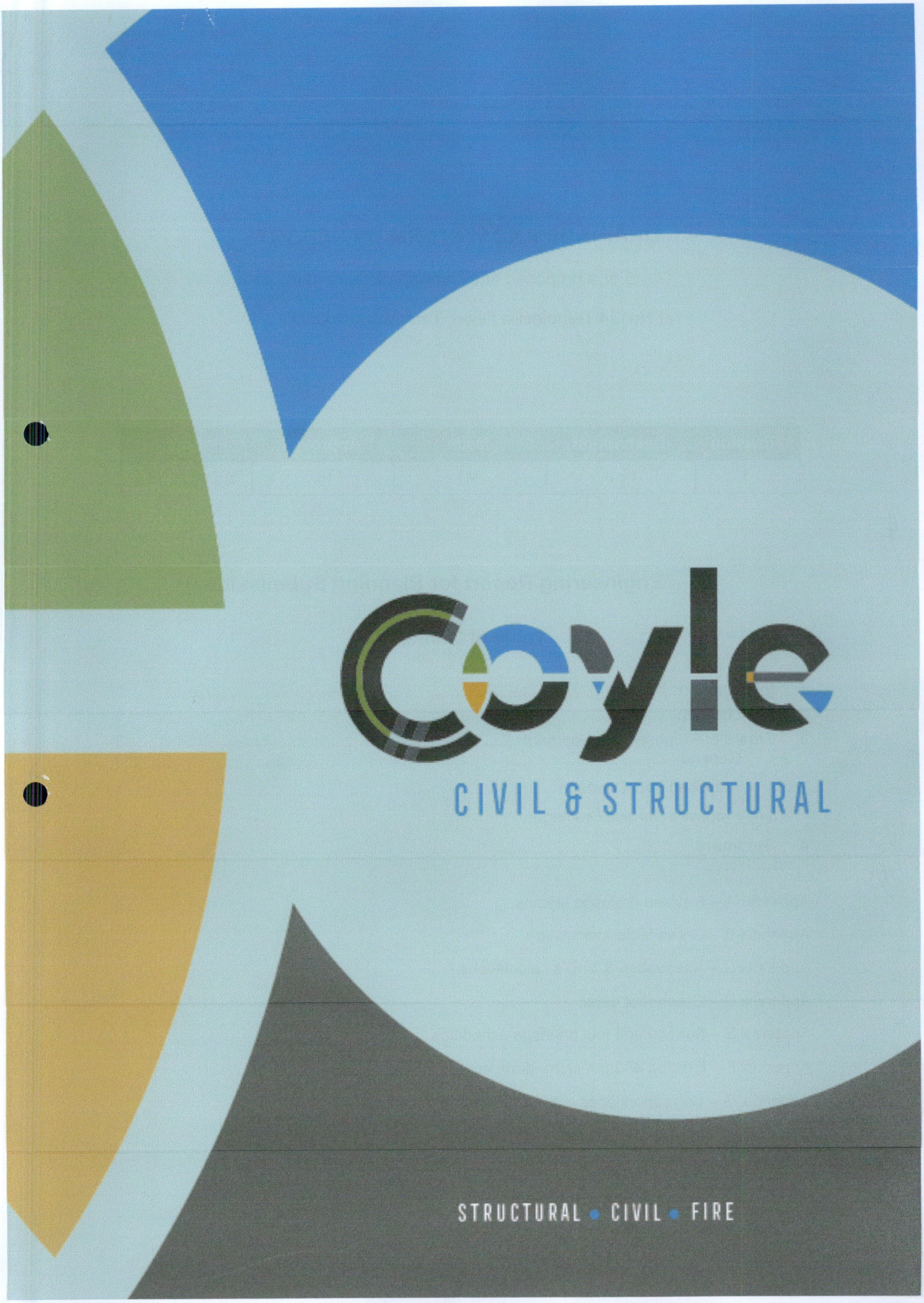

Coyle
CIVIL & STRUCTURAL
STRUCTURAL • CIVIL • FIRE

1.0 Introduction

Coyle Civil & Structural Consulting Engineers has been engaged by Mr Barry Coleman to carry out an Engineering Services Report for a proposed development at 124 Templeville Drive, Templeogue, Dublin 6W.

This Report, together with its appendices address item no 5(2) and Item No6 of the additional information request for planning permission application ref no SD22A/0466

2.0 Site Location

The proposed development consists of 4no proposed mews style dwelling houses at No 124 Templeville Drive, Templeogue, Dublin 6

Site Location is shown in Figure 2.1, proposed Site Layout is shown in Figure 2.2.

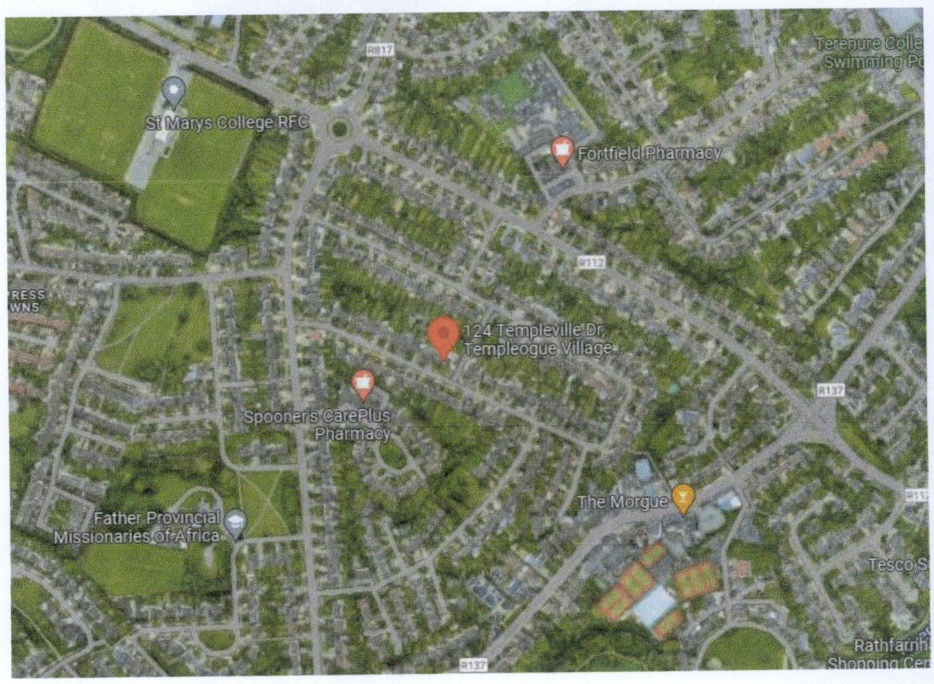


Figure 2.1 – Site Location

3.0 Detail of Proposed Development

3.1 General

The site infrastructure that is proposed as part of the development is outlined hereunder and indicated on Drawing DR001 in Appendix A.

3.2 Proposed Foul Drainage

Currently the existing house on the site is serviced by a 100mm diameter private foul drain, draining to the front of the dwelling into the existing 225mm diameter foul sewer on Templeville Drive.

It is proposed to provide 4no new foul drains to the new dwellings at gradients ranging from 1:40 to 1:60. A single connection point is proposed to the existing foul sewer to the opposite side of Templeville Drive. Refer to drawing DR01 in Appendix A for the proposed drainage layout plan.

3.3 Proposed Surface Drainage

3.3.1 Proposed Surface Water Drain Diversion

An existing 450mm diameter **unused** concrete culvert is located along the northern boundary of the subject site. Proposals to divert this culvert for a previous development under permission SD20A/0190 where approved. Appendix G includes correspondence with South Dublin County Council confirming the acceptance of the previous drainage layout.

The current drainage proposal follows for a similar principal of the layout approved under permission SD20A/0190. The proposed layout detail can be seen in Appendix A.

In addressing Item 6 of the additional information request a proposal to divert the 450mm storm drain was initially proposed as part of the original planning application. Through a recent liaison meeting with the Drainage Department of South Dublin CoCo concerns were raised by SDCC regarding the required set back distances for the drain.

The revised proposal as part of this additional information submission allows for the following works to the 450mm storm drain;

- Diversion of the drain away from the structure of the most northerly house, see Appendix A.
- The construction of a structurally designed concrete box culvert to allow for maintenance of the drain.

The box culvert will be approx 900mmx900mm in dimension with the 450mm running within the box culvert. The placing or sleeving of the 450mm pipe within the box culvert will allow any replacement or maintenance works to be carried out to the 450mm. The below is an image of a similar concrete box culvert.

The design of the culvert will follow the requirements of the following guidance documents;

1. Transport Infrastructure Ireland publication AM-STR-06029 - Design of Buried Concrete Box Culverts.
2. Eurocode 2 Design of Concrete Structures.

3.3.3 Sustainable Drainage Maintenance & Management Plan

3.3.3.1 Sustainable Drainage Management Plan

The storm water drainage strategy for the proposed development utilises SuD's features to intercept and convey all pluvial surface water runoff. The design of the system aims to attenuate runoff and encourage infiltration.

The SuD's elements of the design are designed to prevent flooding of 124 Templeville and control the flow of water using attractive landscape features. Please refer to the Landscape Plan for the detail of all planting.

The proposed storm water system consists of the following SuD's components.

- Permeable paving to dwelling entrances, external patio areas and parking areas
- Sedum green roof to flat roofs of dwelling
- Green roof to bin stores
- Tree pits to garden trees
- Open turf natural grass to rear gardens to allow for natural drainage
- Rainwater butts to the individual dwellings

3.3.3.1 Sustainable Drainage Maintenance Plan

All proposed SuD's items proposed for the development of 124 Templeville Drive have been designed for easy maintenance. The maintenance required shall be as detailed below;

1) Weekly maintenance items
   (a) Checking and cleaning of manholes
   (b) Checking for clogging to permeable paving material

2) Annual maintenance items
   (a) Cutting and general maintenance of green roofs
   (b) Cleaning of flow control orifice
   (c) Inspection of 450mm storm drain

3)

For the attenuation calculation to address the combined SUD's items the HR Wallingford SuD's Design Tool have been used. Based on the detail included in Appendix C of this report the overall storage volume is 0m3.

It is proposed to discharge storm water from the flows from the site via the 1.2m diameter circular precast manholes with a flow control orifice to the outfall manhole.

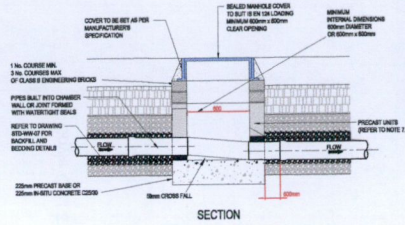
It is proposed to attenuate SW flows from the site, within 4no 1.2m diameter circular precast concrete outfall manholes while restricting flows to a maximum of 2 l/s through the use of an orifice plate. Refer to Appendix B for the storm water attenuation details.

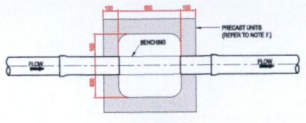
4.0 Summary

The drainage design proposed within this report follows the same principal of that approved in planning permission SD20A/0190 and submitted as part of this original application. The addition of the structural box culvert allows for maintenance of the 450mm and any required pipe replacement without the need to excavate the pipe.

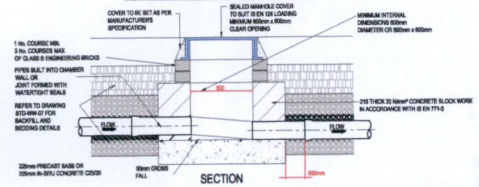
The revised Storm Drainage Layout, the proposed Landscape Plan and the SuD's & Attenuation calculations demonstrate the SuD's elements to the development and how greenfield runoff rates are achieved, satisfying item 5(2)(B) of the additional information request.

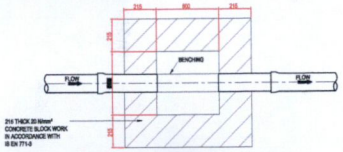
The SuD's Management and Maintenance Plan has been included in this report to satisfy item 5(2)(C) of the addiotnal information request.





INSPECTION CHAMBER (PRECAST CONCRETE CONSTRUCTION)

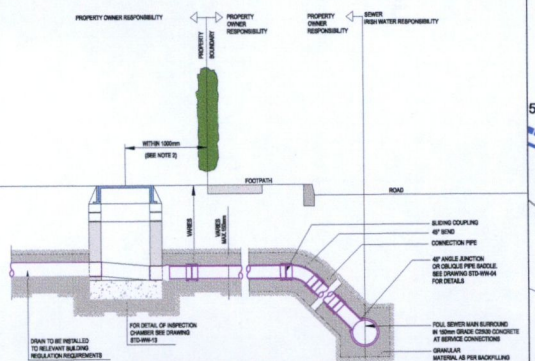




INSPECTION CHAMBER (BLOCK WORK CONSTRUCTION)

PRIVATE FOUL SITE INSPECTION CHAMBER (STD-WW-13)

SCALE NTS



PIPE SIZE (mm)	GRADIENT
100	1 : 80
150 TO 225	1 : 150 MINIMUM

DRAIN & SERVICE PIPE CONNECTION PIPEWORK (STD-WW-03)

SCALE NTS

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPE AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS.
4. ACCESS POINTS SHOULD BE LOCATED SO THAT THEY ARE ACCESSIBLE AND APPARENT TO THE MAINTAINER AT ALL TIMES FOR USE. THEY SHOULD AVOID REAR GARDENS OR ENCLOSED LOCATIONS AND THEY SHOULD NEVER BE OVERLAIN WITH SURFACE DRESSING, TOPSOIL, ETC.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
6. 300mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
7. PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER.
8. CHAMBERS SHALL BE SUPPLICATED BY A MINIMUM OF 150mm COMPACTED CLAUSE 804 OR CLAUSE 808 MATERIAL AS PER STD-WW-07.

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPE AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER WITHIN THE CONFINES OF A PRIVATE BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS.

NOTES:
OBA CONSULTING CIVIL & STRUCTURAL ENGINEERS
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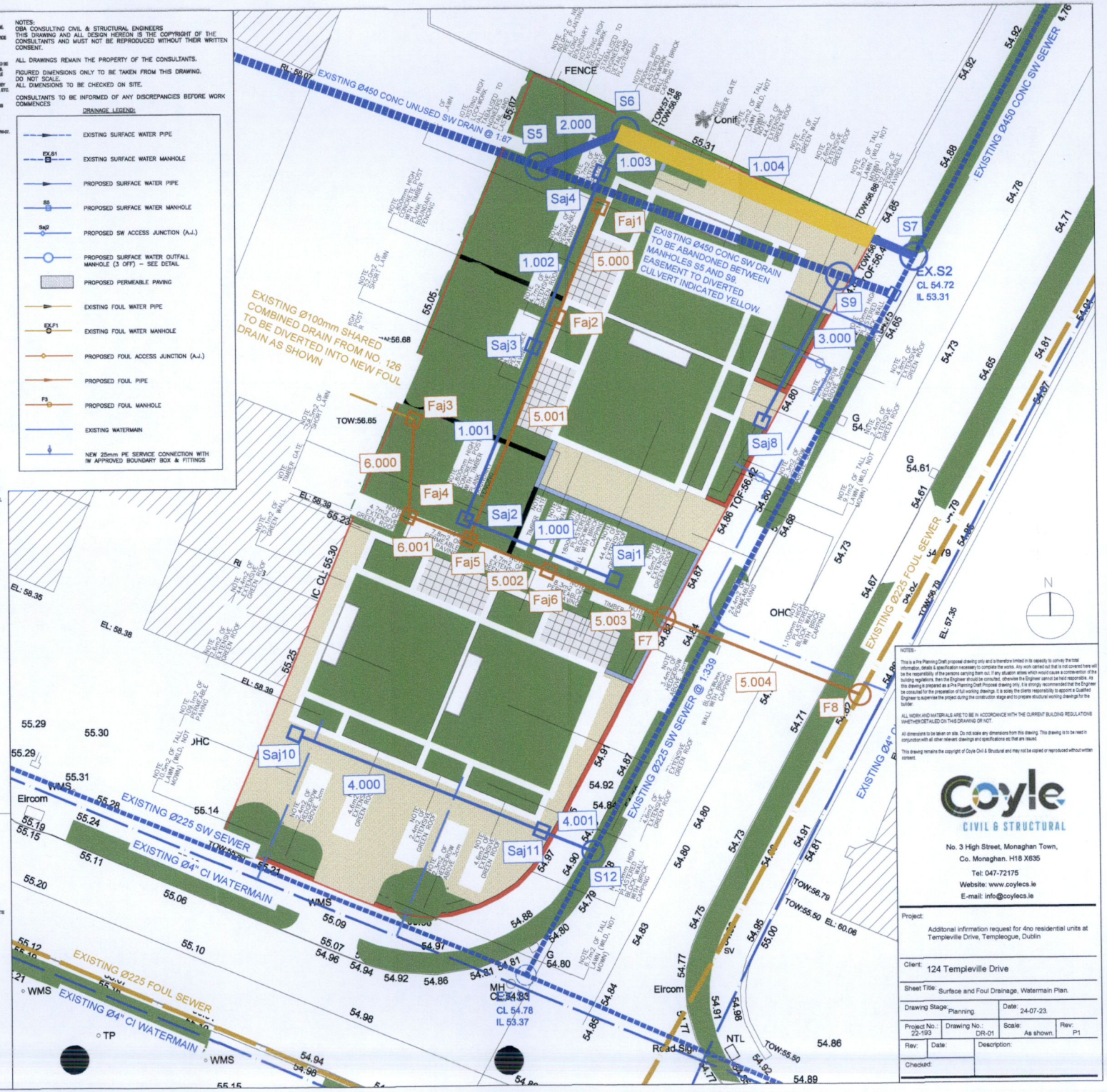
ALL DRAWINGS REMAIN THE PROPERTY OF THE CONSULTANTS.

FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING. DO NOT SCALE.
ALL DIMENSIONS TO BE CHECKED ON SITE.

CONSULTANTS TO BE INFORMED OF ANY DISCREPANCIES BEFORE WORK COMMENCES

DRAINAGE LEGEND:

- EXISTING SURFACE WATER PIPE
- EX.S1 — EXISTING SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER PIPE
- S5 — PROPOSED SURFACE WATER MANHOLE
- Saj2 — PROPOSED SW ACCESS JUNCTION (A.J.)
- PROPOSED SURFACE WATER OUTFALL MANHOLE (3 OFF) – SEE DETAIL
- PROPOSED PERMEABLE PAVING
- EXISTING FOUL WATER PIPE
- EX.F1 — EXISTING FOUL WATER MANHOLE
- PROPOSED FOUL ACCESS JUNCTION (A.J.)
- PROPOSED FOUL PIPE
- F3 — PROPOSED FOUL MANHOLE
- EXISTING WATERMAIN
- NEW 25mm PE SERVICE CONNECTION WITH IW APPROVED BOUNDARY BOX & FITTINGS



NOTES -

This is a Pre Planning Draft proposal drawing only and is therefore limited in its capacity to convey the total information, details & specification necessary to complete the works. Any work carried out that is not covered here will be the responsibility of the persons carrying them out. If any situation arises which would cause a contravention of the building regulations, then the Engineer should be consulted, otherwise the Engineer cannot be held responsible. As this drawing is prepared as a Pre-Planning Draft Proposal drawing only, it is strongly recommended that the Engineer be consulted for the preparation of full working drawings. It is solely the clients responsibility to appoint a Qualified Engineer to supervise the project during the construction stage and to prepare structural working drawings for the builder.

ALL WORK AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS WHETHER DETAILED ON THIS DRAWING OR NOT.

All dimensions to be taken on site. Do not scale any dimensions from this drawing. This drawing is to be read in conjunction with all other relevant drawings and specifications as that are issued.

Coyle
CIVIL & STRUCTURAL
No. 3 High Street, Monaghan Town,
Co. Monaghan. H18 X635
Tel: 047-72175
Website: www.coylecs.ie
E-mail: info@coylecs.ie

Project: Additonal infirmation request for 4no residential units at Templeville Drive, Templeogue, Dublin

Client: 124 Templeville Drive

Sheet Title: Surface and Foul Drainage, Watermain Plan.

Drawing Stage:		Date:
Planning.		24-07-23.
Project No.: 22-193	Drawing No.: DR-01	Scale: As shown.	Rev: P1
Rev.	Date:	Description:
Checked:		

Green Space Factor Tool

South Dublin County Council

Comhairle Contae
Átha Cliath Theas
South Dublin County Council

User input indicated by Orange fields

User Input	
Zoning lookup	Minimum GI Score
Res	0.5

1. Enter Development Site Area m² HERE►		780	
Surface Type (see tab for detailed descriptions)	**Factor**	**Proposed Surface Area m²**	**Factor Values**
1. Short Lawn	0.3	88.41	26.523
2. Tall Lawn (wild, not mown)	0.5	0	0
Permeable Paving	0.3	253.47	76.041
Vegetation		0	0
4a. Vegetation-Shrub below 3m	0.4	0	0
4b. Vegetation-Shrub / Hedgerow above 3m	0.5	73.8	36.9
4c. Vegetation-Pollinator friendly perennial planting	0.5	49.87	24.935
4d. Vegetation-Preserved hedgerow	1.2	0	0
Trees		0	0
5a. New trees	0.6	55	33
5b. Preserved trees	1.2	0	0
7. SuDS intervention (rain garden, bioswale)	0.6	113.72	68.232
Green Roof		0	0
9a. Green Roofs - Intensive green roof (substrate is 200-1200mm in depth)	0.7	0	0
9b. Green Roofs - Extensive green roof (substrate is 80-200mm in depth)	0.6	171.32	102.792
10. Green wall	0.4	58.62	23.448
11. Retained Open Water	2	0	0
12. New open water	1.5	2.456	3.684
Total Equivalent Surface Area of Greening Factors		**866.67**	

Green Factor Numerator	**395.56**

Minumum Required GI score	Final GI score	Result
0.5	0.51	Pass

hrwallingford

Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:	Martin Jancek
Site name:	124 Templeville Drive
Site location:	124 Templeville Drive

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

Site Details

Latitude:	53.30013° N
Longitude:	6.30694° W
Reference:	1500474227
Date:	Jul 21 2023 16:33

Site characteristics

Total site area (ha):	0.078
Significant public open space (ha):	0
Area positively drained (ha):	0.078
Impermeable area (ha):	0.039
Percentage of drained area that is impermeable (%):	50
Impervious area drained via infiltration (ha):	0.0166
Return period for infiltration system design (year):	100
Impervious area drained to rainwater harvesting (ha):	0
Return period for rainwater harvesting system (year):	100
Compliance factor for rainwater harvesting system (%):	100
Net site area for storage volume design (ha):	0.04
Net impermable area for storage volume design (ha):	0.02
Pervious area contribution to runoff (%):	30

* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q_{BAR} and other flow rates will have been reduced accordingly.

Methodology

esti	IH124
Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	2
SPR:	0.3	0.3

Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	51
Rainfall 100 yrs 12 hrs:	--	62
FEH / FSR conversion factor:	1	1
SAAR (mm):	883	883
M5-60 Rainfall Depth (mm):	14	14
'r' Ratio M5-60/M5-2 day:	0.3	0.3
Hydological region:	12	12
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.72	1.72
Growth curve factor 30 year:	2.13	2.13

HR Wallingford
Working with water

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Martin Jancek
Site name:	124
Site location:	Templeville Drive

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	53.30015° N
Longitude:	6.30697° W
Reference:	1131839012
Date:	Nov 30 2022 18:54

Runoff estimation approach IH124

Site characteristics

Total site area (ha): 0.1

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics	Default	Edited
SOIL type:	2	2
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.3

Hydrological characteristics	Default	Edited
SAAR (mm):	883	883
Hydrological region:	12	12
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.13	2.13
Growth curve factor 100 years:	2.61	2.61
Growth curve factor 200 years:	2.86	2.86

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates	Default	Edited
Q_{BAR} (l/s):	0.24	0.24
1 in 1 year (l/s):	0.2	0.2
1 in 30 years (l/s):	0.51	0.51
1 in 100 year (l/s):	0.62	0.62
1 in 200 years (l/s):	0.68	0.68

APPENDIX D

Green Roof Detail

MOYMATERIALS

Waterproofing & Insulation Specialists

Rainwater Attenuation with Moy Materials Ltd. Diadem 150 Extensive Green Roof System.

The ability of the Diadem Extensive Green Roof to absorb rainfall is a function of many dynamic factors, the most important of which are the elements used in the green roof build up and their specific ability to absorb rainfall.

The standard Diadem 150 Extensive Green Roof constructed utilising the Moy Materials Ltd. pre-cultivated Sedum Blanket, has a maximum rainwater retention capacity of 44 litres per M2. Each 1mm of rainfall recorded is the equivalent of 1 litre per M2.

Rainfall Attenuation Capacity of Moy Diadem 150 Extensive Green Roof.

Rainfall Intensity (mm / hour).	Attenuation Time (Minutes).
25	105
75	35

These figures may be augmented by utilising larger capacity reservoir boards, heavier protection and filtration fleeces and deeper zones of growing media.

Maximum Water Storage Capacity Moy Materials Diadem Extensive Green Roof Elements:

- Sedum Blanket 20mm 9 Lt / M2.
- Growing Media 50mm 22.5 Lt / M2.
- VLF200 Filtration Fleece 1.2 Lt / M2.
- DE25 Reservoir & Drainage Board 10 Lt / M2.
- VLU300 Protection Fleece 1.8 Lt / M2.

Unit K, South City Business Park, Whitestown Way, Tallaght, Dublin 24.
Ph. 01 451 9077 Fax. 01 450 0033
E Mail : info@moymaterials.com Website: www.moymaterials.com

MOYMATERIALS

Waterproofing & Insulation Specialists

PARALON WARM ROOF AND DIADEM EXTENSIVE GREEN ROOF MODEL SPECIFICATION.

Paralon Warm Roof Elements.

Decking
Concrete deck to Engineers specification laid to minimum finished falls of 1 in 80

Surface Preparation
Primer - Apply Impertene bitumen primer at ratio 4m. Sq. per litre.

Vapour Control Layer
Plasfal 3Kg glass fibre reinforced modified bitumen vapour barrier membrane fully torch bonded with 100mm side and end laps, sealed and detailed to envelope insulation board.

Thermal Insulation
Paratorch PIR foam composite bitumen impregnated Hunton fibreboard faced insulation 120mm thick bonded with Instastick adhesive. Install butt jointed and staggered, incorporating 75mm insulated angle fillets at upstands and kerbs.

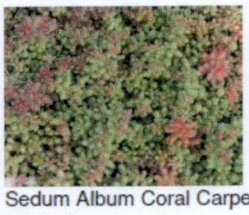
Base Layer
Top S 3mm polyester reinforced A.P.P. modified bitumen base sheet membrane fully bonded with 100mm side and end laps.

Cap Sheet
Paralon NT4 4mm (anti-root) IAB & BBA certified, polyester reinforced A.P.P. modified bitumen Plasto Elastomeric membrane, fully torch bonded with 100mm side and 150mm end laps. Carry out visual inspection and electronic waterproofing integrity test prior to installation of green roof system.

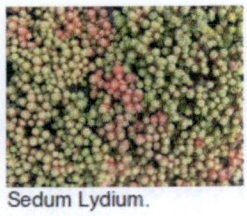
General Detailing.
Parapets – Form Paralon upstand detail at parapet upstands extending membranes to form continuous D.P.C. under cappings. Paralon ARD/HS plus to be used on all upstands. Form upstands to terminate a minimum of 150mm above the finished surface levels with Paralon membrane termination under approved metal cover flashing or clamping bar detail.

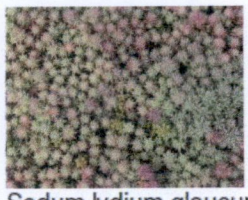
Kerbs - Form all upstands to terminate a minimum of 150mm above the finished vegetation level.

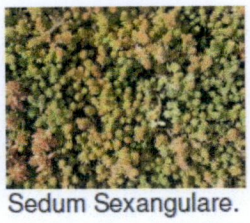
Moy Materials to conduct pre warranty inspection of roof prior to installation of green roofing elements.

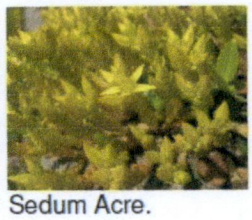

Sedum Album Coral Carpet.


Sedum Album Minor.


Sedum Lydium.


Sedum lydium glaucum.


Sedum Sexangulare.


Sedum Acre.

(Alternate varieties include Grass / Herb / Sedum mixes and reinforced mixes for high pitch roof applications).

Safety System.
Install non penetrating FLG "Single Point" combined lightning protection and fall arrest system. System conforms to EN795:1996 and EN795:2000 Class E.
Or
Install non penetrating FLG "Multi Point" combined lightning protection and fall arrest system. System conforms to EN795:1996 and EN795:2000 A1 Class E.

Solar Panel Mounts.
Install non penetrating Diadem DE60 Solar panel mounting frames as required to support solar panel array.
Or
Install non penetrating Roof Pro Solar Panel mounting frames as required to support solar panel array.

Detailing.
A wide range of proprietary components are available for separation and demarcation of pedestrian and green areas. There are numerous options for the treatment of roof edges and for drainage at terminations and thresholds. Please consult with the Technical Dept. at Moy Materials Ltd. for advice on available options.

Maintenance Contract.
A maintenance contract may be established, between Moy Materials Ltd. and the building owner. This contract will be subject to the payment of an annual maintenance fee.

Note on Maintenance.
Extensive green roof systems are inherently low maintenance, but shall require a minimum of two maintenance visits annually. Where a maintenance contract is not taken out with Moy Materials Ltd. maintenance of the roof, from the date of installation, is the responsibility of the building owner.

Where maintenance is not carried out in accordance with our green roof maintenance guide, no responsibility for the performance of the green roof shall be accepted by Moy Materials Ltd.

Unit K, South City Business Park, Whitestown Way, Tallaght, Dublin 24.
Ph. 01 451 9077 Fax. 01 450 0033
E Mail : brian@moymaterials.com Website: www.moymaterials.com

Document Ref; **Surface and Foul drainage.xlsx**

Templeville Drive
Pipe Network and Chamber Schedules

Project: Templeville Drive
Zone: -
Description: Surface and Foul Drainage
Network: As shown
Area: -

Schedule Rev.: P0
Drawing Ref.: P0
(including rev.) -

	Issued;	Checked;	Approved;
Name	MJ	MJ	PC
Date	01/12/2022	01/12/2022	01/12/2022

	Pipe Details					Upstream						Downstream				
Network	Pipe Ref.	Length (m)	Gradient (1:xxx)	Internal Dia. (mm)	Bedding Type[1]	Chamber Ref.	Chamber Type	Cover Type[4]	Pipe Invert Level (mAOD)	Cover Level (mAOD)	Pipe Cover Depth (m)	Chamber Ref.	Pipe Invert Level (mAOD)	Cover Level (mAOD)	Pipe Cover Depth (m)	Notes
Surface Drainage	1.000	8.678	58.5	100	Type S	Saj1	Access Junction	C1	54.239	55.220	0.881	Saj2	54.091	55.230	1.039	
	1.001	10.033	58.5	100	Type S	Saj2	Access Junction	C1	54.091	55.230	1.039	Saj3	53.919	55.200	1.181	
	1.002	10.095	58.5	100	Type S	Saj3	Access Junction	C1	53.919	55.200	1.181	Saj4	53.747	55.100	1.253	
	1.003	2.627	58.5	100	Type S	Saj4	Access Junction	C1	53.747	55.100	1.253	S6	53.702	55.100	1.298	
	2.000	5.091	25.6	450	Type S	S5	Type C	C1	53.800	55.100	0.850	S6	53.601	55.100	1.049	
	1.004	17.039	407.7	450	Type S	S6	Type C	C1	53.352	55.100	1.298	S7	53.310	54.720	0.960	Outfall to proposed manhole S7
	3.000	8.936	58.5	100	Type S	Saj8	Access Junction	C1	53.553	54.850	1.197	S9	53.400	54.900	1.400	Outfall to proposed manhole S9
	4.000	14.239	58.5	100	Type S	Saj10	Access Junction	C1	53.850	55.150	1.200	Saj11	53.607	55.100	1.393	
	4.001	2.992	58.5	100	Type S	Saj11	Access Junction	C1	53.607	55.100	1.393	S12	53.555	54.900	1.245	Outfall to proposed manhole S12
Foul Drainage	5.000	6.409	44.1	100	Type S	Faj1	Access Junction	C1	54.417	55.200	0.683	Faj2	54.271	55.150	0.779	
	5.001	12.956	44.1	100	Type S	Faj2	Access Junction	C1	54.271	55.150	0.779	Faj5	53.977	55.250	1.173	
	6.000	5.206	44.1	100	Type S	Faj3	Access Junction	C1	54.176	55.150	0.874	Faj4	54.058	55.220	1.062	
	6.001	3.435	42.6	100	Type S	Faj4	Access Junction	C1	54.058	55.220	1.062	Faj5	53.977	55.250	1.173	
	5.002	4.631	42.6	100	Type S	Faj5	Access Junction	C1	53.977	55.250	1.173	Faj6	53.869	55.200	1.231	
	5.003	6.802	42.6	100	Type S	Faj6	Access Junction	C1	53.869	55.200	1.231	F7	53.709	54.900	1.091	
	5.004	11.331	58.4	225	Type S	F7	Type C	C1	53.584	54.900	1.091	F8	53.390	54.820	1.205	Outfall to proposed manhole F8

Notes

1. All covers to new chambers shall be positioned to be opened and the chamber accessed without obstruction. Chamber covers to be orientated to avoid obstructing access where located in close proximity to a safety barrier, where applicable.
2. All man entry chambers shall have access arranged such that the user faces oncoming traffic when entering and exiting.
3. Pipe Cover Depth is distance between finished ground surface level and pipe soffit level.

EXISTING 450MM UNUSED CULVERT APPRAISAL REPORT

For a proposed 4no dwelling development at No124 Templeville Drive, Templeogue, Dublin 6

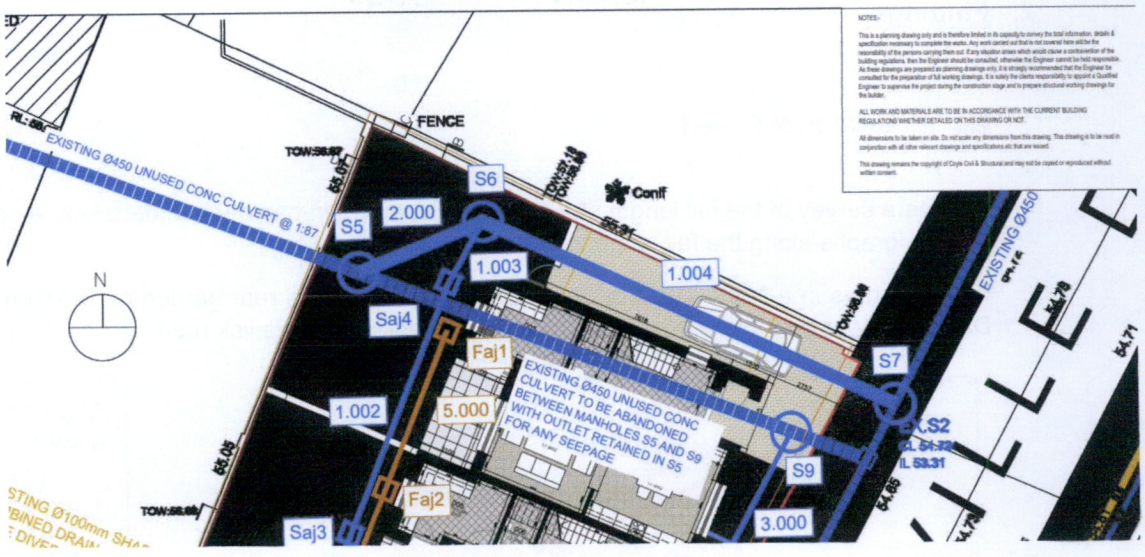


Fig. 2 - Proposed diversion.

A previous application proposed a diversion to the south of the proposed house which entailed a number of bends. The current diversion to the north of the proposal dwelling will have negligible effect to the hydraulic capacity of the drain.

Our assessment of the culvert has shown that it terminates in the middle of a rear garden at 135.5 metres from the connecting manhole on Templeville Drive, it has no incoming connections and has a significant amount of root growth at the base of the pipe. It is very clear that the drain has not been maintained by the council and seems to be only servicing ground water which is infiltrating the culvert through the joints in the concrete pipes.

It is our opinion that the culvert was placed during the construction of the Templeville estate as a temporary measure to accommodate an old agricultural ditch which has now been fully removed.

It is clear from our investigations that the culvert provides no service to the local houses or road surfaces. The culvert may be acting as a DeFacto attenuation device during a surcharging of the network. If this is the case, the proposed diversion of the culvert will not affect the capacity of the culvert as an attenuation device.

Section 7 of the Greater Dublin Regional Code of Practice for Drainage Works sets out clearly the requirements necessary for the diversion of any culvert. Agreement is required from the local authority with the main proviso being no effect to the hydraulic capacity of the culvert or the ability to maintain the pipe. The culvert in question has no connections, no branch connections or the ability to connect to any drain, it terminates in the middle of a garden, is infested with roots and debris, has numerous structures built over or in very close proximity and is not being maintained.

In our opinion the pipe is not providing the normal function of a typical culvert and the size of the pipe does not reflect its true use and is exaggerating its importance.

It is our opinion that the proposed diversion will not affect its hydraulic capacity of the culvert and the provision of an acceptable way leave is being provided.

Given our findings. It is our opinion that the council in this case is being unreasonable in not agreeing to the diversion of the drain to allow the development of badly need housing.

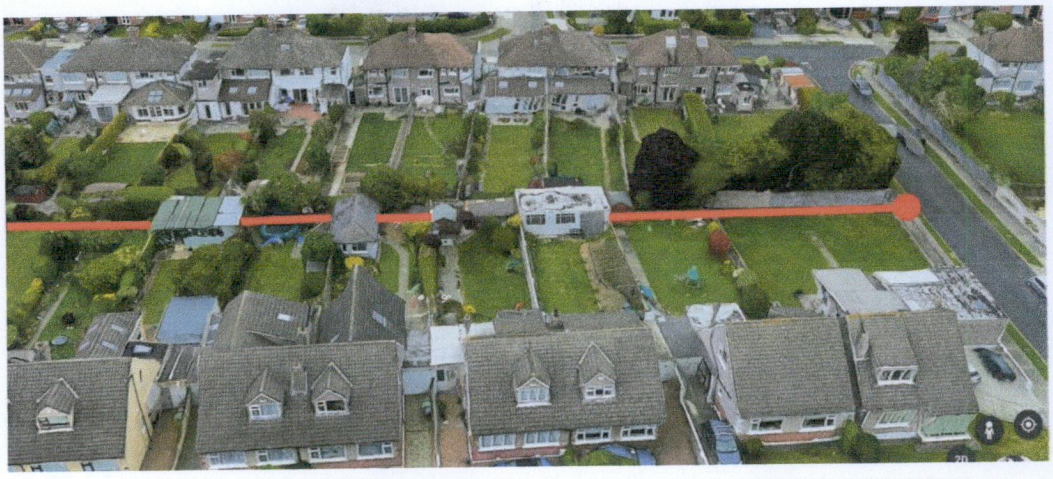


Fig 6 - Extract from google maps 3D view with the culvert line plotted, running under existing buildings

As can be seen in the above aerial view there are a significant number of existing structures over or within a 6 metre wayleave.

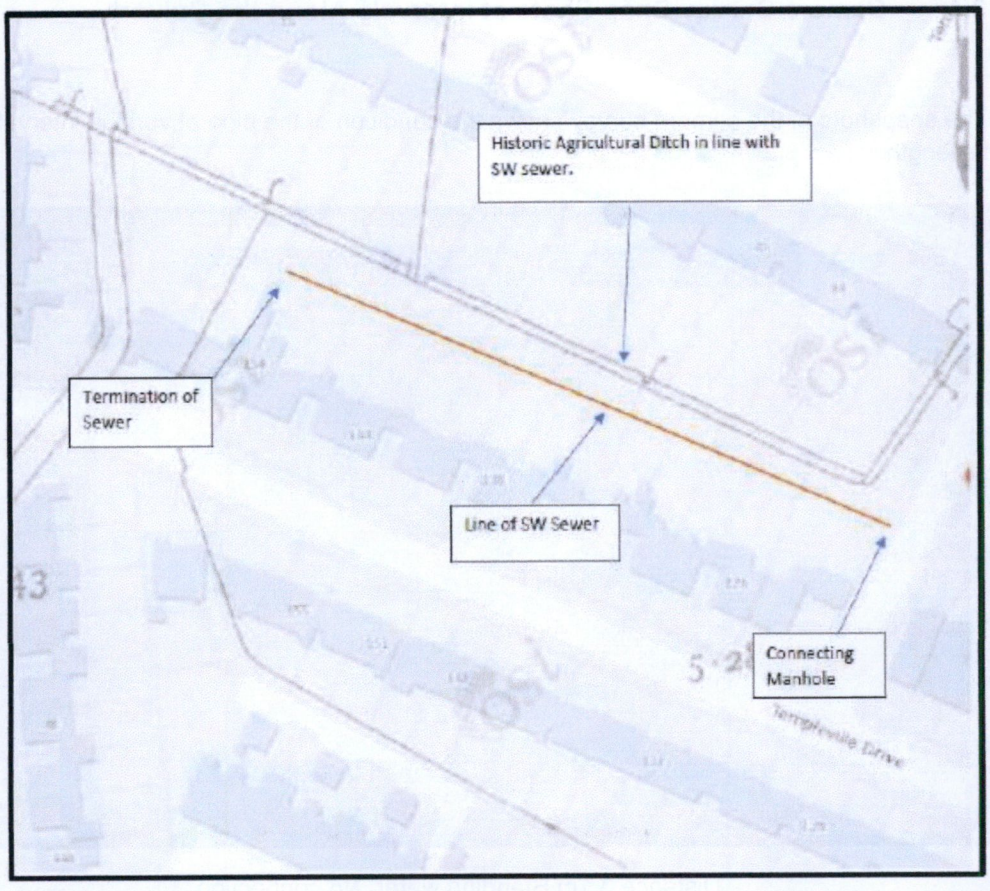
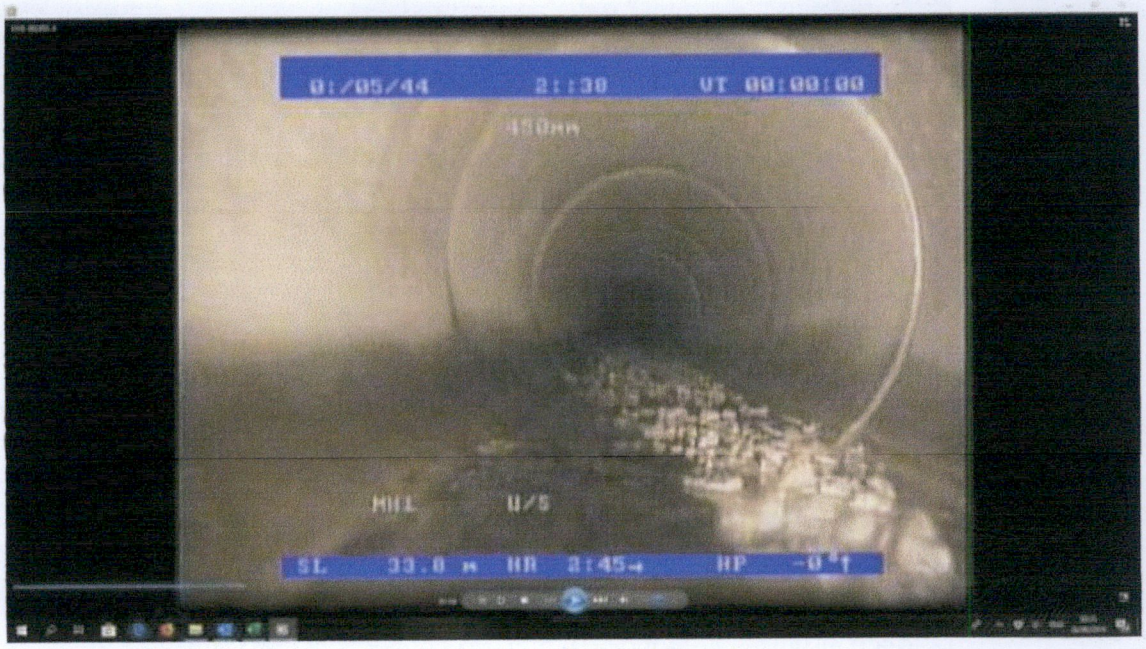


Fig 8. - Overlay of historic OS Map, Current OS Map and alignment of the pipe.

Distance 14.5m Standing water. No connections

Distance 19.1m Standing water. No connections

Distance 27.3m Debris & standing water. No connections



Distance 33.8m Debris in pipe. No connections

Distance 50.7m No Connections

Distance 57.0m No Connections

Distance 70.6m Extensive root growth. No Connections

Distance 71.1m No Connections

Distance 122.8m. Root growth. No Connections

Distance 129.1m No Connections

APPENDIX G

Correspondence with SDCC Drainage

Kindest regards

Ciaran

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