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CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

SERVICES REPORT

Including :
Proposed Surface Water Discharge
Proposed Foul Water Discharge
Proposed Water Supply
Draft CEMP

Project Reference: Proposed Housing Project
At St. Gobnaits Terrace, Ballyvourney

Client: Cork County Council

Project No.: 587000

Design By: B.A. & G.R.

Date: Mar '25
Rev: 6

List of Contents

Introduction

The subject lands of the application are located in the existing St. Gobnaits Terrace development in Ballyvourney. The site a green area adjacent to the existing houses in St. Gobnaits Terrace. The proposed development has 8 housing units, comprised in two blocks, a block of four townhouses and a block of four apartments. It is proposed to extend the hardstanding parking area serving St. Gobnaits Terrace.

A Site Assessment of the development for Cork County Council has been undertaken including a utilities and geotechnical surveys/investigations. BRE365 testing has also been undertaken and standpipes are in place on the site.

St. Gobnaits Terrace is adjacent to the proposed site. There are water, telecom and electrical services in the roadway. There is an overhead ESB line through the site which is proposed to be diverted underground. There is a foul sewer which passes through the proposed site and serves St. Gobnaits Terrace, it is proposed to divert this sewer around the site and to connect to it to serve the development.

The geotechnical investigations included 2 infiltrations tests which gave results of 0.0019 & 0.0016m/min. It is proposed to use a soakaway on the south western side of the proposed development to dispose of stormwater from the proposed development.

It is proposed to connect to the existing watermain in St. Gobnait Terrace, the public road on the south eastern side of the proposed development.

A summary draft of a proposed CEMP is included and a drawing of proposed site compound location is identified.

A separate flood study has been undertaken on the site and the site is in Zone C and is deemed not to be at risk of flooding.

Irish Water sent a confirmation of feasibility for the development on the 24th of April '24. It is appended to this report.

SUDS Assessment

The site has been assessed for suitability for applying for SuDS (Sustainable Drainage Systems) measures for the development. The principal outcome of the study found that infiltration measures are suitable for the site.

SuDS measures have been considered as per the table below: -

Measure Considered	Assessment	Adopt
Rainwater Harvesting	Rainwater butts to be installed in the downpipes of the houses	N
Green Roof	Due to the nature of the site a green roof would not be practical	N
Infiltration Systems	Soakaway proposed at approximately 1.8m depth	Y
Proprietary Treatment Systems	Not suitable due to Site type and scale	N
Filter Strips	Not suitable due to Site type and scale	N
Filter Drains	Not suitable due to Site type and scale	N
Swales	Not suitable due to Site type and scale	N
Bio-Retention Systems	Not suitable due to Site type and scale	N
Trees	Not extensive due to Site type and scale, some planting will be done on site	Y
Attenuation Storage Tanks	NA- it is not proposed to connect to a storm drain, therefore an attenuated flow is not required	N
Detention Basin	Not suitable due to site type and scale	N
Ponds & Wetlands	Not suitable due to site type and scale	N
Pervious Pavements	Not suitable due to scale of the site and the maintenance required	N

The surface water on the site will discharge to a soakaway via an oil interceptor. The soakaway will have a storage volume suitable for the infiltration test results.

WM11-10 & Paragraph 11.10.4 of Dev't Plan 2022

The following table is to be attached to a Drainage Impact Assessment for small scale development- less than 10 houses.

TABLE 3
CORK COUNTY COUNCIL SUDS SELECTION HIERARCHY SHEET FOR SMALL-SCALE DEVELOPMENT

SuDS Measures	**Measures to be used on site**	**Rational for selecting / not selecting measure including discharge rate applied with supporting calculations**
Water butt – 150L capacity or more (based water use demand) with means of overflow	No	Open to vandalism/interference and surface water to be discharged on site
Permeable paving – consider for all hard paved areas without heavy traffic	NO	Not suitable for maintenance reasons
Bio-retention planter – disconnect downpipe connection into drains and allow roof runoff into planter with means of overflow	NO	Surface water to be discharged on site by soakaway
Green / Blue Roof – requires a minimum substrate depth (growth medium) of at least 80 mm excluding the vegetative map	NO	Not suitable for type and scale of development
Rain garden - disconnect downpipe/RWP into the planted flower bed	NO	Surface water to be discharged on site by soakaway
Soakaway	YES	Ground conditions are suitable for a soakaway on site
Other	Footpaths	Paths around houses will be sloped to drain to green areas

Cork County Council requires a softer engineered or 'nature-based approach' to be used to manage rainfall runoff on the site i.e., to manage and treat surface water above-ground rather than sending rainfall below-ground into drains, pipes, attenuation tanks and other 'hard engineering' solutions. The aim is to maximise the retention and/or infiltration of storm water runoff onsite, minimise discharges to the public drainage system and to limit the discharge rates from the site to greenfield runoff rate or less.

The surface water generated on this development will all be discharged on site, there will be no attenuation tank or discharge to public drainage system. The site has been assessed and is suitable for a soakaway. There will be an overflow from the soakaway to the storm sewer in St. Gobnaits Terrace as a redundancy only.

Surface water runoff

Exercise in looking at surface water drainage "effective area" runoff for the site.

Areas to be included in the "effective area" are surface areas of roofs, paths, roads, parking bays, lawns, gardens & green surfaces.

Based on the topographic survey and the utility survey it appears that the adjoining site to the north is served by an existing soakaway on the proposed site. It also appears that the newer part of the development on St. Gobnait Terrace is served by this existing soakaway. It is proposed to create a new soakaway which will serve the adjoining site to the north, part of existing St. Gobnait Terrace and the new proposed development.

An impermeability factor of 1.0 is used for roofs, 0.9 is used for footpaths and hard standing areas, a factor of 0.2 is used for green areas and back gardens.

420sqm of roofs x 1.0= 1,840sqm (x1)= 1,840sqm
1050sqm of footpaths and roads x 0.9= 3,900sqm (x0.9)= 3,510sqm
2650sqm of green area contributing x 0.2= 4,300sqm (x0.2)= 860sqm

Overall Effective Runoff = Total Impermeable area = Ap = **6,210m^2**

Proposed to use Infiltration Pluvial Cube system which consists of modular polypropylene units, low flow maintenance and self-cleaning channels.

Note prior to discharge to the soakaway, the rainwater runoff from the proposed overall development is proposed to go through a hydrocarbon interceptor & silt trap.

Sewers carrying domestic surface water from the proposed housing development shall have a sewer minimum sewer size of 225mm and the gradients are to achieve self cleansing velocities.

The soakaway design in accordance with BRE365 and CIRIA C753 is as follows: -

Infiltration testing in accordance with BRE365 was carried out on the site at two locations by Priority Geotechnical. The results of the testing were variable giving infiltration co-efficient between 4.85E-05 and 2.58E-05 m/sec. The worst result from the testing is conservatively used this design. It is recommended to install a soakaway to approximately 1.8m depth on the southern side of the proposed development. The proposed soakaway is designed for a 10yr storm with 10% allowance for climate change. The proposed plan area of the soakaway is 225sqm and minimum required depth of the soakaway is 660mm, **therefore a 800mm deep system** is selected.

The soil infiltration rate is taken from the site testing in accordance with BRE365 undertaken by Priority Geotechnical Ltd.

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Project				Job Ref.	
Proposed devt. at St. Gobnait Tce., Ballyvourney				0587000	
Section				Sheet no./rev	
Surface Water Disposal				Rev 3	
Calc. By	Date	Chck'd by	Date	App'd by	Date
G.R.	Oct '24	BA	Oct '24		

SOAKAWAY DESIGN

In accordance with CIRIA C753 SUDS

Tedds calculation version 2.0.05

Design rainfall intensity

Location of catchment area; Other

Impermeable area drained to the system; A = **6210.0** m^2

Return period; Period = **10** yr

Ratio 60 min to 2 day rainfall of 5 yr return period; r = **0.360**

5-year return period rainfall of 60 minutes duration; M5_60min = **19.0** mm

Increase of rainfall intensity due to global warming; $p_{climate}$ = **10** %

Soakaway / infiltration trench details

Soakaway type; Rectangular

Width of pit; w = **15000** mm

Length of pit; l =**15000** mm

Percentage free volume; V_{free} = **95** %

Soil infiltration rate; f = **26.0×10^{-6}** m/s

Base area; $A_b = w \times l$ = **225000000** mm^2

Perimeter; $P = 2 \times (w + l)$ = **60000** mm

Coefficient b; $b = P \times f / (A_b \times V_{free})$ = **0.03** hr^{-1}

Table equations (Eq. 25.4)

Rainfall intensity; $i = M10 / D$

Coefficient a; $a = A_b / P - (A \times i / (P \times f))$

Minimum depth required; $H = a \times (e^{(-bD)} - 1)$

Duration, D (min)	Growth factor Z1	M5 rainfalls (mm)	Growth factor Z2	10 year rainfall, M10 (mm)	Intensity, i (mm/hr)	a (mm)	Min depth req (mm)
5;	0.36;	7.5;	1.18;	8.9;	106.55;	-114068;	249
10;	0.51;	10.7;	1.19;	12.7;	76.19;	-80498;	352
15;	0.62;	13.0;	1.20;	15.5;	61.99;	-64793;	424
30;	0.79;	16.5;	1.20;	19.8;	39.53;	-39957;	521
60;	1.00;	20.9;	1.19;	24.8;	24.83;	-23710;	615
120;	1.22;	25.5;	1.18;	30.1;	15.04;	-12885;	660
240;	1.48;	30.9;	1.18;	36.5;	9.12;	-6332;	632
360;	1.67;	34.9;	1.18;	41.0;	6.84;	-3809;	555
600;	1.90;	39.7;	1.17;	46.5;	4.65;	-1389;	321
1440;	2.42;	50.6;	1.16;	58.6;	2.44;	1048;	0

Minimum depth of soakaway; H_{max} = **660** mm

Time to empty soakaway to half vol. - Eq.24.6(2); $t_{s50} = V_{free} \times A_b / (f \times P) \times Ln((H_{max} + A_b / P) / (H_{max} / 2 + A_b / P))$ = 2hr 57min 31s

PASS - Soakaway discharge time less than or equal to 24 hours

Design of collection system

It is proposed to use a pluvial cube attenuation system with 95% voids. The standard dimensions of each crate is 1000x500x400mm deep, the proposed soakaway size is 225sqm (30m x 7.5m) x 0.8m deep.

The proposed surface water drainage proposal includes a gravity surface water collection system which incorporates an underground drainage pipe network.

All proposed drainage works is designed to comply with and be carried out in accordance with the current edition of the *Recommendations for site development works for Housing Areas* published by the *Department of Environment and Local Government.*
Drainage works also shall comply with Irish Water/Local Authority requirements.

The system will have an overflow from the soakaway to the storm water drain in St. Gobnaits Terrace.

The soakaway overflow will have a hydro break restricting flow to the greenfield run-off equivalent (4.64l/sec, rounded to 5l/sec). See the following calculations for the equivalent greenfield run-off using the HR Wallingford procedure.

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Project				Job Ref.	
Proposed devt. at St. Gobnait Tce., Ballyvourney				0587000	
Section				Sheet no./rev	
Surface Water Disposal				Rev 3	
Calc. By	Date	Chck'd by	Date	App'd by	Date
G.R.	Oct '24	BA	Oct '24		

hr wallingford

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Brendan Ahern
Site name:	St Gobnaits Terrace
Site location:	Ballyvourney

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:	51.94173° N
Longitude:	9.15884° W
Reference:	482122118
Date:	Jan 14 2025 13:37

Runoff estimation approach: IH124

Site characteristics

Total site area (ha): 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):	1555	1555
Hydrological region:	13	13
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	1.65	1.65
Growth curve factor 100 years:	1.95	1.95
Growth curve factor 200 years:	2.15	2.15

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):	4.64	4.64
1 in 1 year (l/s):	3.94	3.94
1 in 30 years (l/s):	7.65	7.65
1 in 100 year (l/s):	9.04	9.04
1 in 200 years (l/s):	9.97	9.97

Cl/SfB (29)

NSAI Agrément

IRISH AGRÉMENT BOARD
CERTIFICATE NO. 18/0401

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Rochdale, OL11 4EZ
Tel: +44(0)1706 374416 Fax: 01706376785
Email: info@alderburgh.com

Pluvial Cube Attenuation and Infiltration Systems

Stürmen Sie Wasser Leitung System

NSAI Agrément (Irish Agrément Board) is designated by Government to carry out European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are **'proper materials'** suitable for their intended use under Irish site conditions and in accordance with the **Building Regulations 1997 to 2017.**

PRODUCT DESCRIPTION:
This Certificate relates to the Pluvial Cube attenuation and infiltration system which comprises of modular polypropylene units which, in conjunction with a satisfactory civil engineering design, will act as either an attenuation or infiltration vessel as part of a sustainable drainage system.

The Pluvial Cube system consists of modular polypropylene units, low flow maintenance and self-cleaning channels.

USE:
The product is used as a subsurface stormwater management system, used for sub-surface water storage or as a soakaway to manage rain water run-off from impermeable surfaces. Subject to site conditions and restraints, the Pluvial Cube system modules can be built up to create the volumetric capacity required for

- Attenuation system
- Infiltration system.
- Or a combined attenuation/infiltration system.

MANUFACTURE AND MARKETING:
The product is manufactured and marketed by:

Alderburgh Ltd.
Solution House,
Dane Street,
Rochdale,
OL11 4EZ.
Tel: +44(0)1706 374416 Fax: 01706376785
Email:info@alderburgh.com

NSAI Agrément

Part One / Certification 1

1.1 ASSESSMENT

In the opinion of NSAI Agrément, the Pluvial Cube system, if used in accordance with this Certificate, meets the requirements of the Building Regulations 1997 - 2017 as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS 1997 to 2017

REQUIREMENT:

Part A – Structure

A1 - The Pluvial Cube system, as certified in this Certificate, can be designed to ensure that the combined dead and imposed loads are sustained and transmitted to the ground in compliance with CIRIA C737 *Structural and geotechnical design of modular geocellular drainage systems.*

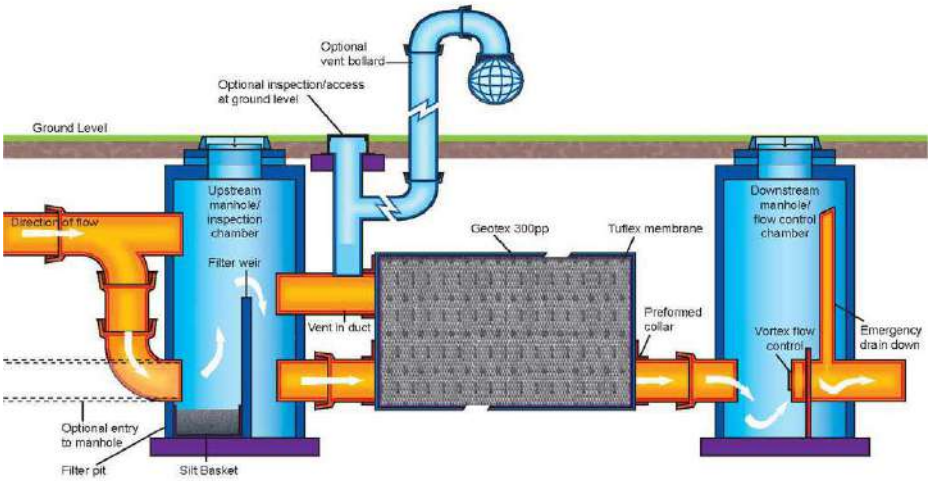
Part D - Materials & Workmanship

D3 – The Pluvial Cube system, as certified in this Certificate, is comprised of proper materials fit for their intended use (See Part 4 of this Certificate).

D1 – The Pluvial Cube system, as certified in this Certificate, meets the requirements of the building regulations for workmanship.

Part H – Drainage and waste water disposal.

H1 - The Pluvial Cube system, as certified in this Certificate, meets the requirements of the building regulations for the adequate disposal of surface water from the building.



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Project				Job Ref.	
Proposed devt. at St. Gobnait Tce., Ballyvourney				0587000	
Section				Sheet no./rev	
Foul wastewater discharge					
Calc. By	Date	Chck'd by	Date	App'd by	Date
G.R.	Oct '24	B.A.	Oct '24		

Proposed Foul Wastewater discharge

The new site proposal includes 8 dwellings. The utilities survey indicates a 225mm diameter PVC sewer line running through the site- it appears that this sewer line serves the development adjacent to the north of the proposed site which has 8 dwellings and a community building. It is proposed to divert this sewer line around the proposed development and connect to it. This sewer line is not indicated on Irish Water records, the sewer serving St. Gobnaits Terrace shown on IW records stops approximately 50m before the proposed development.

Sewers carrying domestic wastewater from this proposed housing development should be designed to carry a minimum wastewater volume of six times dry weather flows (6DWF).

Dry weather flows (DWF) is taken as 900 litres per dwelling (four persons per house and a per capita wastewater flow of 225 litres per head per day).

Total Dry weather flow (DWF) = 8 x 900/24/60/60 = 0.083l/s

Foul Pipe Network is designed to carry a minimum wastewater volume of six times dry weather flows (6DWF).

6 DWF = 6 x 0.083 = 0.5 l/s

Typical Organic Loading :

TABLE 1: INFLOW WASTEWATER CHARACTERISTICS* FROM EPA STUDY (DOMESTIC SOURCES)

Parameter	Mean	Standard Deviation
SS	163	136
BOD_5	168	127
COD	389	310
O-PO_4	7.1	4.2
Total-N	40.6	19.0
NH_3-N	31.5	15.6
NO_2-N	0.25	0.41
NO_3-N	0.04	0.06
pH	7.5	0.5
Total-coli	1×10^8	2×10^8
E-coli	4×10^7	5×10^7

* all results in mg/l, except bacterial counts which are expressed in colony forming units, CFU per 100 ml

TABLE 2.2 TYPICAL CHARACTERISTICS OF URBAN WASTE WATER

Parameter	Concentration mg/l
BOD	100 - 300
COD	250 - 800
Suspended solids	100 - 350
Total nitrogen (as N)	20 - 85
Ammonia (NH_3 as N)	10 - 30
Organic phosphorus (as P)	1 - 2
Inorganic phosphorus (as P)	3 - 10
Oils, fats and grease	50 - 100
Total inorganic constituents (Na, Cl, Mg, S, Ca, K, Si, Fe)	100
Heavy metals (Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn)	<1mg/l each

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Section				Sheet no./rev	
Water Supply				1	
Calc. By	Date	Chck'd by	Date	App'd by	Date
G.R.	Oct '24	B.A.	Oct '24		

Proposed Water Supply.

The new site proposal includes 8 dwellings. It is proposed to connect to existing watermains in the public road serving St. Gobnait Terrace, to the southeast of the proposed development.
Please refer to proposed watermain layout. The exact location of the watermain to connect on site may need to change on site. The current location is shown connecting to the watermain on IW records.

The water demand includes: Average domestic daily demand in the development is established based on daily per-capita consumption, house occupancy, number of properties. For design purposes the average daily domestic demand is be based on a per-capita consumption of 225 l/person/day and an average occupancy ratio of 4 persons per dwelling.

8 dwellings :8x225x4

Total average daily demand = 7,200 litres

The average day/peak week demand should be taken a 1.25 times the average daily domestic demand.
Total average day/peak demand = 7,200 x 1.25 = 9,000 litres

The peak demand for sizing of the pipe network will normally be 2.1 times the average day, peak week demand.
Total average day/peak demand = 9,000 x 2.1 = 18,900 l/day or 0.219 l/sec

CEMP (Construction Environmental Management Plan)
A Construction Environmental Management Plan will be developed by the contractor prior to commencement of any works on site. This summary CEMP will set out the main points to be covered in the CEMP and the CEMP will be viewed as a live document subject to change and adaptability.

The CEMP will address the following issues:-

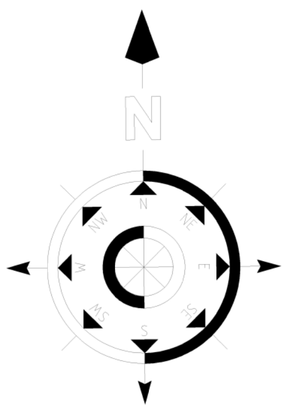
- Site set up
  - The site set up will establish and secure the site boundaries, create a site access. Create level areas for construction and include the site compound (see drawing appended to this report, site compound to be 10m from 0.1% OPW flood)
- Program
  - The program shall identify the sequence of works and identify the larger items to be considered in terms of environmental management.
- Environmental Control
  - Noise
    - General considerations
    - Machine and plant noise
    - Ground works
    - Noise monitoring and legislation
    - Use of hearing protection
  - Surface water management plan
    - Overview, contractor will consult CIRIA guidance documents "Control of Water Pollution from Construction Sites 2001," and "Control of Water Pollution from Linear Construction Projects 2006" for best practice measures for controlling water pollution.
    - Sediment erosion control
    - Protecting water quality and environmental management including reference to AA screening report for the site, all site personnel to be made aware of environmental responsibilities, incident management and reporting.
    - De- watering, cut-off ditches, use of bunds at edges of excavations
    - Spoil Management
    - Concrete and materials delivery, storage and handling
    - Pollution control an Environmental Management
    - Oil and fuel spills from construction plant
  - Air quality/dust control

	○ Invasive species, contractor shall refer to relevant guidelines and codes of practice for noxious weeds and non-native invasive plant species. • Health & Safety procedures and emergency planning • Waste Management ○ Waste prevention and waste regulations ○ Waste Management Acts 1996-2011 (The Act) ○ DoEHLG Best practice Guidelines on preparation of Waste Management Plans for construction and demolition Projects 2006 ○ EPA Guidelines including the 2015 Guidelines- Waste classification List and determining if waste is hazardous or not ○ Cork County Council Development Plan and its Waste management Objectives.	

Original Drawing Size A1

Notes

1. DO NOT SCALE DRAWING. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL, MECHANICAL/ELECTRICAL AND ENGINEERING DRAWINGS.
3. FOR ALL SETTING OUT, REFER TO ARCHITECTS DETAILS.
4. ALL WORKS CARRIED OUT MUST COMPLY WITH THE RELEVANT PARTS OF THE CURRENT BUILDING REGULATIONS AND TECHNICAL GUIDANCEDOCUMENTS, ENSURING THE WORKS ARE CARRIED OUT USING 'PROPER MATERIALS WHICH ARE FIT FOR USE FOR WHICH THEY ARE INTENDED AND FOR THE CONDITIONS IN WHICH THEY ARE USED'.
5. ALL MATERIALS USED SHALL BE 'CE' MARKED IN ACCORDANCE WITH THE EU CONSTRUCTION PRODUCT REGULATIONS (CPR) (No.305/2011). REFER TO ANNEX IV OF THE REGULATIONS FOR THE LIST OF APPLICABLE PRODUCTS.
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH RKA GENERAL, CIVIL & STRUCTURAL SPECIFICATION.
7. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES IMMEDIATELY.
8. POSITIONS OF EXISTING MAIN SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. ACTUAL POSITIONS OF PIPEWORK MUST BE ESTABLISHED ON SITE BY THE CONTRACTOR BY HAND DUG TRIAL HOLES.
9. RKA CONSULTING ENGINEERS WILL NOT ACCEPT ANY RESPONSIBILITY FOR THE POSITIONAL ACCURACY OF THE PLANT SHOWN ON THIS DRAWING NOR ANY OMMISSION FROM SAME OF SERVICE PIPES WHICH ARE NOT SHOWN ON THE PLAN.
10. CONTRACTOR TO ALLOW FOR LOCATING ALL EXISTING MAINS AS REQUIRED TO ACCOMMODATE DIVERSION AND/OR REPLACEMENT OF EXISTING SERVICES AS SHOWN ON THIS DRAWING.
11. CONTRACTOR TO ENSURE THAT WATER SUPPLIES ARE MAINTAINED TO ALL EXISTING USERS AT ALL TIMES DURING THE CONTRACT.
12. CONTRACTOR TO ALLOW FOR HAND DIGGING TO LOCATE EXISTING SERVICES AS REQUIRED.
13. CONTRACTOR TO KEEP FULL RECORDS OF POSITIONS OF ALL PIPEWORK AND CONNECTIONS AND ON COMPLETION, FULL AS-BUILT DRAWINGS TO BE PRODUCED BY THE CONTRACTOR.
14. LOCATION OF PROPOSED PIPEWORK ARE INDICATIVE ONLY. ALL WORKS TO BE AGREED WITH UISCE EIREANN AND EMPLOYERS REPRESENTATIVE.
15. DETAILS OF THE TREATMENT OF ALL EXISTING WATER SERVICES TO THE SITE SHALL BE AGREED WITH UISCE EIREANN/ CORK COUNTY COUNCIL WATER DEPT.
16. ALL ROAD AND FOOTWAY FITTING COVERS, SHALL BE MARKED TO INDICATE WHAT IS UNDERNEATH.
17. ALL WATERMAINS TO BE LAID TO CURRENT IRISH WATE STANDARDS PLEASE REFER TO UISCE EIREANN CONNECTION AND DEVELOPER SERVICES WATER INFRASTRUCTURE STANDARD DETAILS DOCUMENT NUMBER IW-CDS-5020-01 & CODE OF PRACTICE FOR WATER INFRASTRUCTURE DOCUMENT NUMBER IW-CDS-5020-03.
18. WORKS TO BE CARRIED OUT IN ACCORDANCE WITH RECOMMENDATIONS FOR SITE DEVELOPMENT WORKS FOR HOUSING AREAS NOVEMBER 1998 AND IN ACCORDANCE WITH LATEST UISCE EIREANN SPECIFICATIONS AND SPECIFICATIONS OF ALL UTILITY PROVIDERS.
19. SETTING OUT TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. SPOT LEVELS RELATE TO UNITS IN METRES.
21. DIMENSIONS ARE IN MILLIMETRES.



LEGEND:

- Existing Storm Sewer
- Proposed Storm Sewer
- Proposed Storm Manhole — SMH 01
- Proposed Bypass Seperator (See Note 'A')

NOTES:

All Works Outside Site Boundary In Public Area To Be Carried Out By Main Contractor.

All Works Within Site Boundary To Be Carried Out By Main Contractor.

New Storm Sewer To Be Encased In 150mm Concrete, Until Cover Is 1200mm.

Allow For Crossing Existing Foul & Storm Sewer Connections.

Allow For Crossing Existing Utility Services.

NOTE 'A' - The Bypass Seperator Chosen Is To Be In Accordance With ISEN 858-1 & It's Design Is To Include The Necessary Volume Requirements For:

-Oil Seperation Capacity
-Silt Storage Capacity
-Oil Storage Volume
-Coalescer
The Bypass Seperator Chosen, Which Is To Be Agreed With The Clients Representative, Is To Be Of Roto-Moulded Chamber Construction & Is To Cater For An Impermeable Area Up To 5,800 sq.m².

PROPOSED STORM SEWER LAYOUT
SCALE 1:200

Rev	Date	Drawn	Description	Ch'k'd
PL2	Jan. '24	GR	Re-Issued for Planning	BA
PL1	Nov. '24	GR	Re-Issued for Planning	BA
PL	Oct. '24	GR	Issued for Planning	BA

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E: admin@rka.ie
W: www.rka.ie
ISO 9001 REGISTERED FIRM
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:
CORK COUNTY COUNCIL

Project:
Proposed Social Housing Units
at St. Gobnaits Estate, Ballyvourney,
Co. Cork.

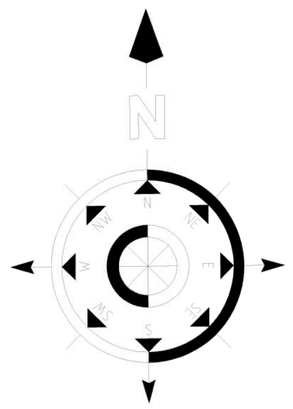
Drawing Title:
Proposed Storm Sewer Layout

Designed:	BA	Drawn:	GR	Date:	Oct. '24
Eng Chk:	BA	Dwg. Chk:	BA	Scale:	As Shown
Project. No:	587				
Drawing No:	502			Status:	Planning
				Rev:	PL2

Original Drawing Size A1

Notes

1. DO NOT SCALE DRAWING. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL, MECHANICAL/ELECTRICAL AND ENGINEERING DRAWINGS.
3. FOR ALL SETTING OUT, REFER TO ARCHITECTS DETAILS.
4. ALL WORKS CARRIED OUT MUST COMPLY WITH THE RELEVANT PARTS OF THE CURRENT BUILDING REGULATIONS AND TECHNICAL GUIDANCEDOCUMENTS, ENSURING THE WORKS ARE CARRIED OUT USING 'PROPER MATERIALS WHICH ARE FIT FOR USE FOR WHICH THEY ARE INTENDED AND FOR THE CONDITIONS IN WHICH THEY ARE USED'.
5. ALL MATERIALS USED SHALL BE 'CE' MARKED IN ACCORDANCE WITH THE EU CONSTRUCTION PRODUCT REGULATIONS (CPR) (No.305/2011). REFER TO ANNEX IV OF THE REGULATIONS FOR THE LIST OF APPLICABLE PRODUCTS.
6. THIS DRAWING TO BE READ IN CONJUNCTION WITH RKA GENERAL, CIVIL & STRUCTURAL SPECIFICATION.
7. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES IMMEDIATELY.
8. POSITIONS OF EXISTING MAIN SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. ACTUAL POSITIONS OF PIPEWORK MUST BE ESTABLISHED ON SITE BY THE CONTRACTOR BY HAND DUG TRIAL HOLES.
9. RKA CONSULTING ENGINEERS WILL NOT ACCEPT ANY RESPONSIBILITY FOR THE POSITIONAL ACCURACY OF THE PLANT SHOWN ON THIS DRAWING NOR ANY OMMISSION FROM SAME OF SERVICE PIPES WHICH ARE NOT SHOWN ON THE PLAN.
10. CONTRACTOR TO ALLOW FOR LOCATING ALL EXISTING MAINS AS REQUIRED TO ACCOMMODATE DIVERSION AND/OR REPLACEMENT OF EXISTING SERVICES AS SHOWN ON THIS DRAWING.
11. CONTRACTOR TO ENSURE THAT WATER SUPPLIES ARE MAINTAINED TO ALL EXISTING USERS AT ALL TIMES DURING THE CONTRACT.
12. CONTRACTOR TO ALLOW FOR HAND DIGGING TO LOCATE EXISTING SERVICES AS REQUIRED.
13. CONTRACTOR TO KEEP FULL RECORDS OF POSITIONS OF ALL PIPEWORK AND CONNECTIONS AND ON COMPLETION, FULL AS-BUILT DRAWINGS TO BE PRODUCED BY THE CONTRACTOR.
14. LOCATION OF PROPOSED PIPEWORK ARE INDICATIVE ONLY. ALL WORKS TO BE AGREED WITH UISCE EIREANN AND EMPLOYERS REPRESENTATIVE.
15. DETAILS OF THE TREATMENT OF ALL EXISTING WATER SERVICES TO THE SITE SHALL BE AGREED WITH UISCE EIREANN/ CORK COUNTY COUNCIL WATER DEPT.
16. ALL ROAD AND FOOTWAY FITTING COVERS, SHALL BE MARKED TO INDICATE WHAT IS UNDERNEATH.
17. ALL WATERMAINS TO BE LAID TO CURRENT IRISH WATE STANDARDS. PLEASE REFER TO UISCE EIREANN CONNECTION AND DEVELOPER SERVICES WATER INFRASTRUCTURE STANDARD DETAILS DOCUMENT NUMBER IW-CDS-5020-01 & CODE OF PRACTICE FOR WATER INFRASTRUCTURE DOCUMENT NUMBER IW-CDS-5020-03.
18. WORKS TO BE CARRIED OUT IN ACCORDANCE WITH RECOMMENDATIONS FOR SITE DEVELOPMENT WORKS FOR HOUSING AREAS NOVEMBER 1998 AND IN ACCORDANCE WITH LATEST UISCE EIREANN SPECIFICATIONS AND SPECIFICATIONS OF ALL UTILITY PROVIDERS.
19. SETTING OUT TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. SPOT LEVELS RELATE TO UNITS IN METRES.
21. DIMENSIONS ARE IN MILLIMETRES.



LEGEND:

- Existing Public Sewer
- Proposed Foul Sewer (Self Lay) Works Outside Red Boundary By Uisce Eireann
- FMH 01 — Proposed Foul Manhole
- IC — Proposed Inspection Chamber (Refer to IW Detail STD-WW-13)

NOTES:

All Works & Fittings To Be Carried Out In Accordance With Uisce Eireann Standards.

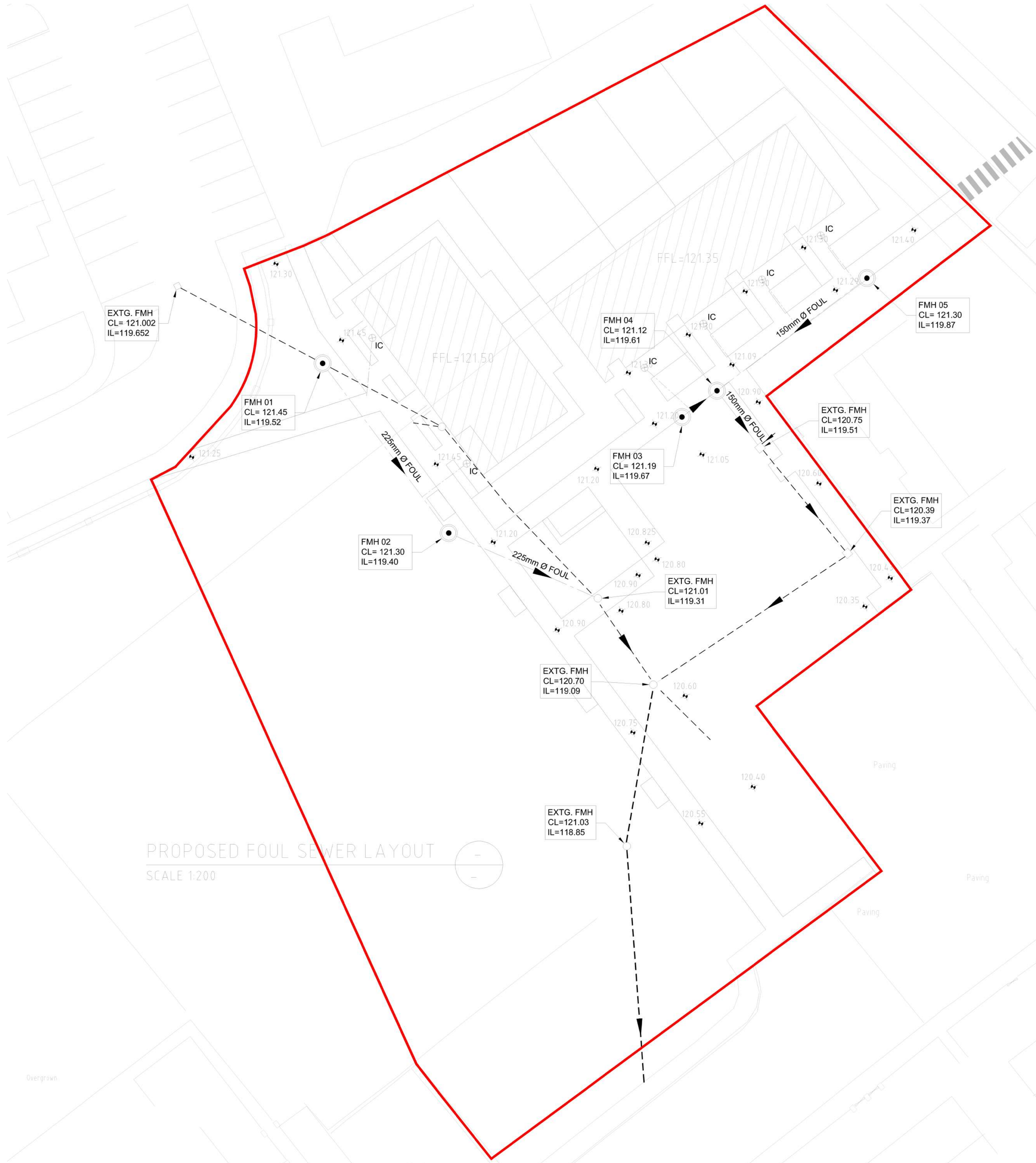
All Works Outside Site Boundary In Public Area To Be Carried Out By Uisce Eireann.

All Works Within Site Boundary To Be Carried Out By Main Contractor.

New Foul Sewer To Be Encased In 150mm Concrete, Until Cover Is 1200mm.

Allow For Crossing Existing Foul & Storm Sewer Connections.

Allow For Crossing Existing Utility Services.



PROPOSED FOUL SEWER LAYOUT

SCALE 1:200

Rev	Date	Drawn	Description	Ch'k'd
PL1	Jan. '24	GR	Re-Issued for Planning	BA
PL	Oct. '24	GR	Issued for Planning	BA

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CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

ISO 9001 REGISTERED FIRM

Client:
CORK COUNTY COUNCIL

Project:
Proposed Social Housing Units
at St. Gobnaits Estate, Ballyvourney,
Co. Cork.

Drawing Title:
Proposed Foul Sewer Layout

Designed:	BA	Drawn:	GR	Date:	Oct. '24
Eng Chk:	BA	Dwg. Chk:	BA	Scale:	As Shown
Project. No:	587				
Drawing No:	501	Status:	Planning	Rev:	PL1

Original Drawing Size A1

Notes

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2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL, MECHANICAL/ELECTRICAL AND ENGINEERING DRAWINGS.
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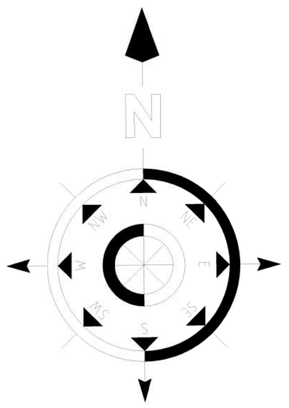


LEGEND:

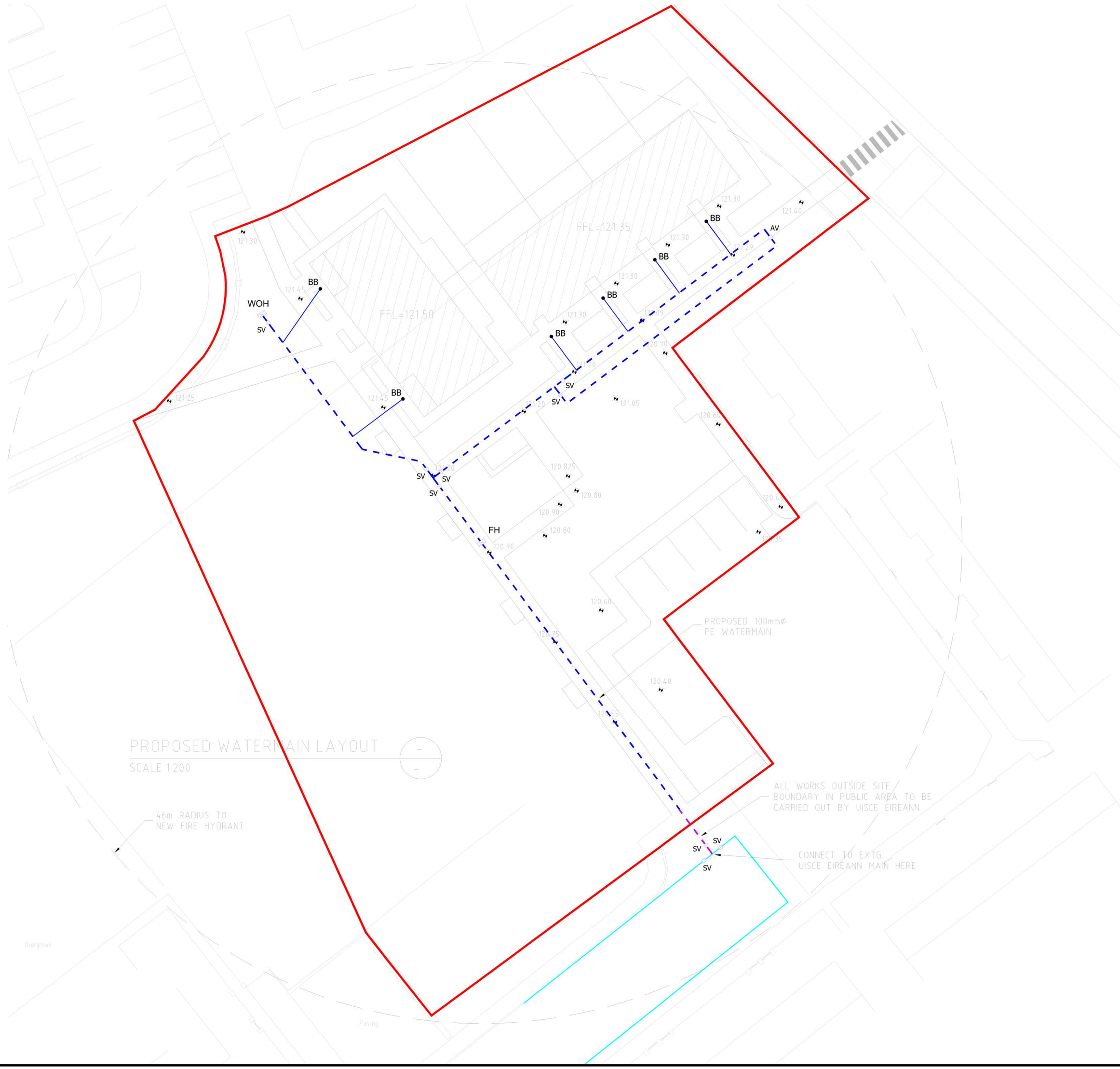
- Existing Uisce Eireann Main
- Proposed 100mmØ HDPE Watermain (Self Lay)
- Works Outside Red Boundary By Uisce Eireann
- BB — 25mm Connection Feed & Boundary Watermeter Box
- SV — Proposed Sluice Valve
- AV — Proposed Air Valve
- FH — Proposed Fire Hydrant
- WOH — Proposed Washout Hydrant
- WM — Proposed Water Meter

NOTES:

All Works & Fittings To Be Carried Out In Accordance With Uisce Eireann Standards.

All Works Outside Site Boundary In Public Area To Be Carried Out By Uisce Eireann.

All Works Within Site Boundary To Be Carried Out By Main Contractor.



PROPOSED WATERMAIN LAYOUT
SCALE 1:200

Rev	Date	Drawn	Description	Ch'k'd
PL1	Jan. '25	GR	Re-Issued for Planning	BA
PL	Oct. '24	GR	Issued for Planning	BA

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E: admin@rka.ie
W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client:
CORK COUNTY COUNCIL

Project:
Proposed Social Housing Units
at St. Gobnaits Estate, Ballyvourney,
Co. Cork.

Drawing Title:
Proposed Watermain Layout

Designed:	BA	Drawn:	GR	Date:	Oct. '24
Eng Chk:	BA	Dwg. Chk:	BA	Scale:	As Shown
Project. No:	587				
Drawing No:	500	Status:	Planning	Rev:	PL1

Original Drawing Size A3

Notes

LEGEND:

01 / 02 = SECTION MARK '01' - ON DWG. No. '02'

= 0.1% AEP FLUVIAL EXTENT (LOW RISK)

= 1% AEP FLUVIAL EXTENT (MEDIUM RISK)

= 10% AEP FLUVIAL EXTENT (HIGH RISK)

0.1% AEP FLOOD LEVEL LINE ADVISE BY OPW (120.835 OPW FLOOD LEVEL)

St. Gobnait's Estate (EXISTING)

No. 24

No. 23

No. 22

No. 28 No. 27 No. 26 No. 25

FFL=120.800 FFL=120.807 FFL=120.813 FFL=120.811

No. 29 No. 28

FFL=120.949 FFL=120.948

No. 30 No. 31 No. 32 No. 33

FFL=121.350

BINS + BIKES

BINS

No. 37 No. 35 No. 36 No. 34

FFL=121.500

BIKE STORE

BIKES SHELTER

AREA FOR 20m x 10m

PROPOSED CONTRACTOR'S COMPOUND DURING CONSTRUCTION

EXISTING OPEN AREA

0.1% AEP FLOOD LEVEL LINE ADVISE BY OPW (120.835 OPW FLOOD LEVEL)

Rev	Date	Drawn	Description	Ch'k'd
R 2	Feb. '25	TA	Issued for Flood Risk Assessment Report	BA
R 1	Dec. '24	TA	Issued for Flood Risk Assessment Report	BA
R	Sep. '24	TA	Issued for Flood Risk Assessment Report	BA

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W: www.rka.ie
CONSULTING ENGINEERS
CIVIL | STRUCTURAL | PROJECT MANAGEMENT

Client :

Cork County Council

Project :

Proposed Housing Development
at St. Gobnaits, Ballyvourney,
Co. Cork.

Drawing Title :

Proposed Development Overlaid onto OPW Flood Maps

Designed:	-	Drawn:	TA	Date:	Sep. '24
Eng Chk:	BA	Dwg. Chk:	BA	Scale:	A3 @ 1:500
Project. No:	587-000				
Drawing No:	01			Status:	Report
				Rev:	R 2

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

Ciarán Galvin

Cork County Council
The Courthouse
Skibbereen
Co. Cork
P81 DW52

17 April 2024

Our Ref: CDS24001088 Pre-Connection Enquiry
Saint Gobnaits Tarrace, Ballymakeery, Co. Cork

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 8 unit(s) at Saint Gobnaits Tarrace, Ballymakeery, Co. Cork **(the Development)**.

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

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

  Records for the existing wastewater network sewer size are currently unknown at the nearest connection point. It will be necessary for the Applicant to confirm and identify the size of the wastewater network where development flows are proposed to discharge at connection application stage. If it is identified that the existing sewer size is less than 225mm dia, localised network upgrades may be required to facilitate this development connection.

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/

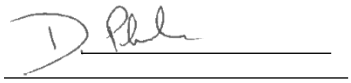
Where can you find more information?

- **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

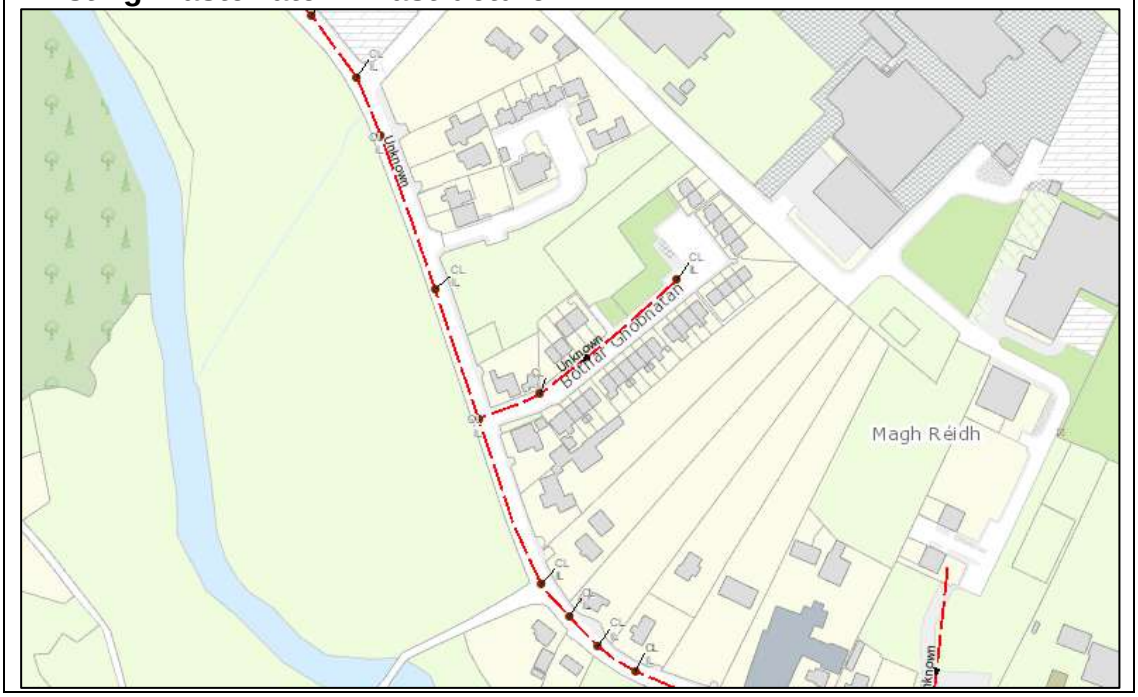
What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available 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

Existing Water Infrastructure:

Existing Wastewater Infrastructure:



Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

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.