



**BARRETT MAHONY**  
CIVIL & STRUCTURAL  
CONSULTING ENGINEERS

Civil Engineering Infrastructure  
Report for Planning

Project:

Cross Avenue SHD,  
Blackrock, Co. Dublin

## DOCUMENT CONTROL

Project: Cross Avenue SHD, Blackrock, Co. Dublin

Project No: 22.161

Document Title: Additional Units Engineering Infrastructure Report for Planning

Document No: CAV-BMCE-ZZ-ZZ-RP-C-01

## DOCUMENT STATUS

Issue	Date	Description	Orig.	PE	Issue Check
PL1	07/05/2024	Issue for Planning	CF	CV	CK

© Copyright Barrett Mahony Consulting Engineers. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by Barrett Mahony Consulting Engineers no other party may use, make use of or rely on the contents of this report. The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by Barrett Mahony Consulting Engineers for any use of this report, other than the purpose for which it was prepared. Barrett Mahony Consulting Engineers accepts no responsibility for any documents or information supplied to Barrett Mahony Consulting Engineers by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made. Barrett Mahony Consulting Engineers has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy. No part of this report may be copied or reproduced, by any means, without the written permission of Barrett Mahony Consulting Engineers.

Prepared by:

**BMCE**

52-54 Lower Sandwith Street  
Dublin 2  
D02 WR26

Prepared for:

**1 Players Land Ltd.**

27 Merrion Square  
Dublin 2  
D02 P297



BARRETT MAHONY  
CONSULTING ENGINEERS  
CIVIL & STRUCTURAL  
www.bmce.ie



## CONTENTS

1.	INTRODUCTION .....	1
1.1	General Description .....	1
1.2	Site Location .....	1
1.3	Scope Of This Report .....	2
2.	ACCESS AND ROADS LAYOUT .....	4
2.1	Site Access .....	4
2.2	Internal Roads Design .....	4
2.3	Parking.....	4
3.	SURFACE WATER DRAINAGE SYSTEM .....	5
3.1	Surface Water Infrastructure .....	5
3.2	SuDS Strategy.....	5
4.	FOUL DRAINAGE SYSTEM .....	6
4.1	Foul Sewer Infrastructure.....	6
4.2	Uisce Éireann (UÉ) COF & SODA .....	6
5.	WATER SUPPLY .....	7
5.1	Water Infrastructure .....	7
5.2	Uisce Éireann (UÉ) COF & SODA .....	7
6.	FLOOD RISK ASSESSMENT .....	8

## APPENDICES:

APPENDIX 1 – UISCE ÉIEREANN CONFIRMATION OF FEASIBILITY (COF) & STATEMENT OF DESIGN ACCEPTANCE (SODA)

## 1. INTRODUCTION

### 1.1 GENERAL DESCRIPTION

The permitted Cross Avenue SHD (ABP-311190-21) currently under construction consists of three blocks of residential buildings over a shared basement. From west to east, the superstructures are referred to as Block A, Block B and Block C. See Figure 1 below.

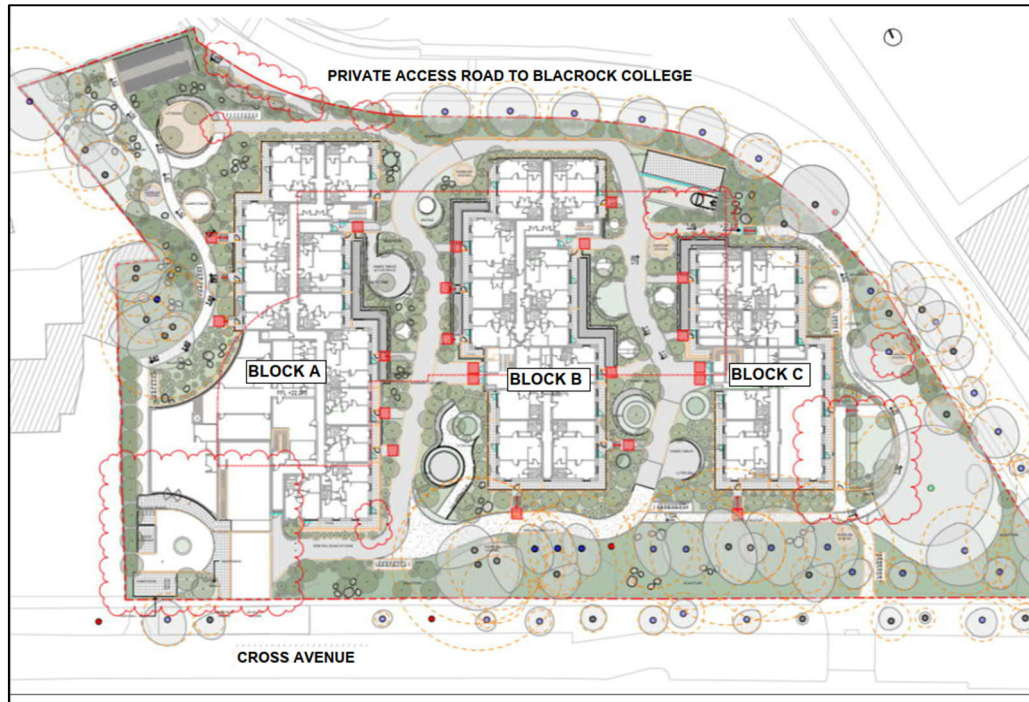


Figure 1: Site Plan

Block A is split height ranging from 1 to 5 stories. Block B is also split height with the southern portion of the footprint at 7 stories and the remaining extending to 8 stories. Block C is 9 stories tall.

The vast majority of Block A and Block B, and the north-western quarter of Block C are set over a single-level basement. The western portion of Block A, a small portion of Block B to the north and the south and the south-eastern portion of Block C is on grade.

The structure consists of reinforced concrete flat slabs, columns, and core walls. The structure is entirely reinforced concrete. It is primarily a flat slab arrangement with a single basement level below a podium slab at Level 00. The podium slab supports three separate residential blocks (Block A, Block B & Block C) and landscaping areas in between. The entire structure is supported on pad footings.

### 1.2 SITE LOCATION

The site is located in Blackrock, Co. Dublin approximately 6.5km southeast of Dublin City Centre and 600m West of the Irish Sea within the Dún Laoghaire–Rathdown County Council (DLRCC) local area. See Figure 2 below.



Figure 2: Cross Ave SHD site location & site boundary (© Google 2020)

### 1.3 SCOPE OF THIS REPORT

This report relates to Blocks A and B only in Cross Avenue SHD. It is an amendment to Cross Avenue SHD (ABP-311190-21) and as such is an LRD.

The proposed development provides for the reconfiguration of Block A and B at Level 04 and Level 07 respectively. It is proposed to add three additional units to Level 04 in Block A and two additional units to Level 07 in Block B.

A lightweight structure is proposed for these additional units to be supported of the existing reinforced concrete (RC) frame. It is proposed that the new structure for the additional units will consist of a steel frame supporting Comflor metal deck and RC roof slab. External walls will be lightweight Steel-formed sections (SFS) framing system and the new floor for the additional units is to be built up off the existing RC slab in timber.

It is proposed to maintain a lightweight green roof system for the additional units with access for maintenance only.

This report will highlight how the proposed design complies with the local authority requirements. In particular the report will address foul water drainage, surface water drainage, water supply, and roads access.

Reference was made to the following documents in the preparation of this report:

- DCC Development Plan 2022 – 2028
- DCC Sustainable Drainage Design & Evaluation Guide 2021
- The Greater Dublin Strategic Drainage Study (GSDSDS)
- The Greater Dublin Regional Code of Practice for Drainage Works
- Uisce Éireann Code of Practice for Water Infrastructure July 2020 (Revision 2)
- Uisce Éireann Code of Practice for Wastewater Infrastructure July 2020 (Revision 2)

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

DRAWING NUMBERS & TITLES

CAV-BMD-00-ZZ-DR-C-0110	Existing SuDS Layout
CAV-BMD-00-ZZ-DR-C-0111	Proposed SuDS Layout

## 2. ACCESS AND ROADS LAYOUT

### 2.1 SITE ACCESS

No change is proposed to the site access. The site access will be as per the original granted permission ABP-311190-21.

### 2.2 INTERNAL ROADS DESIGN

No change is proposed to the internal roads design. The internal roads layout will be as per the original granted permission ABP-311190-21.

### 2.3 PARKING

No change is proposed to the current car parking provision. The proposed increase in units will not have a significant impact on the parking provided. See Table 2.1 below.

Table 2.1: Summary of parking provided

	Quantity Provided	Comments based on approved 241 units	Comments based on proposed 246 units
Total Residential Car Parking Spaces	71	0.29 spaces per dwelling. This is 23.8% (71/298) of the maximum quantum sought under the DLRC Development Plan. It is therefore considered to be compliant.	0.29 spaces per dwelling
Standard Residential Car Parking Spaces	55	(Total – Disabled – GoCar)	No change
Disabled Car Parking Spaces	3	4.2% Above required rate of 4%	No change
Motorcycle Parking Spaces	10	14% Above minimum required rate of 4%	No change
GoCar (Car Club)	13	GoCar have advised that 1 No. GoCar vehicle can replace up to 15 private cars. Applying this rationale results in an equivalent provision of 58+195 = 253 no. private car spaces (incl. disabled parking spaces) This equivalent parking provision also equates to effectively 1.05 car parking spaces per residential unit i.e. (253/241)	Slight change to 1.03 car parking spaces per residential unit i.e. (253/246)

### 2.4 TRAFFIC

As there is no increase in parking, there is therefore, no increase in the traffic to be generated as a result of the proposed 5 additional units.

### 3. SURFACE WATER DRAINAGE SYSTEM

#### 3.1 SURFACE WATER INFRASTRUCTURE

The proposed additional units do not increase the building footprint area and do not give rise to an increase in impermeable surfaces. The additional units are to be located wholly within the existing building footprint of Blocks A and B. Therefore, the proposed additional units will not result in an increase in surface water discharge from the development and will have negligible impact on the existing surface water system and attenuation volumes.

The surface water system, attenuation volume provided and the rate of discharge from the site will be as per the original granted permission ABP-311190-21.

#### 3.2 SUDS STRATEGY

The SuDS strategy will be as per the original granted permission ABP-311190-21. As noted in Section 1 above, it is proposed that the new roof of the additional units will incorporate a green roof. Therefore, no decrease in green roof area is proposed and the development will still achieve a minimum of 60% green roof area. See drawings CAV-BMCE-00-ZZ-DR-C-0110 and CAV-BMCE-00-ZZ-DR-C-0111 for existing and proposed green roof areas.



## 4. FOUL DRAINAGE SYSTEM

### 4.1 FOUL SEWER INFRASTRUCTURE

Using an occupancy level of 2.7 persons/unit and a foul effluent flow of 180 litres/person/day in accordance with Uisce Éireann Guidelines, the following additional foul effluent for the proposed additional units is calculated:

Table 4.1 – Foul effluent from proposed additional units

No. of Add. Units	Pers per unit	Average Flow (l/s)	Peak Flow (l/s)
Block A			
3	8.1	0.019	0.114
Block B			
2	5.4	0.012	0.074
Total		0.031	0.188

As can be seen from Table 4.1, the proposed additional units will result in a minor increase in foul effluent from the development. The existing pipe network has sufficient capacity to cater for this small increase in foul flows. Therefore, the foul drainage system will be as per the original granted permission ABP-311190-21.

### 4.2 UISCE ÉIREANN (UÉ) COF & SODA

The original confirmation of feasibility (COF) letter and Statement of Design Acceptance (SODA) obtained from Uisce Éireann for the development was for 314 units. The approved 241 units (granted permission ABP-311190-21) plus the proposed additional 5 units gives a total of 246 units which is well below the 314 units for which the COF and SODA were provided for. Therefore, the foul system has sufficient capacity to accommodate the proposed additional 5 units.

Please see original COF and SODA in Appendix 1.

BMCE have also contacted Uisce Éireann to advise them of the proposed additional 5 units.

## 5. WATER SUPPLY

### 5.1 WATER INFRASTRUCTURE

Using an occupancy level of 2.7 persons/unit and a water demand of 180 litres/person/day in accordance with Uisce Éireann Guidelines, the following additional foul effluent for the proposed additional units is calculated:

Table 5.1 – Water Demand for proposed additional units

No. of Add. Units	Pers per unit	Average Demand (l/s)	Peak Demand (l/s)
Block A			
3	8.1	0.021	0.105
Block B			
2	5.4	0.014	0.070
Total		0.035	0.176

As can be seen from Table 5.1, the proposed additional units will result in a minor increase in water demand for the development. The watermain network has sufficient capacity to cater for this small increase in demand. Therefore, the proposed water infrastructure will be as per the original granted permission ABP-311190-21.

### 5.2 UISCE ÉIREANN (UÉ) COF & SODA

The original confirmation of feasibility (COF) letter and Statement of Design Acceptance (SODA) obtained from Uisce Éireann for the development was for 314 units. The approved 241 units (granted permission ABP-311190-21) plus the proposed additional 5 units gives a total of 246 units which is well below the 314 units for which the COF and SODA were provided for. Therefore, the watermain has sufficient capacity to accommodate the proposed additional 5 units.

Please see original COF and SODA in Appendix 1.

BMCE have also contacted Uisce Éireann to advise them of the proposed additional 5 units.

## 6. FLOOD RISK ASSESSMENT

The proposed additional units do not increase the building footprint area and do not give rise to an increase in impermeable surfaces. The additional units are to be located wholly within the existing building footprint of Blocks A and B. Therefore, the proposed additional units will not result in an increase in surface water discharge from the development and will not contribute to flooding. The Site Specific Flood Risk Assessment shall remain as per previously granted under ABP-311190-21.



## Appendix 1

# UÉ Confirmation of Feasibility Letter (COF) & Statement of Design Acceptance (SODA)

Damien Egan  
 Punch Consulting Engineers  
 97 Henry Street  
 Co.Limerick  
 V94YC2H  
 Ireland

Uisce Éireann  
 Bosca OP 448  
 Oifig Sheachadta na  
 Cathrach Theas  
 Cathair Chorcaí

Irish Water  
 PO Box 448,  
 South City  
 Delivery Office,  
 Cork City.

[www.water.ie](http://www.water.ie)

30 November 2020

**Re: CDS20007314 pre-connection enquiry - Subject to contract | Contract denied**

**Connection for Housing Development of 314 units at Cross Avenue, Blackrock, Dublin**

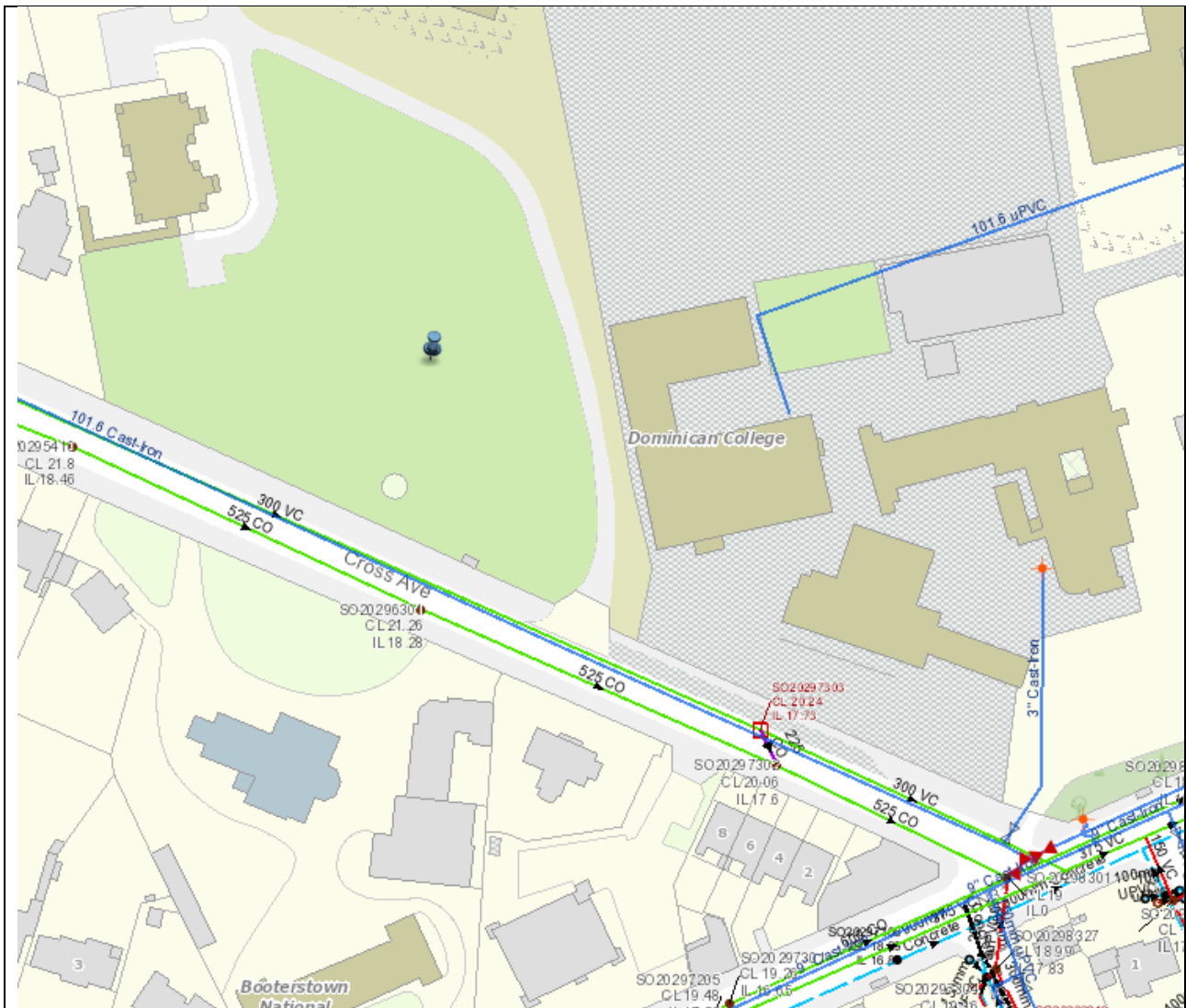
Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Cross Avenue, Blackrock, 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	<b>OUTCOME OF PRE-CONNECTION ENQUIRY</b> <b><u>THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED.</u></b>
Water Connection	Feasible Subject to upgrades
Wastewater Connection	Feasible without infrastructure upgrade by Irish Water
<b>SITE SPECIFIC COMMENTS</b>	
Water Connection	Approx. 140m of a new 150mm ID pipe main is required in Cross Avenue to connect the Development to the existing 9" CI main in Mount Merrion Avenue. A bulk meter should be installed on the connection main. Should you wish to progress with the connection, you have to fund the upgrade works and the fee will be calculated at a connection application stage.
Wastewater Connection	Separate storm and foul water connection services have to be provided for the Development. The storm water from the Site must be discharged only into the existing storm water network in Mount Merrion Avenue. The connection arrangement should be agreed with the Local Authority Drainage Division.

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:



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

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](mailto: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](mailto:mzbyrne@water.ie) For further information, visit **[www.water.ie/connections](http://www.water.ie/connections)**.

Yours sincerely,



**Yvonne Harris**

**Head of Customer Operations**



Marie-Claire Daly  
Carnegie House,  
Library Road,  
Dun Laoghaire,  
Co Dublin,  
A96 C7W7,  
Ireland

29 June 2021

**Re: Design Submission for Development at Cross Avenue, Blackrock, Co. Dublin (the “Development”) (the “Design Submission”) 202241.**

Uisce Éireann  
Bosca OP 448  
Oifig Sheachadta na  
Cathrach Theas  
Cathair Chorcaí

Irish Water  
PO Box 448,  
South City  
Delivery Office,  
Cork City.

[www.water.ie](http://www.water.ie)

Dear Marie-Claire Daly,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form at [www.water.ie/connections](http://www.water.ie/connections). Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities (CRU) ([https://www.cru.ie/document\\_group/irish-waters-water-charges-plan-2018/](https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/)).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water's network(s) (the “**Self-Lay Works**”), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water Representative

Name: Alvaro Garcia  
Phone: 022 54623  
Email: [agarcia@water.ie](mailto:agarcia@water.ie)

Yours sincerely,

**Yvonne Harris**

**Head of Customer Operations**



## Appendix A

### Document Title & Revision

- CAR-PUNCH-XX-XX-DR-C-0100-C04
- CAR-PUNCH-XX-XX-DR-C-0175-C01
- CAR-PUNCH-XX-XX-DR-C-0200-C03
- CAR-PUNCH-XX-XX-DR-C-0201-C03

For further information, visit [www.water.ie/connections](http://www.water.ie/connections)

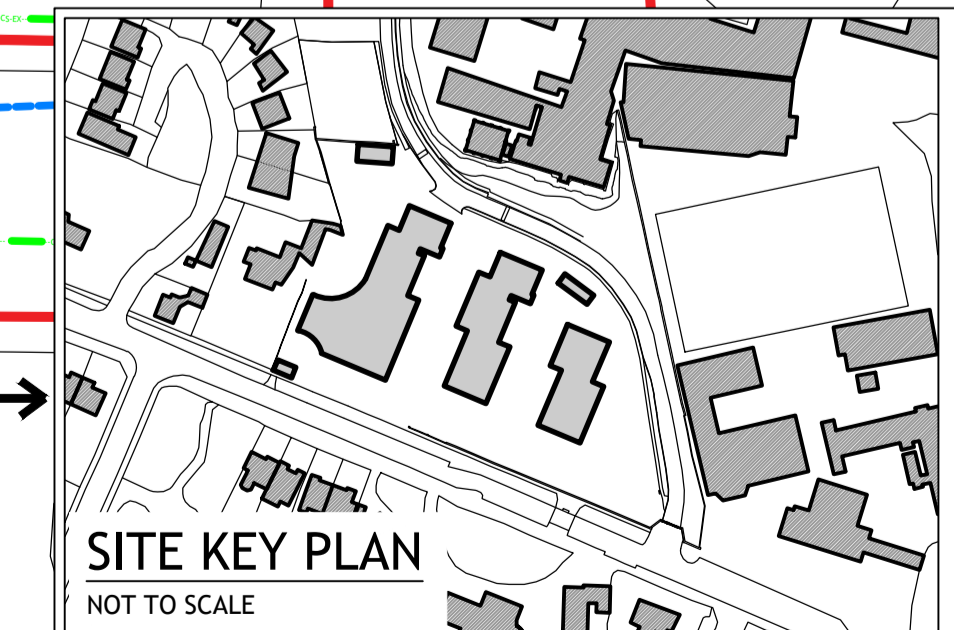
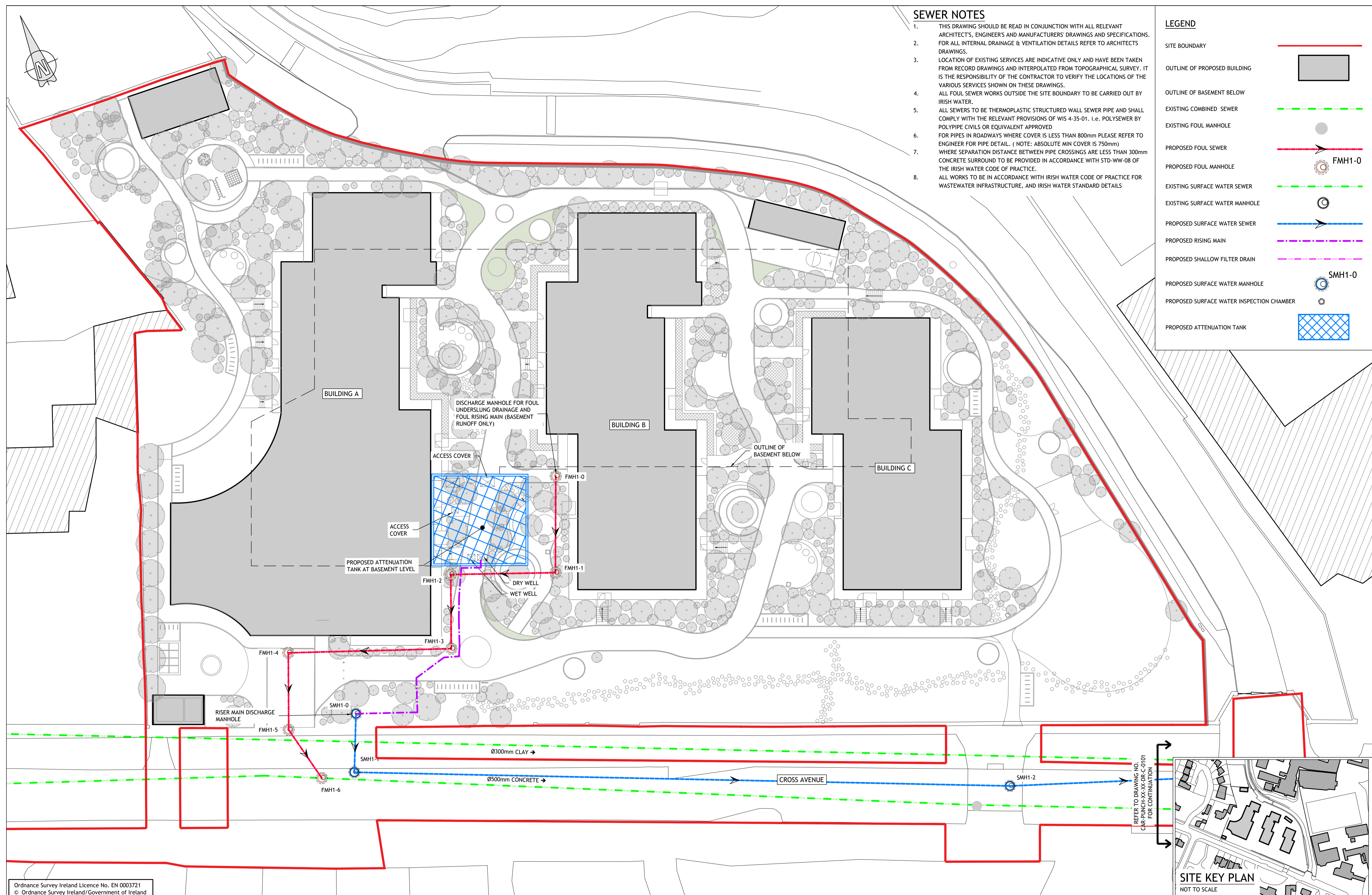
*Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.*

**SEWER NOTES**

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S AND MANUFACTURERS' DRAWINGS AND SPECIFICATIONS. FOR ALL INTERNAL DRAINAGE & VENTILATION DETAILS REFER TO ARCHITECTS DRAWINGS.
2. LOCATION OF EXISTING SERVICES ARE INDICATIVE ONLY AND HAVE BEEN TAKEN FROM RECORD DRAWINGS AND INTERPOLATED FROM TOPOGRAPHICAL SURVEY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF THE VARIOUS SERVICES SHOWN ON THESE DRAWINGS.
3. ALL FOUL SEWER WORKS OUTSIDE THE SITE BOUNDARY TO BE CARRIED OUT BY IRISH WATER.
4. ALL SEWERS TO BE THERMOPLASTIC STRUCTURED WALL SEWER PIPE AND SHALL COMPLY WITH THE RELEVANT PROVISIONS OF WIS 4-35-01. I.E. POLYSEWER BY POLYPIPE CIVILS OR EQUIVALENT APPROVED
5. FOR PIPES IN ROADWAYS WHERE COVER IS LESS THAN 800mm PLEASE REFER TO ENGINEER FOR PIPE DETAIL. ( NOTE: ABSOLUTE MIN COVER IS 750mm)
6. WHERE SEPARATION DISTANCE BETWEEN PIPE CROSSINGS ARE LESS THAN 300mm CONCRETE SURROUND TO BE PROVIDED IN ACCORDANCE WITH STD-WW-08 OF THE IRISH WATER CODE OF PRACTICE.
7. ALL WORKS TO BE IN ACCORDANCE WITH IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE, AND IRISH WATER STANDARD DETAILS

**LEGEND**

- SITE BOUNDARY
- OUTLINE OF PROPOSED BUILDING
- OUTLINE OF BASEMENT BELOW
- EXISTING COMBINED SEWER
- EXISTING FOUL MANHOLE
- PROPOSED FOUL SEWER
- PROPOSED FOUL MANHOLE
- EXISTING SURFACE WATER SEWER
- EXISTING SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER SEWER
- PROPOSED RISING MAIN
- PROPOSED SHALLOW FILTER DRAIN
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER INSPECTION CHAMBER
- PROPOSED ATTENUATION TANK



Ordnance Survey Ireland Licence No. EN 0003721  
© Ordnance Survey Ireland / Government of Ireland

© PUNCH Consulting Engineers  
This drawing and any design hereon is the copyright of the Consultants and must not be reproduced without their written consent.  
All drawings remain the property of the Consultants.  
Figured dimension only to be taken from this drawing.  
Consultants to be informed immediately of any discrepancies before work proceeds.



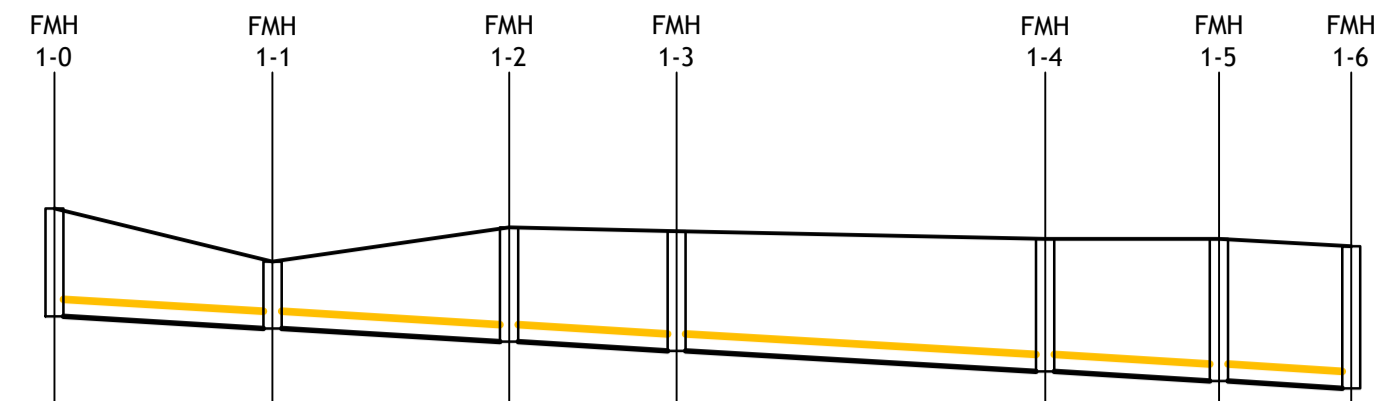
Rev	Amendment	By	Date	Rev	Amendment	By	Date
P01	PRELIMINARY ISSUE	IBS	2021/01/19	CD4	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/25
P02	PRELIMINARY ISSUE	IBS	2021/01/22				
C01	STAGE 2 SHD PLANNING ISSUE	IBS	2021/01/28				
P03	ISSUE TO IRISH WATER - APPLICATION FOR STATEMENT OF DESIGN ACCEPTANCE	MCD	2021/05/06				
C02	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/14				
C03	STAGE 3 SHD PLANNING ISSUE	VB	2021/06/16				

By	Date	Rev	Amendment	By	Date
IBS	2021/01/19	CD4	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/25

Client:  
**1 Players Land Limited**



Project:	RESIDENTIAL DEVELOPMENT, CROSS AVENUE, BLACKROCK, CO DUBLIN		
Title:	PROPOSED GROUND FLOOR DRAINAGE LAYOUT		
Drawn:	IBS	Checked:	JM
Project No:	202241	Model Ref:	CAR-PUNCH-XX-XX-DR-C-0100
Scale @ A4:	1:250	Document No:	CAR-PUNCH-XX-XX-DR-C-0100
		Revision No:	C04



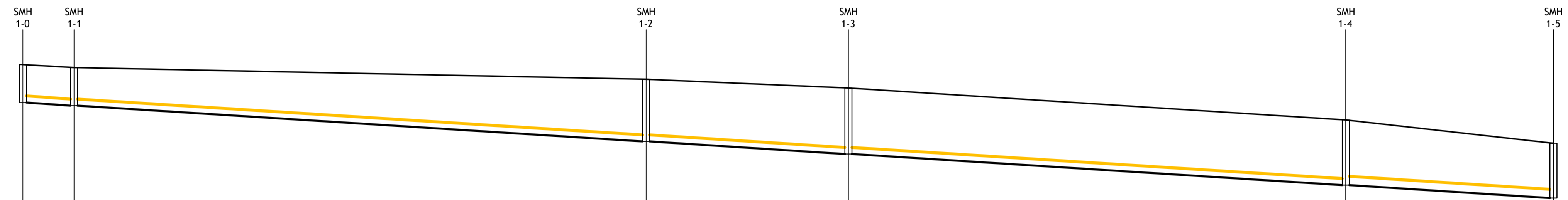
Vert exaggeration = 5.0

Datum = 18.0

Link Name	1.000	1.001	1.002	1.003	1.004	1.005
Section Type	225mm	225mm	225mm	225mm	225mm	225mm
Slope	1:90.0	1:90.0	1:90.0	1:90.0	1:90.0	1:90.0
Cover Level	22.200	21.900	21.950	21.900	21.800	21.800
Invert Level	20.775	20.615	20.441	20.318	20.047	19.919
Length	14.423	15.643	11.079	24.369	11.494	8.748

**PROPOSED FOUL WATER LONGSECTION FMH1-0 TO FMH1-6**

SCALE 1:500



Vert exaggeration = 5.0

Datum = 16.0

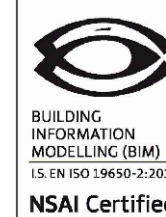
Link Name	1.000	1.001	1.002	1.003	1.004
Section Type	225mm	225mm	225mm	225mm	300mm
Slope	1:80.0	1:80.0	1:80.0	1:80.0	1:80.0
Cover Level	21.800	21.700	21.300	21.000	19.900
Invert Level	20.500	20.391	19.166	18.733	17.668
Length	8.753	98.012	34.664	85.215	35.581

**PROPOSED SURFACE WATER LONGSECTION SMH1-0 TO SMH1-5**

SCALE 1:500

© PUNCH Consulting Engineers

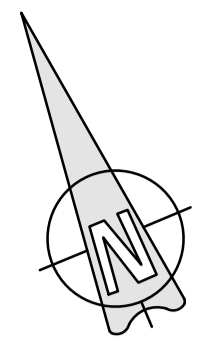
This drawing and any design herein is the copyright of the Consultants and must not be reproduced without their written consent. All drawings remain the property of the Consultants. Figured dimension only to be taken from this drawing. Consultants to be informed immediately of any discrepancies before work proceeds.



Rev	Amendment	By	Date	Rev	Amendment	By	Date	Client:
P01	PRELIMINARY ISSUE	IBS	2021/01/22					
C01	STAGE 2 SHD PLANNING ISSUE	IBS	2021/01/28					
P02	ISSUE TO IRISH WATER - APPLICATION FOR STATEMENT OF DESIGN ACCEPTANCE	MCD	2021/05/06					
C01	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/25					



Project: RESIDENTIAL DEVELOPMENT, CROSS AVENUE, BLACKROCK, CO DUBLIN				
Title: SURFACE & FOUL WATER NETWORK LONGSECTIONS				
Drawn: IBS	Date Issued: JANUARY 2021	Technician Check: IBS	Engineer Check: JM	Approved: PC
Project No: 202241	Model Ref: CAR-PUNCH-XX-XX-M2-C-0175	Drawing Status: A0		
Scale @ A1: AS SHOWN	Document No: CAR-PUNCH-XX-XX-DR-C-0175	Revision No: C01		



**PROPRIETARY PRODUCT NAMES, MANUFACTURER'S NAMES, SUPPLIERS NAMES, NATIONAL STANDARDS**

WHERE A SPECIFICATION OR A DESCRIPTION OF A PRODUCT OR ELEMENT OF WORK INCLUDES A SPECIFIC MAKE OR SOURCE SUCH AS A PRODUCT NAME OR MANUFACTURER'S NAME OR A SUPPLIER'S NAME, OR A NATIONAL STANDARD, THE SPECIFICATION OR DESCRIPTION SHALL BE DESIGNED TO BE ACCOMPANIED BY THE WORDS "OR EQUIVALENT" NOTWITHSTANDING THAT THOSE EXACT WORDS MAY NOT IN FACT ACCOMPANY THE NAME OR STANDARD. THIS ALSO APPLIES WHERE THE NAME OR STANDARD IS ACCOMPANIED BY OTHER WORDS SUCH AS "OR EQUAL APPROVED" OR SUCHLIKE PHRASES.

**MATERIALS IN CONTACT WITH POTABLE WATER**

ALL MATERIALS, SUBSTANCES AND PRODUCTS IN CONTACT WITH POTABLE WATER SHALL COMPLY IN ALL RESPECTS WITH THE EUROPEAN COMMUNITIES (DRINKING WATER) (NO. 2) REGULATIONS, 2007 (S.I. NO. 278 OF 2007) AND SHALL BE INCLUDED IN THE LATEST "LIST OF APPROVED PRODUCTS AND PROCESSES" PUBLISHED BY THE DRINKING WATER INSPECTORATE FOR ENGLAND AND WALES. THE CONTRACTOR SHALL PRODUCE DOCUMENTARY EVIDENCE THAT THE SUBSTANCE OR PRODUCT HAS BEEN SPECIFICALLY APPROVED UNDER THE DWI SYSTEM, OR EQUIVALENT APPROVAL SYSTEM.

**LEGEND**

- SITE BOUNDARY
- OUTLINE OF BASEMENT BELOW
- EXISTING WATERMAIN
- PROPOSED WATERMAIN (150mm OD PE100 SDR11 PIPE)
- PROPOSED WATERMAIN (110mm OD PE100 SDR11 PIPE)
- PROPOSED SLUICE VALVE
- PROPOSED WATER METER
- PROPOSED HYDRANT
- PROPOSED 126m³ FIRE STORAGE TANK

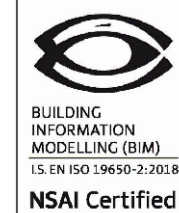


1. A WELL LIT SIGN ON A POLE SHALL INDICATE THE LOCATION OF THE MAIN ACCESS MANHOLE (TO ENSURE THE TANK CAN BE FOUND IN ALL CONDITIONS INCLUDING NIGHT TIME AND WITH GROUND SNOW COVER).
2. TANK TO BE CONNECTED TO THE FACILITIES MANAGEMENT BUILDING MANAGEMENT SYSTEMS TO ALERT WHEN WATER LEVELS ARE DEPLETING IN THE TANK
3. PUMPSETS FROM THE TANK ARE TO OPERATE TO ENSURE 35L/S FLOW FROM HYDRANTS ON THE FIRE MAIN

Ordnance Survey Ireland Licence No. EN 0003721  
© Ordnance Survey Ireland / Government of Ireland

© PUNCH Consulting Engineers

This drawing and any design hereon is the copyright of the Consultants and must not be reproduced without their written consent. All drawings remain the property of the Consultants. Figured dimension only to be taken from this drawing. Consultants to be informed immediately of any discrepancies before work proceeds.

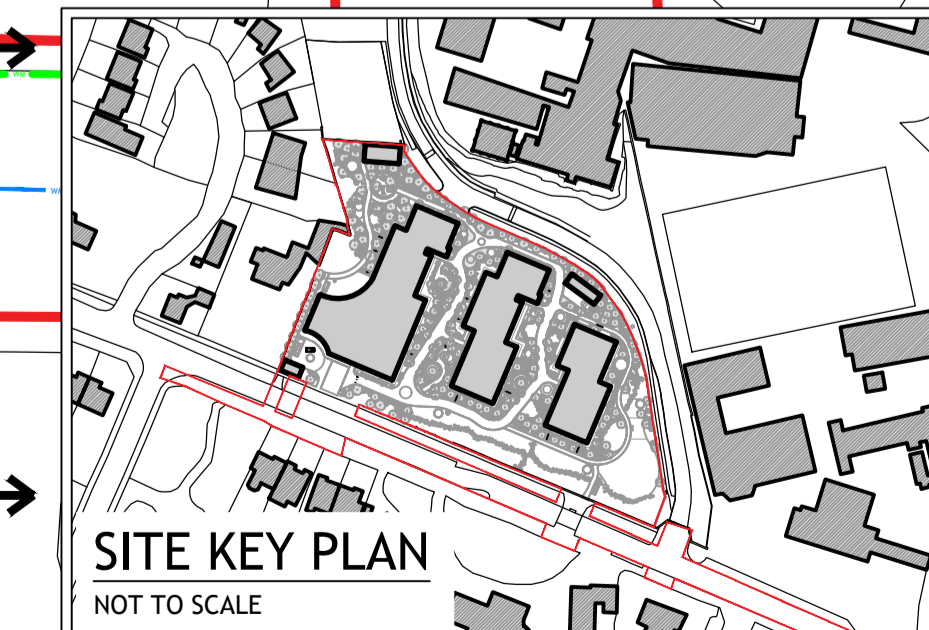


Rev	By	Date	Amendment
P01	IBS	2021/01/19	PRELIMINARY ISSUE
P02	IBS	2021/01/22	PRELIMINARY ISSUE
P03	MCD	2021/04/14	PRELIMINARY ISSUE
P04	MCD	2021/05/06	ISSUE TO IRISH WATER - APPLICATION FOR STATEMENT OF DESIGN ACCEPTANCE
P05	MCD	2021/05/09	ISSUE TO IRISH WATER - APPLICATION FOR STATEMENT OF DESIGN ACCEPTANCE
C01	IBS	2021/06/14	STAGE 3 SHD PLANNING ISSUE

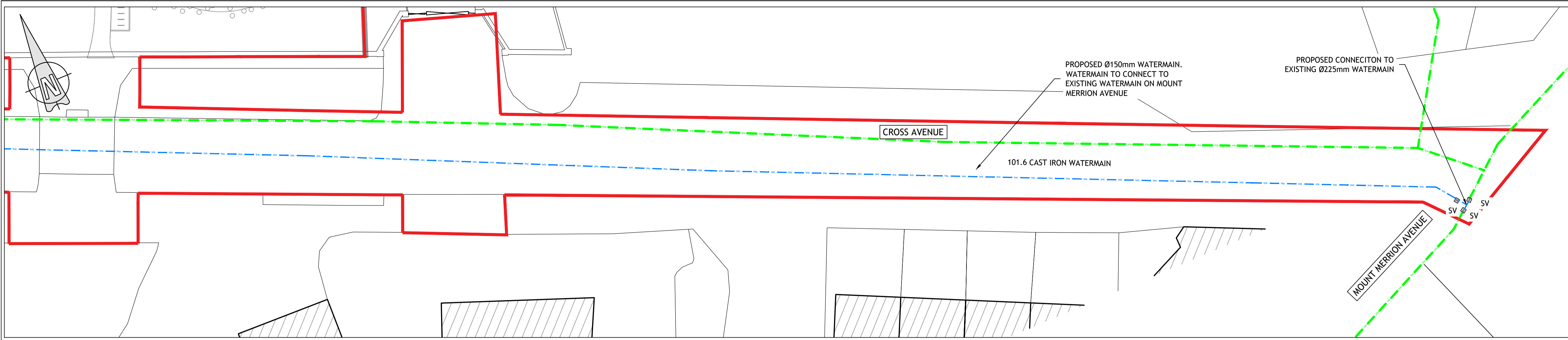
Rev	By	Date	Amendment
C02	IBS	2021/06/23	ISSUE TO ARBORIST & FIRE CONSULTANT
C03	IBS	2021/06/25	STAGE 3 SHD PLANNING ISSUE

Client: 1 Players Land Limited

**PUNCH** consulting engineers  
Dublin | Limerick | Cork | Galway | Glasgow  
Carnegie House Library Road, Dun Laoghaire, Co. Dublin, A96 C7W7  
t+353 1 271 2200 | w punchconsulting.com



Project:	RESIDENTIAL DEVELOPMENT, CROSS AVENUE, BLACKROCK, CO DUBLIN		
Title:	PROPOSED WATERMAIN LAYOUT		
Drawn:	IBS	Checked:	IBS
Project No:	202241	Model Ref:	CAR-PUNCH-XX-XX-M2-C-0200
Scale @ A1:	1:250	Document No:	CAR-PUNCH-XX-XX-DR-C-0200
Approved:	PC	Revision No:	C03



LEGEND	
SITE BOUNDARY	
OUTLINE OF BASEMENT BELOW	
EXISTING WATERMAIN	
PROPOSED WATERMAIN (150mm OD PE100 SDR11 PIPE)	
PROPOSED WATERMAIN (110mm OD PE100 SDR11 PIPE)	
PROPOSED SLUICE VALVE	

**PROPRIETARY PRODUCT NAMES, MANUFACTURER'S NAMES, SUPPLIERS NAMES, NATIONAL STANDARDS**

WHERE A SPECIFICATION OR A DESCRIPTION OF A PRODUCT OR ELEMENT OF WORK INCLUDES A SPECIFIC MAKE OR SOURCE SUCH AS A PRODUCT NAME OR MANUFACTURER'S NAME OR A SUPPLIER'S NAME, OR A NATIONAL STANDARD, THE SPECIFICATION OR DESCRIPTION SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS "OR EQUIVALENT" NOTWITHSTANDING THAT THOSE EXACT WORDS MAY NOT IN FACT ACCOMPANY THE NAME OR STANDARD. THIS ALSO APPLIES WHERE THE NAME OR STANDARD IS ACCOMPANIED BY OTHER WORDS SUCH AS "OR EQUAL APPROVED" OR SUCHLIKE PHRASES.

**MATERIALS IN CONTACT WITH POTABLE WATER**

ALL MATERIALS, SUBSTANCES AND PRODUCTS IN CONTACT WITH POTABLE WATER SHALL COMPLY IN ALL RESPECTS WITH THE EUROPEAN COMMUNITIES (DRINKING WATER) (NO. 2) REGULATIONS, 2007 (S.I. NO. 278 OF 2007) AND SHALL BE INCLUDED IN THE LATEST "LIST OF APPROVED PRODUCTS AND PROCESSES" PUBLISHED BY THE DRINKING WATER INSPECTORATE FOR ENGLAND AND WALES. THE CONTRACTOR SHALL PRODUCE DOCUMENTARY EVIDENCE THAT THE SUBSTANCE OR PRODUCT HAS BEEN SPECIFICALLY APPROVED UNDER THE DWI SYSTEM, OR EQUIVALENT APPROVAL SYSTEM.

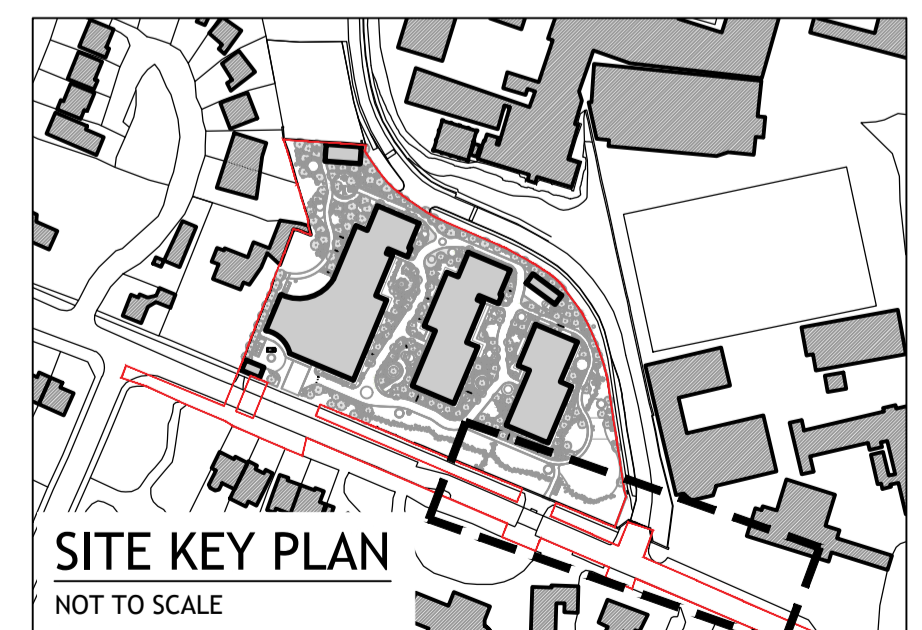
Ordnance Survey Ireland Licence No. EN 0003721  
© Ordnance Survey Ireland / Government of Ireland

© PUNCH Consulting Engineers  
This drawing and any design hereon is the copyright of the Consultants and must not be reproduced without their written consent.  
All drawings remain the property of the Consultants.  
Figured dimension only to be taken from this drawing.  
Consultants to be informed immediately of any discrepancies before work proceeds.



Rev	Amendment	By	Date	Rev	Amendment	By	Date
P01	PRELIMINARY ISSUE	IBS	2021/01/19				
P02	PRELIMINARY ISSUE	IBS	2021/01/22				
C01	STAGE 2 SHD PLANNING ISSUE	IBS	2021/01/28				
P03	ISSUE TO IRISH WATER - APPLICATION FOR STATEMENT OF DESIGN ACCEPTANCE	MCD	2021/05/06				
C02	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/14				
C03	STAGE 3 SHD PLANNING ISSUE	IBS	2021/06/25				

Client:  
**1 Players Land Limited**



Project: RESIDENTIAL DEVELOPMENT, CROSS AVENUE, BLACKROCK, CO DUBLIN			
Title: PROPOSED WATERMAIN LAYOUT (CONT.)			
Drawn: IBS	Discipline: JANUARY 2021	Technician Check: IBS	Engineer Check: JM
Project No: 202241	Model Ref: CAR-PUNCH-XX-XX-M2-C-0200	Approved: PC	Drawing Status: PLANNING A0
Scale @ A1: 1:250	Document No: CAR-PUNCH-XX-XX-DR-C-0201	Revision No: C03	

## **Barrett Mahony Consulting Engineers**

### **Dublin:**

Sandwith House,  
52-54 Lower Sandwith Street,  
Dublin 2,  
D02 WR26, Ireland.  
Tel: +353 1 677 3200

### **London:**

12 Mill Street,  
London, SE1 2AY,  
United Kingdom  
Tel: +44 203 750 3530.

### **Sofia:**

19 Yakubitsa Street,  
Lozenets,  
Sofia 1164,  
Bulgaria  
Tel: +359 2 494 9772

**[WWW.BMCE.IE](http://WWW.BMCE.IE)**