of the existing services.



Existing Storm Drain Layout



Existing Foul Drain and Watermain Layout

The information on these maps (existing cover levels, inverts levels and diameters) are considered reliable and are used in the design of the proposed connections.

There may be other undocumented services and the area should be fully investigated post planning.

4. Development Access, Roads and Parking

Access to the proposed development will be taken off the existing carriageway leading to the school and church (which is a cul-de-sac). The proposed access point is at the location of the existing access to the car park to the rear of the public house.

The new entrance will have 23m visibility splays and a 6m kerb radius throat leading into a 5.5m wide carriageway which is sufficient to local roads and will allow two vehicles to pass. A stop sign (RUS 027) and road markings will be provided at the entrance as per the Traffic Signs Manual. Also a TSAN slow sign will be provided as per the Department of Transport advice note (see drawings P-100 and P-104).

Swept path analysis for cars parking and refuse/fire engines turning are provided and these demonstrate these movements are provided for (see drawing P-104).

There are 31 proposed car parking spaces and 1 disabled space. It is proposed to provide pedestrian access from the Main Street off the western boundary, leading into 1.8m footpaths internally.

5. Proposed Storm Drainage System

It is proposed to have a separate surface water system to the point of connection to the existing public drain. This system will collect run-off from proposed roofs and hard-surfaces, and soft landscaping. It is assumed that run-off from some of the existing roofs fronting onto the Main Street discharge into the existing drainage system.

5.1 Compliance

The surface water drainage system will be designed in accordance with the principles of Sustainable Urban Drainage Systems (SUDS) as recommended in the Greater Dublin Strategic Drainage Study (GDSDS). This requires sustainable designs to comply with a set of drainage criteria which minimises the impact of the built environment by ensuring run-off characteristics match that of a greenfield site. These criteria are:

- C1 – River Water Quality Protection
- C2 – River Regime Protection
- C3 – Flood Risk Assessment from Site Works
- C4 – River Flood Protection

The following calculations will show the proposed discharge from the development and the attenuation required for a 30 year event and the analysis of a 100 year event.

The calculations are in compliance with

1. Dublin Corporation Stormwater Management Policy/ Technical Guidelines (DCSMP/TG).
2. Dublin Corporation Stormwater Management Policy for Developers (DCSMP/DEV).
3. Sustainable Urban Drainage Systems (SUDS) CIRIA C521.
4. BS 8310 and BS EN 752, where applicable

The following measures are proposed to ensure compliance with best practice:

- Attenuation of storm water discharging from the development to reduce peak flows and reduce the risk of possible downstream flooding. The outflows from the storm water attenuation facility will be controlled by a hydro-brake device.
- Provision of 'gas trapped' gullies and oil interceptors within the development to reduce the possible effects of oil spillage, siltation and 'first flush' pollution of the outfall sewer.

It is intended to limit the storm water outflow from the site to that recommended by the Greater Dublin Strategic Drainage Study (GDSDS).

- Attenuation should be restricted the Q_{bar} value as recommended by the above mentioned DCSMP/DEV and in particular the Institute of Hydrology report No. 124.
- The attenuation volume should be designed for a 1 in 30 year event
- The 1 in 100 year event should be contained within the site

Data for extreme rainfall return periods was obtained from Met. Éireann. Data is also taken from Site Development Works for Housing Areas (SDW).

See drawing P-101 for the layout arrangement and drawings P-105 and P-106 for sections and levels.

5.2 Site Areas and Flow Rates

The overall are of the site is 5757m^2 or 0.5757 hectares. The surface water capture area is made up of the following:

Location	Plan Area m^2	Permeability	Effective Area m^2
Roofs	1132.5*	0%	1132.5
Soft Landscaping	1264.4	90%	126.4
Roads and Footpaths	2863	10%	2576.7
Total	**5259.9**		**3835.6**

Table 5 Schedule of areas for proposed surface water run-off
* this takes into account 50% of existing roof run-off discharges to the existing system

The above areas are used to calculate the attenuation volumes.

From Site Development Works DOELG, $Q = 2.78A_piC_rC_v$ where A_p is the given area in hectares, i = rainfall intensity = 75mm/hour for roofs and 50mm/hours for all other areas. C_r is a routing constant taken as 1.3 and C_v is a volumetric coefficient taken as 0.6.

The flow rates are as follows

Q_{roof} = 2.78 x (1132.5/10000) x 75 x 1.3 x 0.6 = 18.4 l/s

Q_{roads} = 2.78 x (2576.7/10000) x 50 x 1.3 x 0.6 = 28 l/s

Q_{soft} = 2.78 x (126.4/10000) x 50 x 1.3 x 0.6 = 1.4 l/s

Q_{total} = 47.8 l/s or 0.05 m^3/s

Check adequacy of the outfall discharge pipe 300mm diameter at 1:200 (Cole-Brook White)

$v = -2(2x0.3x9.81x(1/200))^{1/2} \times \log(0.0006/(3.7x0.03)) = 1.58$ m/s

At ¾ capacity this has an allowable flow rate of

$Q_{3/4} = (\pi \times 0.3^2)/4 \times 1.58 \times 0.75 = 0.084$ m/s^3 = 84 l/s which is adequate.

The outfall pipes provided will be 300mmØ at minimum falls of 1:200.

5.3 River Water Quality Protection Criteria C1

Urban run-off from almost every rainfall event when drained by pipe systems results in high levels of pollution, particularly in the first phase of run-off. To prevent this, Criteria C1 requires that interception storage is provided for the first 5mm of rainfall from the development captured and retained on site (CIRIA C753).

The effective site area is 3835.6m^2, resulting in an interception storage of

3835.6 x 0.005 = 19.2m^3

This will be incorporated into the proposed attenuation storage system.

5.4 River Regime Protection Criteria C2

To manage high flows and maintain green field flow rates discharging to the existing surface infrastructure (and eventually to a river/stream), attenuation storage is provided. This will limit the flow from the site to its current undeveloped state and ensure that receiving infrastructure is not overwhelmed.

The limiting discharge from the site, Q_{bar}, is calculated as follows:

For site areas less than 24 hectares, $Q_{bar} = 0.00108(Area)^{0.89}(SAAR)^{1.17}.(Soil)^{2.17}$ (IOH report 124), where SAAR is the standard annual average rainfall (for Rathcoole = 832mm) and Soil is an index taken as 0.3.

$Q_{bar} = 0.00108.(5757x10^{-6})^{0.89}.(832)^{1.17}.(0.3)^{2.17} = 0.00209m^3/s$ (2.09 l/s, 0.125m^3/min) or 3.63 l/s/ha. This will be the design limit placed on the hydrobrake.

5.5 Flood Assessment Criteria C3

This is an assessment of flooding as a result of rainfall events on the proposed development as opposed to a Flood Risk Assessment of the site from external sources other than the proposed drainage system (contained in a separate report).

The following tables are an analysis of the 30 and 100 year events for given rainfall durations and amounts. These are multiplied by 10% to allow for a climate change factor.

The following table is the **30 year** event

Duration	Rainfall (mm)	Rainfall x 1.1 climate change factor	Effective Area (m^2)	Peak Discharge (m^3)	Limiting Discharge (m^3) at 0.125 m^3/min	Attenuation Volume (m^3)
15	22.3	24.5	3835.6	94.1	1.9	92.2
30	33.1	36.4		139.7	3.8	135.9
60	41.8	46.0		176.4	7.5	168.9
120	45.5	50.1		192.0	15.0	177.0
240	57.5	63.3		242.6	30.0	212.6
360	66	72.6		278.5	45.0	233.5
720	83.6	92.0		352.7	90.0	262.7
1440	106	116.6		447.2	180.0	267.2
2880	118.7	130.6		500.8	360.0	140.8

Limiting Discharge m^3/min = 0.125

Maximum volume for 30 year event m^3 = 267.2

The following table is the **100 year** event

Duration	Rainfall (mm)	Rainfall x 1.1 climate change factor	Hardstand area (m^2)	Peak Discharge (m^3)	Limiting Discharge (m^3) at 0.125 m^3/min	Attenuation Volume (m^3)
15	32.6	35.9	3835.6	137.5	1.9	135.7
30	41	45.1		173.0	3.8	169.2
60	51.5	56.7		217.3	7.5	209.8
120	64.7	71.2		273.0	15.0	258.0
240	81.2	89.3		342.6	30.0	312.6
360	92.8	102.1		391.5	45.0	346.5
720	116.6	128.3		492.0	90.0	402.0
1440	146.5	161.2		618.1	180.0	438.1
2880	159.5	175.5		673.0	360.0	313.0

Limiting Discharge m^3/min =	0.125	
Maximum volume for 100 year event m^3 =		438.1
Over flow volume m^3 =	170.9	

Given the deposition of the proposed development and the topography and shape of the site, it is difficult to contain the overflow volume within the boundaries of the site. Therefore the attenuation storage will be sized to capture the 100 year event.

The pluvial volume will also be included giving an overall volume of 19.2 + 438.1 =457.3m^3.

It is proposed to use a prefabricated system such as Stormcell which has 95% free volume, resulting in an overall size of 481.4m^3.

The attenuation storage will be split into two volumes linked with a 225mmØ pipe. The storage will have a 1/300 fall in its base and the highest top level of the storage will be 116.77m. The lowest floor level of any of the proposed buildings is 117.33m which is greater than 500mm above the 100 year event (storage at capacity). The nearest building to the storage has a floor level of 117.92m, again 500mm above the 100 year event.

The table below is the return period rainfall data from Met Eireann, the information therein was used to calculate the attenuation volumes above.

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 302339, Northing: 226818,

DURATION	Interval 6months,	1year,	Years 2,	3,	4,	5,	10,	20,	30,	50,	75,	100,	150,	200,	250,	500,
5 mins	2.7,	4.1,	4.8,	6.0,	6.7,	7.4,	9.5,	11.9,	13.6,	16.0,	18.2,	19.9,	22.6,	24.7,	26.5,	N/A ,
10 mins	3.8,	5.7,	6.7,	8.3,	9.4,	10.3,	13.2,	16.6,	19.0,	22.3,	25.3,	27.7,	31.5,	34.4,	36.9,	N/A ,
15 mins	4.5,	6.7,	7.9,	9.8,	11.1,	12.1,	15.5,	19.6,	22.3,	26.2,	29.8,	32.6,	37.0,	40.5,	43.4,	N/A ,
30 mins	5.9,	8.7,	10.2,	12.6,	14.2,	15.5,	19.8,	24.9,	28.3,	33.1,	37.5,	41.0,	46.4,	50.6,	54.2,	N/A ,
1 hours	7.7,	11.3,	13.2,	16.3,	18.3,	19.9,	25.3,	31.6,	35.8,	41.8,	47.2,	51.5,	58.1,	63.3,	67.6,	N/A ,
2 hours	10.1,	14.7,	17.2,	21.0,	23.6,	25.6,	32.4,	40.2,	45.4,	52.8,	59.5,	64.7,	72.8,	79.1,	84.4,	N/A ,
3 hours	11.9,	17.1,	20.0,	24.4,	27.3,	29.7,	37.4,	46.2,	52.1,	60.5,	68.0,	73.9,	83.0,	90.1,	96.1,	N/A ,
4 hours	13.3,	19.1,	22.3,	27.1,	30.4,	32.9,	41.4,	51.0,	57.5,	66.6,	74.8,	81.2,	91.1,	99.9,	105.3,	N/A ,
6 hours	15.6,	22.3,	25.9,	31.4,	35.2,	38.1,	47.7,	58.7,	66.0,	76.4,	85.6,	92.8,	104.0,	112.7,	119.9,	N/A ,
9 hours	18.3,	26.0,	30.2,	36.5,	40.8,	44.1,	55.1,	67.5,	75.8,	87.5,	98.0,	106.1,	118.6,	128.4,	136.5,	N/A ,
12 hours	20.5,	29.0,	33.6,	40.6,	45.3,	48.9,	60.9,	74.6,	83.6,	96.4,	107.8,	116.6,	130.2,	140.8,	149.6,	N/A ,
18 hours	24.0,	33.9,	39.2,	47.1,	52.5,	56.7,	70.3,	85.8,	96.1,	110.5,	123.3,	133.2,	148.6,	160.5,	170.4,	N/A ,
24 hours	26.9,	37.8,	43.6,	52.4,	58.3,	62.9,	77.8,	94.8,	106.0,	121.7,	135.7,	146.5,	163.1,	176.1,	186.8,	224.4,
2 days	34.0,	46.3,	52.8,	62.4,	68.8,	73.7,	89.6,	107.2,	118.7,	134.7,	148.7,	159.5,	176.0,	188.7,	199.2,	235.4,
3 days	39.7,	53.3,	60.3,	70.6,	77.4,	82.6,	99.3,	117.7,	129.6,	145.9,	160.3,	171.2,	187.9,	200.7,	211.2,	247.3,
4 days	44.9,	59.4,	66.8,	77.7,	84.9,	90.4,	107.9,	126.9,	139.1,	156.0,	170.6,	181.8,	198.7,	211.6,	222.2,	258.5,
6 days	53.9,	70.1,	78.4,	90.3,	98.1,	104.0,	122.8,	143.0,	155.9,	173.6,	188.8,	200.4,	217.8,	231.1,	241.9,	278.8,
8 days	62.0,	79.7,	88.6,	101.4,	109.7,	116.0,	135.9,	157.2,	170.7,	189.0,	204.8,	216.8,	234.7,	248.3,	259.4,	297.0,
10 days	69.5,	88.4,	97.9,	111.5,	120.3,	127.0,	147.8,	170.0,	184.0,	203.0,	219.3,	231.6,	250.1,	264.0,	275.3,	313.6,
12 days	76.5,	96.6,	106.6,	120.9,	130.2,	137.1,	158.8,	181.9,	196.4,	216.0,	232.7,	245.4,	264.2,	278.5,	290.0,	329.0,
16 days	89.6,	111.8,	122.8,	138.3,	148.3,	155.8,	179.1,	203.7,	219.0,	239.7,	257.3,	270.5,	290.1,	304.9,	316.9,	357.1,
20 days	101.9,	126.0,	137.8,	154.4,	165.0,	173.0,	197.7,	223.5,	239.6,	261.2,	279.5,	293.2,	313.6,	328.9,	341.3,	382.6,
25 days	116.4,	142.5,	155.3,	173.1,	184.5,	193.0,	219.2,	246.5,	263.4,	286.1,	305.2,	319.5,	340.6,	356.5,	369.2,	411.8,

NOTES:
N/A Data not available
These values are derived from a Depth Duration Frequency (DDF) Model
For details refer to:
'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf

5.6 River Flood Protection Criteria C4

This criterion is intended to prevent flooding of the receiving system by limiting the run-off to pre-development greenfield volumes. This is achieved by providing attenuation, limiting the run-off to Q_{bar} rates as demonstrated above.

5.7 Quality Control

The proposed storm water gravity system will be constructed with uPVC or concrete pipes laid in accordance with IS 6 and the Technical Guidance Document H of the current Building Regulations. All works within public areas will be constructed in accordance to the requirements of the Local Authority. The road crossings shall comply with the DOELG publication 'Guidelines for the Opening, Backfilling and Reinstatement of Trenches in Public Roads' and in particular diagram 11 or section 7.

Further, a petrol interceptor is proposed prior to the point of discharge. A Klargestor NSBD 12 unit is suffice to manage possible hydrocarbon spills and ensure the quality of the surface water discharge to the receiving system is within acceptable limits.

6. Proposed Foul Drainage System

There is an existing drainage system at the rear of the public house, it is proposed to retain this as is and provide a separate system for the proposed development. It is assumed that the two existing dwellings that front onto the Main Street have existing active foul connections to the existing system and again, these will be retained.

The proposed foul drainage will be a gravity system laid to adequate falls. This will connect to the existing 300mmØ foul drainage pipe on the Main Street with an invert to crown arrangement in a new manhole built over the existing sewer, see drawing P-101.

The proposed foul drainage system will be 150mmØ uPVC pipes with minimum falls of 1/150 as per Irish Water requirements.

The proposed foul drainage system will be constructed with uPVC laid in accordance with the Technical Guidance Document H of the current Building Regulations. All works within public areas will be constructed in accordance to the requirements of the Local Authority. The road crossings shall comply with the DOELG publication 'Guidelines for the Opening, Backfilling and Reinstatement of Trenches in Public Roads' and in particular diagram 11 or section 7.

This proposal will be subject to an Irish Water application and all of the technical requirements set out in their latest editions of the 'Code of Practice for Wastewater Infrastructure' and 'Wastewater Infrastructure Standard Details' (July 2020 Rev 4) or latest edition. The following STD-WW standard details apply:

Number	Revision	Title
03	2	Drain and Service Connection pipework
04	4	Typical Sewer/Service pipe connection
05	2	Service Layout Separation Distances
05A	0	Wastewater Service Connection Vertical Separation Distances
07	2	Trench Backfill and Bedding
08	1	Concrete Protection to Wastewater Pipes
09	3	Blockwork Manhole
10	3	Precast Concrete Manhole with cast in-situ base
10A	0	Precast Concrete Manhole with Precast Concrete base
11	3	In-situ concrete manhole
12	3	Backdrop and Cascade Manhole
13	3	Private Side Inspection Chamber
39	0	Layout Plan Separation Distances Section
40	0	Layout Plan Separation Distances Plan

7. Water Supply

There is an existing 110Ømm uPVC watermain on the road to the west of the site leading to the church. It is proposed to connect to this and provide a 110Ømm 100PE SRD 17 main with a loop in the courtyard area, see drawing P-102.

The mains should be located at a minimum of 3m from any building structures and as a result will be partially located in the carriageway.

Watermain fittings such as sluice valves, scour valves and air valves are indicated on drawing P-102. The scour valve will have an outlet connected to the nearest storm manhole.

The requirements for firefighting will be subject of a Fire Safety Certificate (by others), hydrants are shown and these should be located 6m from any building structures. An off line hydrant is shown off the north west corner of Block A.

This proposal will be subject to an Irish Water application and all of the technical requirements set out in their latest editions of the 'Code of Practice for Wastewater Infrastructure' and 'Wastewater Infrastructure Standard Details' (July 2020 Rev 4) or latest edition. The following STD-W standard details apply:

Number	Revision	Title
03	4	Customer Connection and Boundary Boxes
04	4	General Pipe Connections
05	3	General Pipe Connections
06	3	General Pipe Connections
11	2	Separation Distances
12	0	New Trees Planting Resstrictions
13	2	Trench Backfill and Bedding Details
15	3	Sluice Valves foe PE pipes < 350mmØ
18	3	On-Line Hydrants for PE pipes
19	4	Off-Line Hydrants for PE pipes
22	3	On-Line Air Valves for PE pipes
26F	0	By-Pass Flow Meter Chamber
27	3	Marker Posts / Plates
28	1	Thrust and Support Blocks
30B	0	Scour Chamber to Storm Drain
42	0	Separation Distances Section
43	0	Separation Distances Plan

8. Irish Water Pre-connection Enquiry Form

A Pre-connection enquiry form was lodged with Irish Water on the 22nd of June 2021, and a receipt was received on the 25th of June 2021 showing the dealing number CDS21004426.

The response to the pre-connection enquiry dated the 15th of September 2021 is shown below.

Tarol Investments / Paul McDonnell/Garryhoe
Sydenham Road
Dundrum
Co. Dublin
D14TV02

15 September 2021

Re: CDS21004426 pre-connection enquiry - Subject to contract | Contract denied

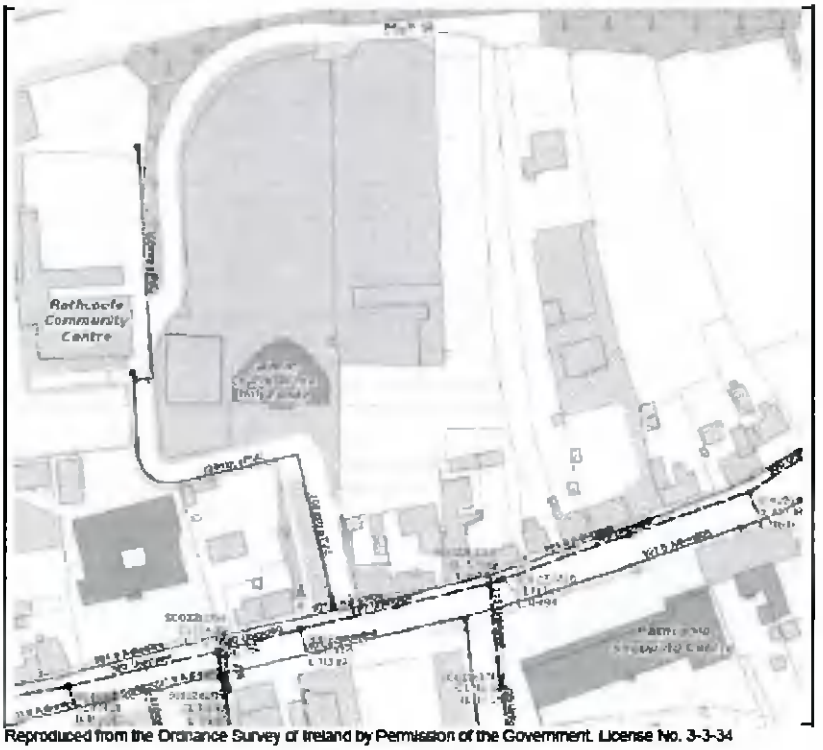
Connection for Multi/Mixed Use Development of 18 units at Muldowneys Public House, Main Street, Co. Dublin

Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Muldowneys Public House, Main Street, Co. Dublin (the Premises). Based upon the details you have provided with your pre-connection enquiry and on our desk top analysis of the capacity currently available in the Irish Water network(s) as assessed by Irish Water, we wish to advise you that your proposed connection to the Irish Water network(s) can be facilitated at this moment in time.

SERVICE	OUTCOME OF PRE-CONNECTION ENQUIRY THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED.
Water Connection	Feasible without infrastructure upgrade by Irish Water
Wastewater Connection	Feasible Subject to upgrades
SITE SPECIFIC COMMENTS	
Wastewater Connection	In order to accommodate the proposed connection at the Premises, upgrade works are required to increase the capacity of Tay Lane Pumping Station. Irish Water currently has a project underway which will provide the necessary upgrade and capacity. This upgrade project is scheduled to be completed in Q1/2026 (this may be subject to change) and the proposed connection could be completed as soon as possibly practicable after this date.
The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this development shall comply with the Irish Water Connections and Developer Services Standard Details and Codes of Practice that are available on the Irish Water website. Irish Water reserves the right to supplement these requirements with Codes of Practice and these will be issued with the connection agreement.	

The map included below outlines the current Irish Water infrastructure adjacent to your site:



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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 guarantees, 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 works being 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.

General Notes:

1) **The initial assessment referred to above is carried out taking into account water demand and wastewater discharge volumes and infrastructure details on the date of the assessment. The availability of capacity may change at any date after this assessment.**

2) This feedback does not constitute a contract in whole or in part to provide a connection to any Irish Water infrastructure. All feasibility assessments are subject to the constraints of the Irish Water Capital Investment Plan.
3) The feedback provided is subject to a Connection Agreement/contract being signed at a later date.
4) A Connection Agreement will be required to commencing the connection works associated with the enquiry this can be applied for at https://www.water.ie/connections/get-connected/
5) A Connection Agreement cannot be issued until all statutory approvals are successfully in place.
6) Irish Water Connection Policy/ Charges can be found at https://www.water.ie/connections/information/connection-charges/
7) Please note the Confirmation of Feasibility does not extend to your fire flow requirements.
8) Irish Water is not responsible for the management or disposal of storm water or ground waters. You are advised to contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges
9) To access Irish Water Maps email datarequests@water.ie
10) All works to the Irish Water infrastructure, including works in the Public Space, shall have to be carried out by Irish Water.

If you have any further questions, please contact Marina Byrne from the design team via email mzbyrne@water.ie For further information, visit **www.water.ie/connections**.

Yours sincerely,

Yvonne Harris

Head of Customer Operations

9. Summary and Conclusions

This report relates to the design work undertaken to develop the site strategy for site development works.

The site is located in an area zoned 'improve residential amenity' in the South Dublin County Council Development Plan 2016 – 2022 and the use of the existing available services is necessary.

The proposed civil designs are driven by the site characteristics and are the most optimum solutions for the scheme location and form.