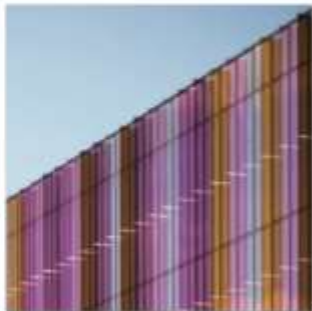


PIXB – Manchester Airport (Heald Green)

Drainage Statement

Doc Ref: 15191-BKP-XX-XX-RP-C-0001 – Rev B

Date: 11.04.25



boothking



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-	First Issue		11.04.25
A	Council note updated		07.11.25
B	Note on discharge time added		11.03.26

1.0 INTRODUCTION & SCOPE

1.1 – Scope

Our client Whitbread PLC has requested Booth-King Partnership Ltd. to undertake a scheme drainage design and provide this drainage statement for the purposes of planning permission with Manchester City Council for the demolition of the existing restaurant and the new built of a 37-bedroom two storey extension with smaller breakfast room, shown in blue on Figure 1 below. Refer Appendix A for outline Architects proposals.

2.0 EXISTING SITE

2.1 – Location

The site is located adjacent to Heald Green train station, address Premier Inn Manchester Airport (Heald Green), Finney Lane, Wythenshawe, Stockport SK8 3QA. The site covers an area of approximately 0.92ha.



Figure 1.
Existing Site

2.2 – Existing Foul Network

The existing foul network for the hotel falls to the north under gravity as noted in Figure 2 below by the brown arrows. This then discharges under Finney Lane and connects to the United Utilities 300mm diameter foul/combined network. Refer Appendix B for the existing site survey information and Appendix C for obtained United Utilities drawings.

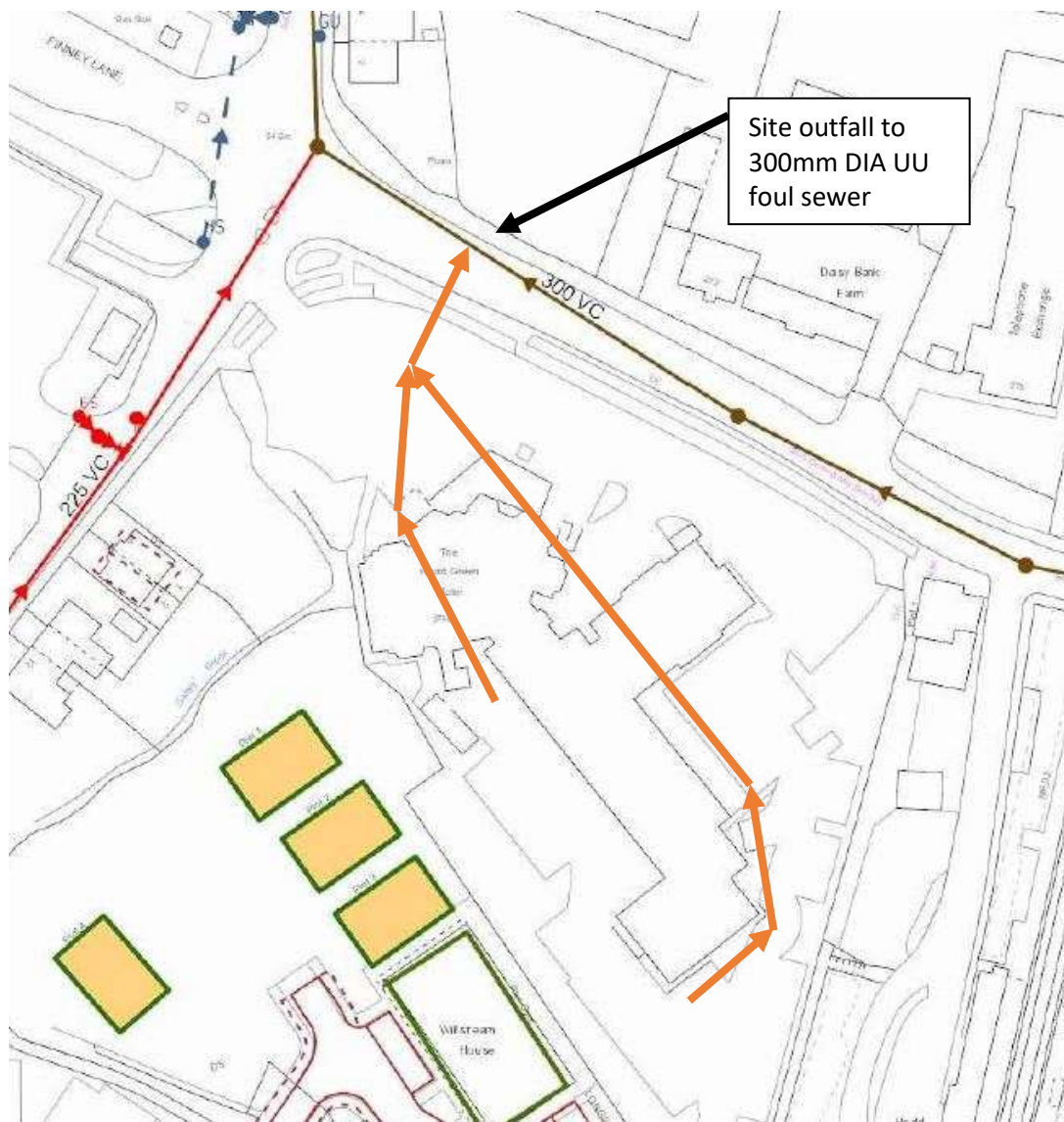


Figure 2.
Site Drainage Discharge Location

2.3 – Existing Surface Water

The existing surface network for the hotel and restaurant falls to the west under gravity, as noted in Figure 3 below by the blue arrows. It is then discharges to the adjacent water course, which is culverted north within the Unities utilities network. The site network is unattenuated and there does not appear to be any Suds features or flow controls. Refer Appendix B for the existing site survey information and Appendix C for obtained United Utilities drawings.

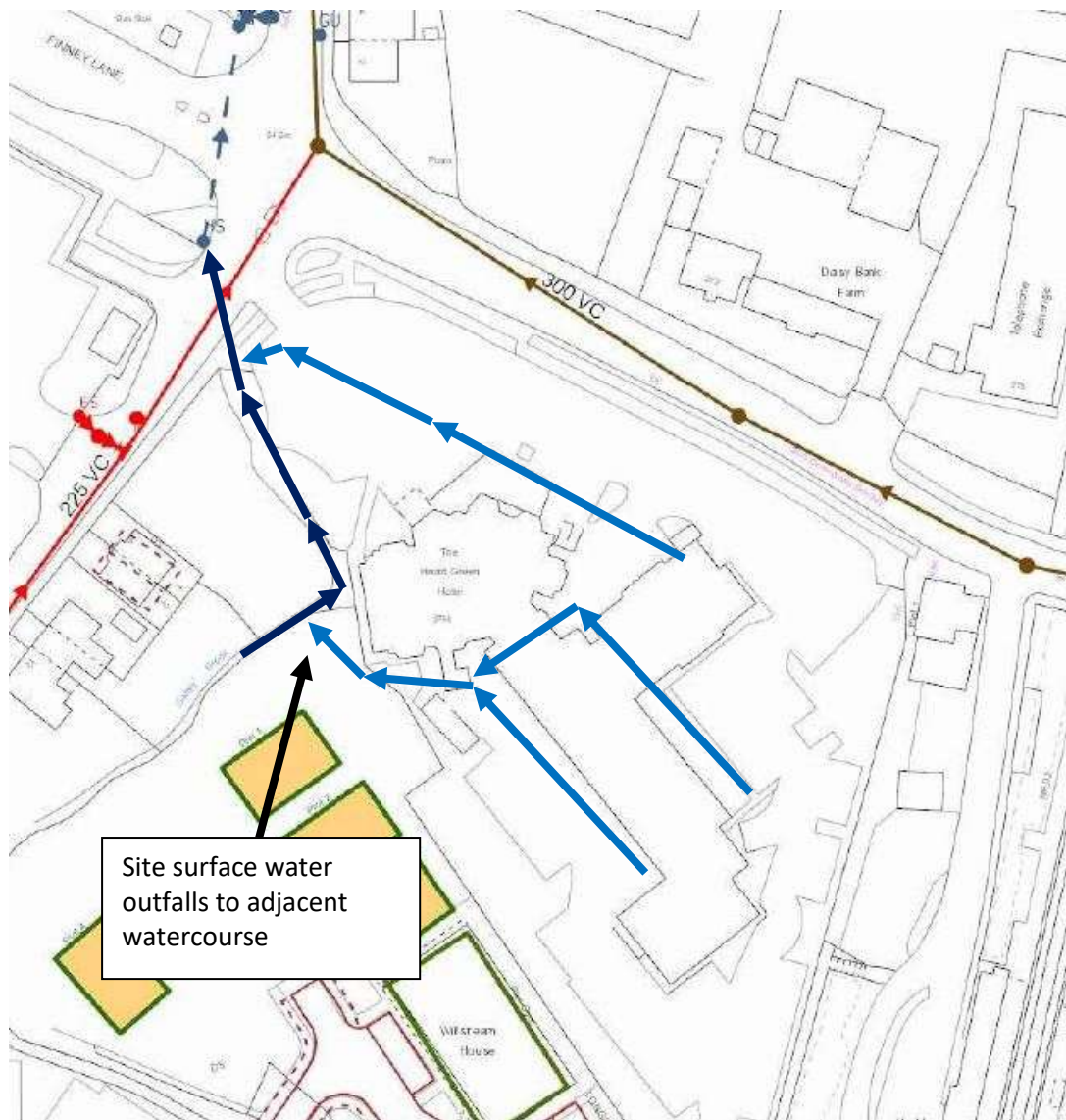


Figure 3.
Site Drainage Discharge Location

2.4 – Flooding

From review of the local flood maps, the site is within flood Zone 1, there is no residual risk of flooding on site from coastal, river or surface water flooding.

3.0 – SITE DRAINAGE PROPOSALS

3.1 – Proposal

It is proposed to demolish the existing restaurant and erect a new extension to the hotel with associated road and car park works. It is also proposed to create a smaller breakfast room within and yield an increase of net 37 rooms overall. Refer proposed drainage general arrangement for layout provided in Appendix D.

3.2 – Proposed Foul Network

It is proposed to install a new gravity system local to the new extension, the runs will be kept to a depth, such that they can tie into the existing system, where required these may need to be concrete encased under the roadway and carpark. With reference to British Water Flows and Loads 4, flows for the additional hotel extension will nominally increase site peak foul discharge from 1.85 l/s to 1.93 l/s total.

British Water - Flows and Loads 4					
Hotel - Total - EXSITING	Rooms (2 person)	No.	FLOW (L)		
Hotel Guests (3*)	87	174	250	43500	
Hotel full time day staff		2	90	180	
Hotel part time staff		4	45	180	
Restaurant (full meals) covers twice per day	223	2	30	13380	
Drinkers (allow)	223	1	12	2676	
Toilets (WC) per use - allow 1 per cover	223	2	10	4460	
Toilets (Urinal) per use, allow 1 per drinker	223	1	5	1115	
Restaurant full time day staff (per day)		8	90	720	
Restaurant part time staff (per day)		8	45	360	
			Total	66571	litre/day
			Peak flow (total/10hr/60/60)	1.85	l/s
			Average flow (total/24hr/60/60)	0.77	l/s
Hotel - Total - PROPOSED	Rooms (2 person)	No.	FLOW (L)		
Hotel Guests (3*)	124	248	250	62000	
Hotel full time day staff		5	90	450	
Hotel part time staff		10	45	450	
Restaurant - Breakfast/lunch only	75	2	30	4500	
Toilets (WC) per use - allow 1 per cover	75	2	10	1500	
Toilets (Urinal) per use	75	1	5	375	
Restaurant full time day staff (per day)		2	90	180	
Restaurant part time staff (per day)		4	45	180	
			Total	69635	litre/day
			Peak flow (total/10hr/60/60)	1.93	l/s
			Average flow (total/24hr/60/60)	0.81	l/s

Approval will be sought with United Utilities for the additional foul discharge and volume. Section 106 agreement will be required prior to a positive connection being made. Refer drawings in Appendix D for proposed layouts.

3.3 Infiltration/Soakaway Disposal

From review of local borehole information available on the BGS website, the local strata to depths of circa 14 feet show variegated clays, unlikely to be suitable for infiltration. Given the site has no existing soakaway it is assumed unlikely that disposal of surface water in this method would be possible.

3.4 – Proposed Surface Water

The new extension to the existing hotel will require a new surface water system with attenuation and controlled discharge. New roadways and car parking will utilise a mixture of permeable paving and swales to act as a Suds treatment stage prior to attenuation.

It is proposed that the majority of the existing hotel area and car park drainage system remains relatively unaltered, as this is served via an independent system to that of the former restaurant.

It is proposed that the entirety of the new roof area, road and car park will be taken by a new replacement system and attenuated in cellular storage tanks underground, overall potential contributing area including paving etc has been estimated as a conservative 1600m².

From review the existing discharge rate from the area of site for a M1-60 (1 year 60 minute) storm event, the existing discharge rate as below has been calculated from the Wallingford Procedure, as 7.3l/s.

Site Location :		Manchester Airport (Heald Green)							
		Overall Site Area, A =		0.16 ha					
		M5-60 (Fig. 1) =		20 mm					
		r (Fig. 2) =		0.3					
		Impermeable Area, Ai =		100%	0.16 ha				
		Permeable Area, Ap =		0%	0 ha				
		Run-off Co-efficient, Cv =		0.9 (0.75-0.9)					
		Routing Co-efficient, Cr =		1.3 (fixed)					
		Required Return Period, T Years =		1					
Duration mins	Z1	M5-D mm	Z2	MT-D mm	Q in m3	Q out m3	Storage m3	Point Intensity, I mm/hour	Q _{peak} (3.61*Cv*I*A _i) l/s
5	0.35	7.0	0.67	4.7	7.5	0.69	6.8	56.3	29.3
10	0.50	10.0	0.68	6.8	10.9	1.38	9.5	40.8	21.2
15	0.59	11.8	0.68	8.0	12.8	2.07	10.8	32.1	16.7
30	0.77	15.4	0.69	10.6	17.0	4.14	12.9	21.3	11.0
60	1.00	20.0	0.70	14.0	22.4	8.28	14.1	14.0	7.3
120	1.28	25.6	0.71	18.2	29.1	16.56	12.5	9.1	4.7
240	1.58	31.6	0.72	22.8	36.4	33.12	3.3	5.7	3.0
360	1.80	36.0	0.72	25.9	41.5	49.68	-8.2	4.3	2.2
600	2.05	41.0	0.74	30.3	48.5	82.8	-34.3	3.0	1.6
1440	2.80	56.0	0.75	42.0	67.2	198.72	-131.5	1.8	0.9
2880	3.50	70.0	0.76	53.2	85.1	397.44	-312.3	1.1	0.6
References -		The Wallingford Procedure, Volumes 1-4							

The local Qbar greenfield discharge rate calculated for the area is 5.9l/s/ha. For this small development area, the discharge rate would be less than this and typically limited to 5.0l/s. However, in line with Level 2 SFRA user guide, the development discharge should provide a betterment of at least 50% that of the existing rate established.

From the above it is therefore proposed to limit the discharge from the new buildings, roads and car parking to the lowest possible rate via a flow control with a minimum 75mm diameter to mitigate blockage issues, this being a discharge rate of 2.3 l/s, which would provide a betterment of 69%.

3.4 – Proposed Surface Water (cont.)

As required for a storm event of 1:100 years and with an allowance of 40% for climate change, the new network attenuation is required to be a minimum of 99.5m³ in accordance with the Wallingford Procedure storage calculator, noted below.

Site Location :		Manchester Airport (Heald Green)							
		Overall Site Area, A =		0.16		ha			
		M5-60 (Fig. 1) =		20		mm			
		r (Fig. 2) =		0.3					
		Impermeable Area, Ai =		140%		0.224		ha	
		Permeable Area, Ap =		0%		0		ha	
		Run-off Co-efficient, Cv =		0.9		(0.75-0.9)			
		Routing Co-efficient, Cr =		1.3		(fixed)			
		Required Return Period, T Years =		100					
Duration	Z1	M5-D	Z2	MT-D	Q in	Q out	Storage	Point Intensity, I	Q _{peak}
mins		mm		mm	m3	m3	m3	mm/hour	(3.61*Cv*I*Ai) l/s
5	0.35	7.0	1.86	13.0	29.2	0.69	28.5	156.2	113.7
10	0.50	10.0	1.97	19.7	44.1	1.38	42.7	118.2	86.0
15	0.59	11.8	1.97	23.2	52.1	2.07	50.0	93.0	67.7
30	0.77	15.4	1.98	30.5	68.3	4.14	64.2	61.0	44.4
60	1.00	20.0	1.93	38.6	86.5	8.28	78.2	38.6	28.1
120	1.28	25.6	1.89	48.4	108.4	16.56	91.8	24.2	17.6
240	1.58	31.6	1.85	58.5	131.0	33.12	97.8	14.6	10.6
360	1.80	36.0	1.85	66.6	149.2	49.68	99.5	11.1	8.1
600	2.05	41.0	1.77	72.6	162.6	82.8	79.8	7.3	5.3
1440	2.80	56.0	1.72	96.3	215.8	198.72	17.0	4.0	2.9
2880	3.50	70.0	1.67	116.9	261.9	397.44	-135.6	2.4	1.8
		Allowable Discharge Flow:		2.30		l/s			
		Required Storage for given flow:		99.5		m3			
References - The Wallingford Procedure, Volumes 1-4									

This will be provided within the site, using 'Polystorm PSM1 grates by 'Polypipe' (or equal approved) to allow for the required minimum cover depth of 0.6m. It will be 36x4.0x0.8m dp. providing 109m³. From the technical data below the crates are suitable for trafficked area. With a volume of 99.5m³ and a discharge rate of 2.3l/s the overall volume will discharge within $(99.5 \times 1000 / 2.3 / 60 / 60) = 12.1$ hrs < 48hrs.

Polystorm Modular Cell

Data Sheet

PRODUCT INFORMATION

ISSUE 3 - JAN 2016

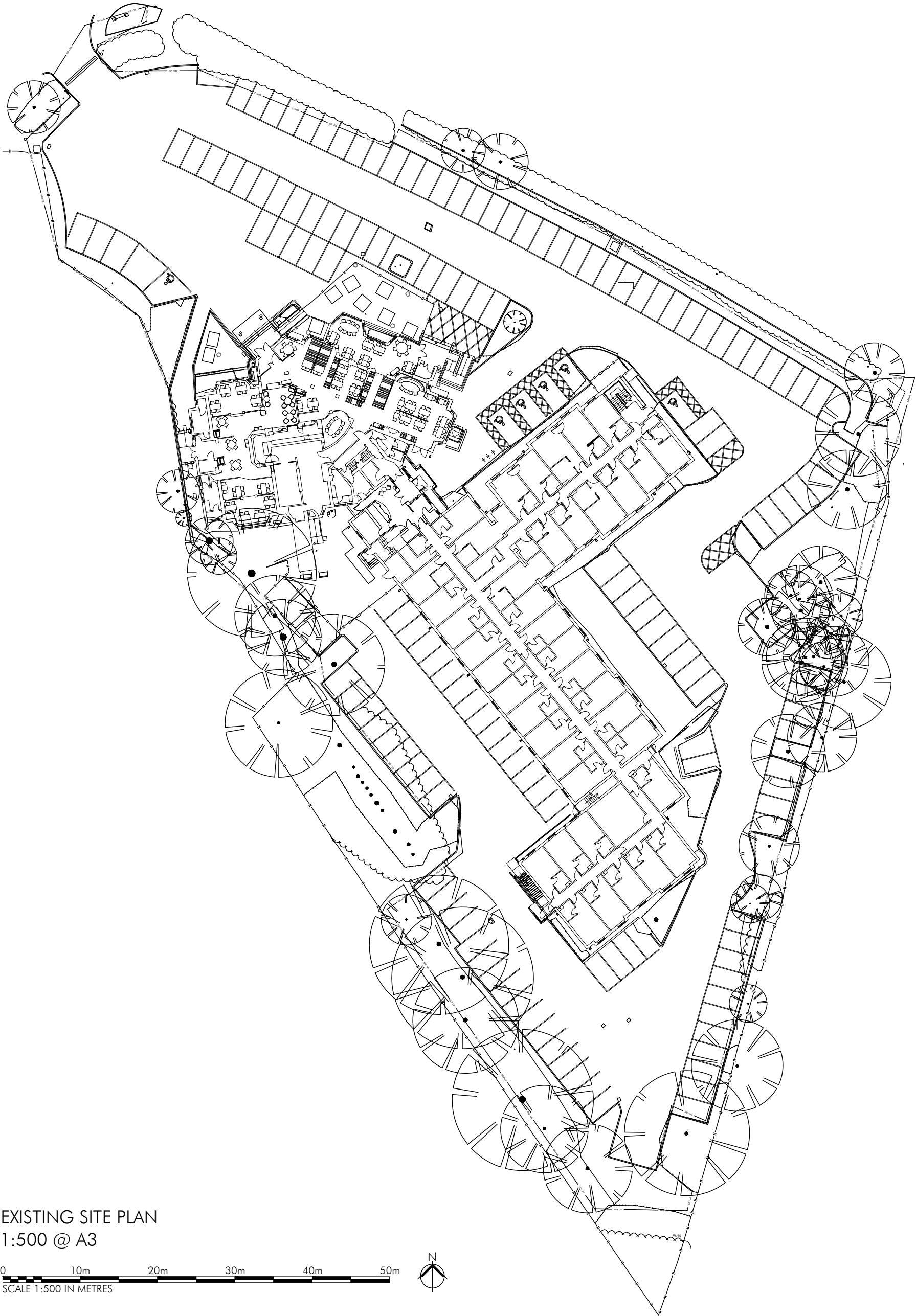
Product code: PSM1

The Polystorm cell made of virgin material, has a 44 tonnes/m² compressive strength. It is ideally suited for retention, attenuation or infiltration under trafficked or loaded areas at greater depths, such as car parks, housing and commercial developments. An efficient and versatile solution for SuDS compliance, it is hard-wearing, lightweight and provides a 95% void ratio for maximum water capture.

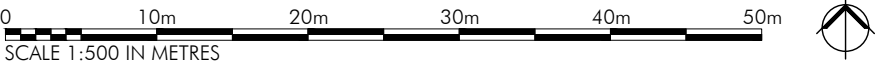


Refer drawings in Appendix D for proposed layouts.

APPENDIX A
ARCHITECTS PROPOSALS



EXISTING SITE PLAN
1:500 @ A3



JBR DRAWN		DRAWN REVISION		16/8/24 DATE		VER
PROJECT PREMIER INN EXTENSION WITH BREAKFAST ROOM PREMIER INN MANCHESTER AIRPORT HEALD GREEN				<div> ALLISON PIKE <div>ARCHITECTS & DESIGNERS</div></div> <div><div>7 Buxton Road West, Disley, Stockport, Cheshire, SK12 2AE. Website: www.allisonpike.com</div><div><div>Telephone: 01663 763000 Facsimile: 01663 766772 Email: studio@allisonpike.com</div><div>© Allison Pike Partnership Limited.</div></div></div>		
TITLE EXISTING SITE PLAN						
SCALE 1:500 @ A3						
JOB No PI1096		DRAWING No AP01				



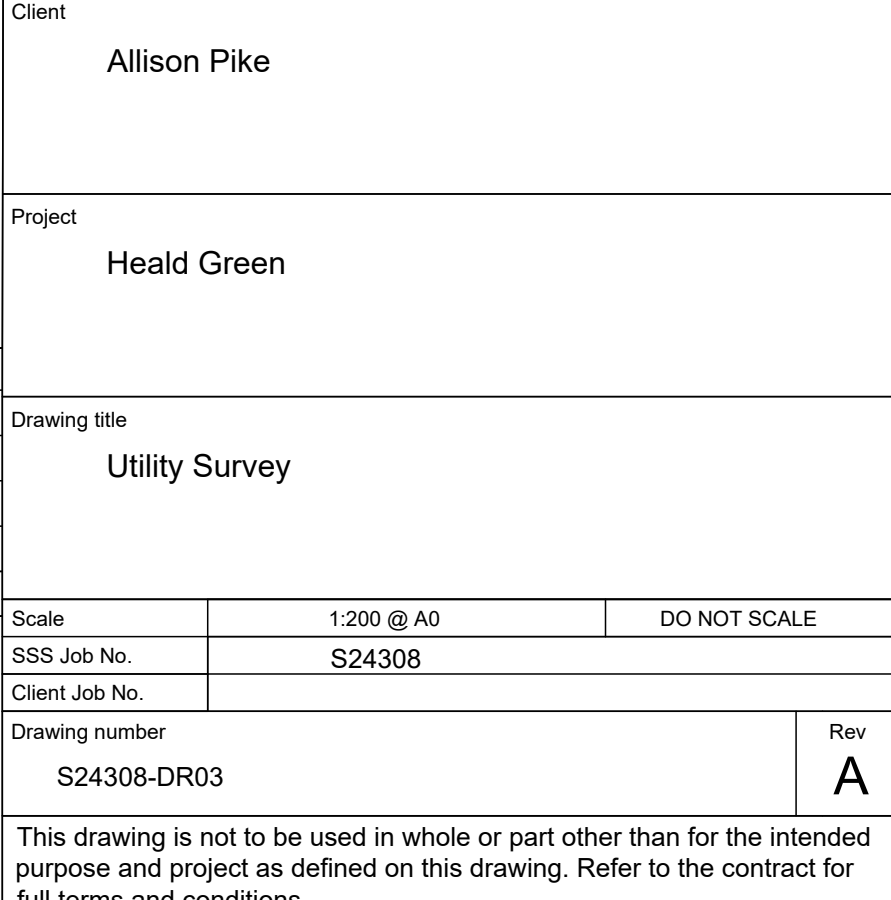
PROPOSED SITE PLAN
1:500 @ A3

0 10m 20m 30m 40m 50m
SCALE 1:500 IN METRES

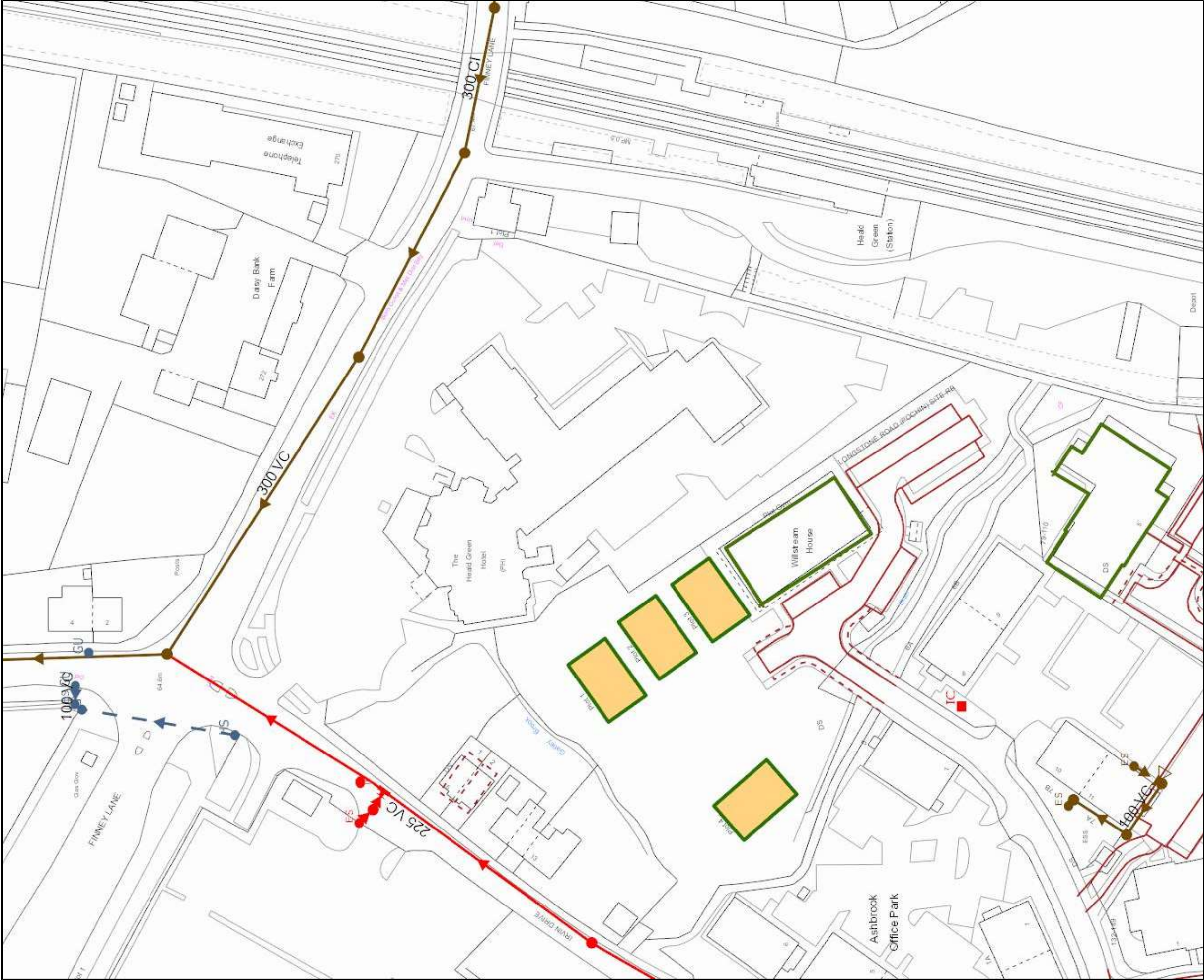


JBR DRAWN	DRAWN REVISION	16/8/24 DATE	VER
PROJECT PREMIER INN EXTENSION WITH BREAKFAST ROOM PREMIER INN MANCHESTER AIRPORT HEALD GREEN		<div><p>ALLISON PIKE ARCHITECTS & DESIGNERS</p></div> <div>ARCHITECTS & DESIGNERS</div> <div><p>7 Buxton Road West, Duxley, Stockport, Cheshire, SK12 2AE. Website: www.allisonpike.com</p><p>Telephone: 01663 763000 Facsimile: 01663 766772 Email: studio@allisonpike.com</p><p>© Allison Pike Partnership Limited</p></div>	
TITLE PROPOSED SITE PLAN			
SCALE 1:500 @ A3			
JOB No P11096	DRAWING No AP03	REV /	

APPENDIX B
SITE SURVEY INFORMATION

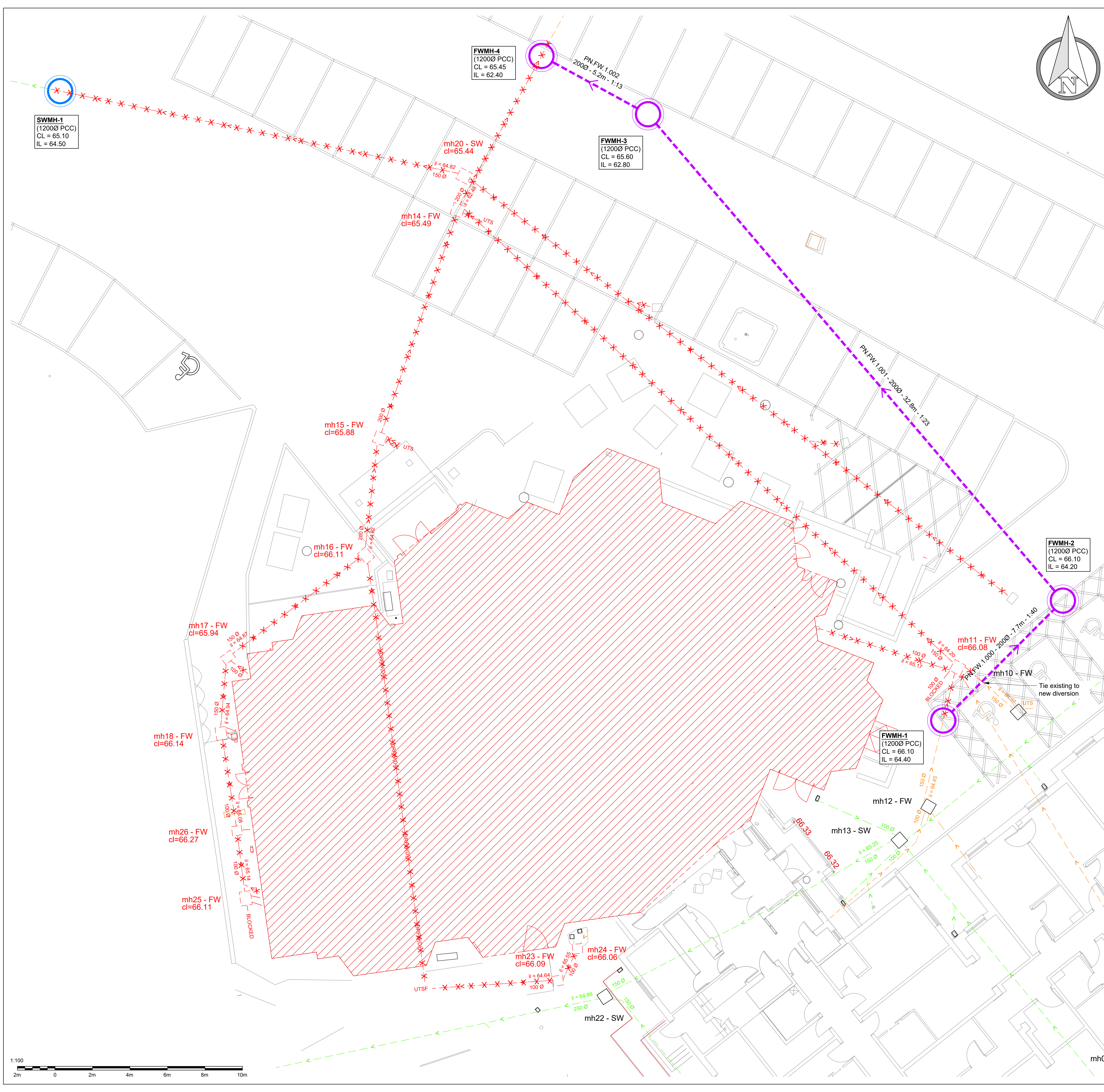


APPENDIX C
UNITED UTILITIES INFORMATION



SEWER RECORDS		 Water for the North West
Scale: 1:1250 Date: 10/04/2024	Address or Site Reference: Manchester Heald Premier Inn Printed by: Property Searches	
<p>The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.</p> <p>Crown copyright and database rights 2023 Ordnance Survey 100022432. Unauthorised reproduction will infringe these copyrights.</p>		

APPENDIX D
PROPOSED DRAINAGE LAYOUTS



TOPOGRAPHICAL NOTES:

The topographical information and buried services shown on this drawing were provided to BKPL by others. BKPL have not verified this information and therefore we can not guarantee its accuracy. The position and alignment of services may differ from that shown and other buried services may be present.

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DRAINAGE NOTES:

- All adoptable works to be in accordance with 'SSG appendix C' where applicable.
- All manhole cover levels to be confirmed by Architect.
- Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
- Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
- Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
- All surface water pipes to be 110mm Ø, laid at a gradient no flatter than 1:80 (UNO).
- All foul water pipes to be 110mm Ø, laid at a gradient no flatter than 1:40 (UNO).
- For minimum depths requiring pipe protection refer to drainage details drawings.
- Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
- Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
- Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
- All manholes to be Type B. 1200mm Ø precast concrete manhole rings with minimum 150mm concrete surround (UNO). All manhole covers to be D400 class (UNO). Refer to drainage details drawings for manhole installation details.
- All foul water pop up & RWP locations are TBC by Architect.
- Rodding access is to be provided at all pop-ups & RWP's.
- For setting out of all pop-up positions refer to Architect's details.
- Civil engineering contractor to arrange for:
 - Own services and temporary supplies.
 - Pathway & partial closure as deemed required by their method statement. Including costs.
 - Temporary adequate over pumping as deemed required by civil engineers method of construction.
- The contractor should confirm the locations for existing services prior construction.

DRAINAGE LINE TYPES KEY:

REF.	DESCRIPTION
	Existing FW network
	Existing SW network
	Existing drainage to be grubbed up
	Proposed FW Diversion
	Proposed SW network

DRAINAGE ANNOTATION KEY:

REF.	DESCRIPTION
SW	Surface water drainage
FW	Foul water drainage
CW	Combined water drainage
MH	Manhole
IC	Inspection chamber
BD	Backdrop required
PCC	Precast concrete chamber
PPIC	Polypropylene inspection chamber
GU	Gully
CL	Cover level (m)
IL	Invert level (m)
SVP	Soil vent pipe
PU	Pop up
RWP	Rainwater downpipe

DRAINAGE NOTE:

All information shown is subject to local building control & local water authority applications, comments & approvals.

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- If the Contractor consider that they do not have sufficient information to safely complete the works detailed on this drawing, they should contact the Engineer.
- This document uses revision codes in accordance with ISO EN 19650: P, Preliminary (non-contractual) - review, comment or approval. C, Contractual - Approved for stage completion.
- This document uses status codes in accordance with ISO EN 19650: Work in progress: S0 - WIP Shared (non-contractual): S1 - Coordination, S2 - Information, S3 - Review, S4 & S5 - Approval. Published (contractual): A1, An, etc. (where "n" relates to the project stage)
- This document uses project stages in accordance with the IStructE Structural Plan of Work 2020: 2 - Concept, 3 - Coordination, 4 - Technical Design, 4.5 - Production Design, 5 - Construction, 6 - Handover.
- Only documents with a revision code C# (where '#' relates to a revision number) and status code A4 or A5 are suitable for construction. Any deviations to that which is on site is not the liability of BKPL.

P01	11.04.25	STAGE 3 - ISSUED FOR APPROVAL	PA
REV.	DATE	REVISION DETAILS	INITIALS
		CURRENT DRAWING REVISION CHECKED BY	SP
		CURRENT DRAWING REVISION APPROVED BY	AI
DRAWING STATUS:	S3	PROJECT STAGE:	STAGE 3

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PARTNERSHIP LIMITED

CONSULTING CIVIL & STRUCTURAL ENGINEERS
www.booth-king.co.uk office@booth-king.co.uk

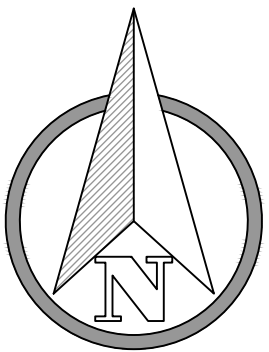
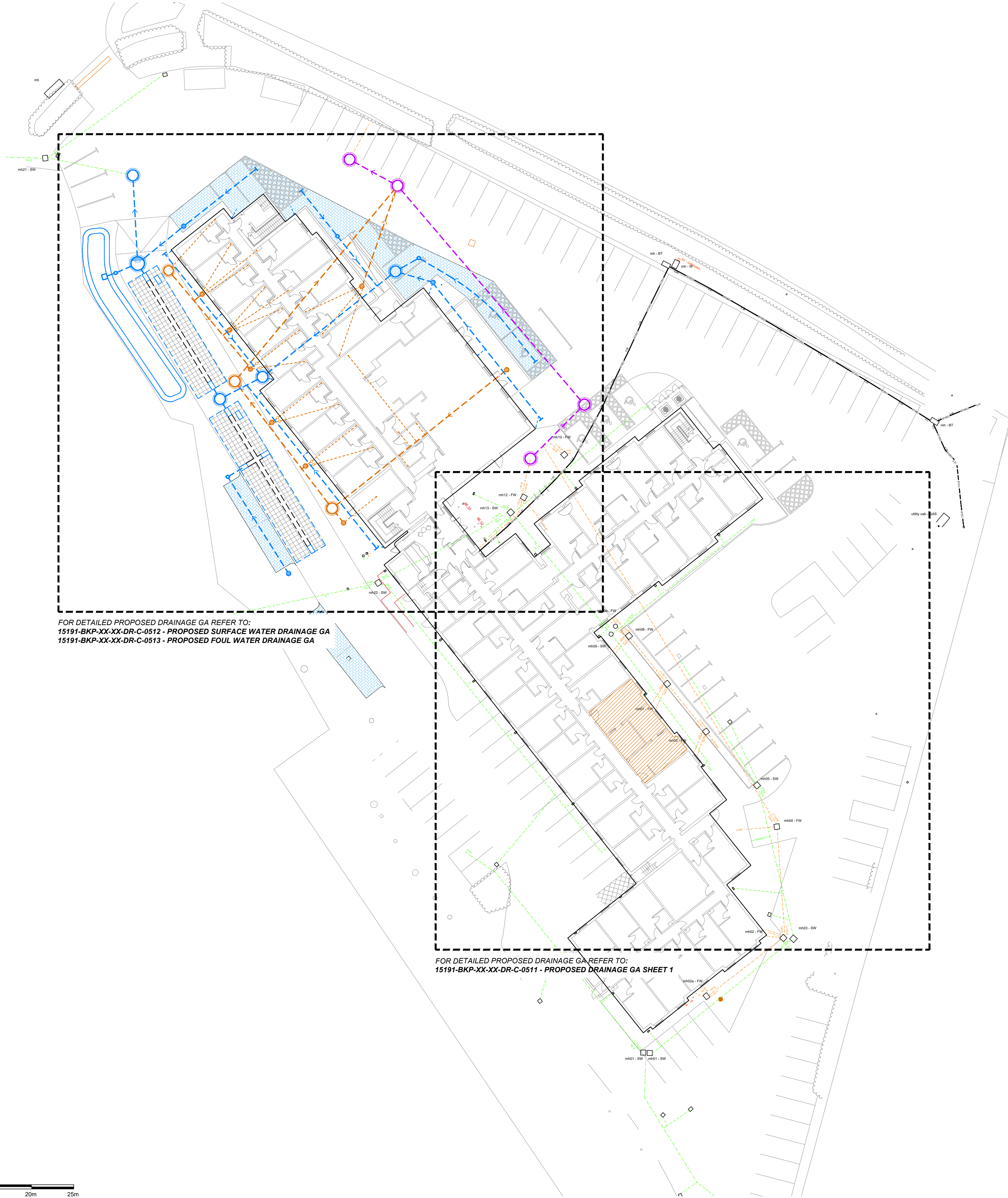
RAMSBOTTOM | MANCHESTER | EDINBURGH
Tel: 01706 822 022 Tel: 0161 694 7087 Tel: 0131 229 1547

PROJECT:
**Premier Inn
Manchester Airport (Heald Green)**

TITLE:
Drainage Enabling Works GA

SCALE (A1) | AUTHOR | DATE | REVISION | BKPL No.
1:100 | PA | Apr 25 | P01 | 15191

DRAWING REF:
15191-BKP-XX-XX- DR- C-0505



FOR DETAILED PROPOSED DRAINAGE GA REFER TO:
15191-BKP-XX-XX-DR-C-0512 - PROPOSED SURFACE WATER DRAINAGE GA
15191-BKP-XX-XX-DR-C-0513 - PROPOSED FOUL WATER DRAINAGE GA

FOR DETAILED PROPOSED DRAINAGE GA REFER TO:
15191-BKP-XX-XX-DR-C-0511 - PROPOSED DRAINAGE GA SHEET 1

TOPOGRAPHICAL NOTES:

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P01	11.04.25	STAGE 3 - ISSUED FOR APPROVAL	PA
REV.	DATE	REVISION DETAILS	INITIALS
CURRENT DRAWING REVISION CHECKED BY			SP
CURRENT DRAWING REVISION APPROVED BY			AI

DRAWING STATUS:	PROJECT STAGE:
S3	STAGE 3

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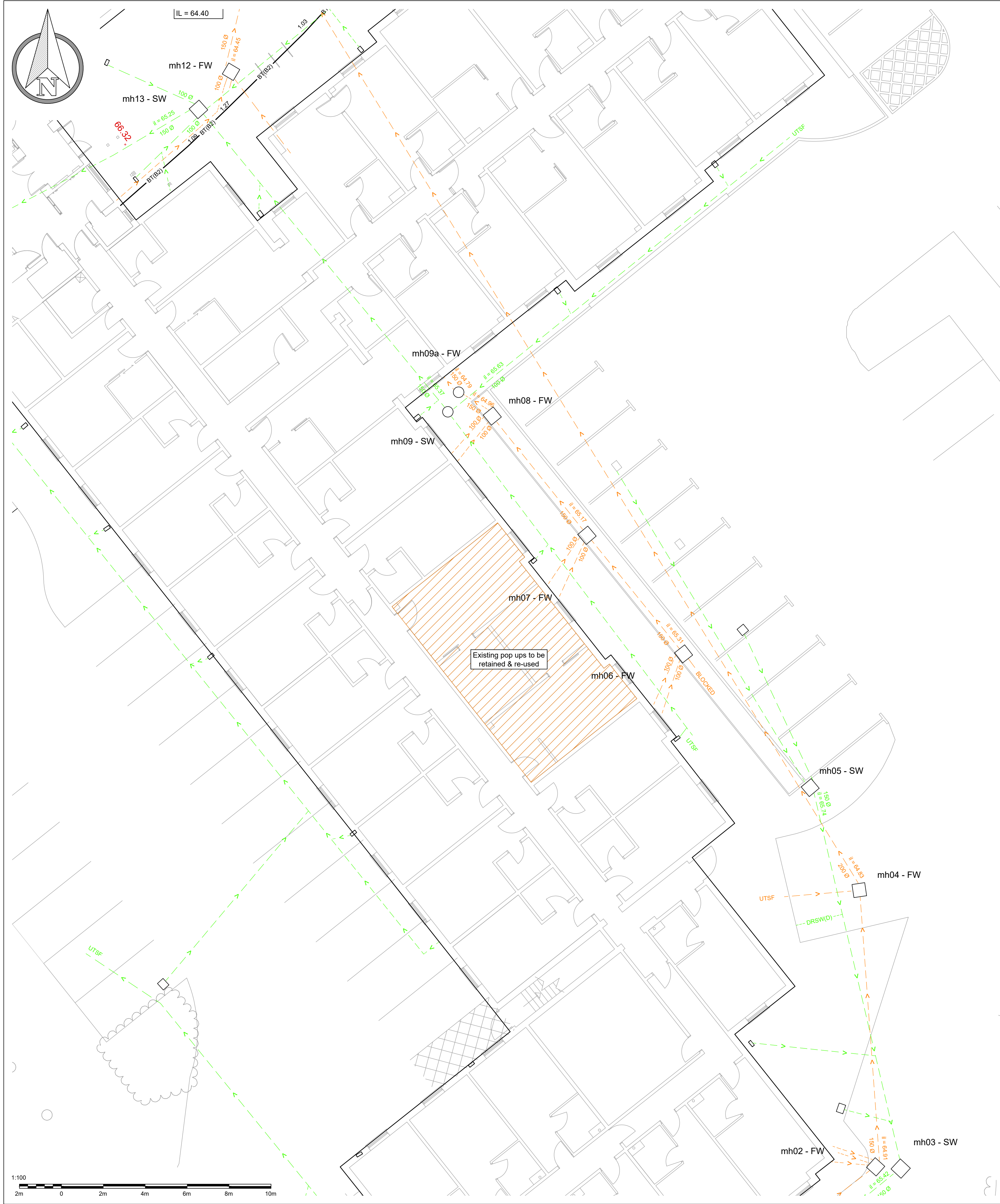
PROJECT:
**Premier Inn
Manchester Airport (Heald Green)**

TITLE:
Drainage Key Plan

SCALE (A1)	AUTHOR	DATE	REVISION	BKPL No.
1:250	PA	Apr 25	P01	15191

DRAWING REF:
15191-BKP-XX-XX-DR-C-0510





TOPOGRAPHICAL NOTES:

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DRAINAGE NOTES:

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- All manhole cover levels to be confirmed by Architect.
- Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
- Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
- Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
- All surface water pipes to be 110mm Ø, laid at a gradient no flatter than 1:80 (UNO).
- All foul water pipes to be 110mm Ø, laid at a gradient no flatter than 1:40 (UNO).
- For minimum depths requiring pipe protection refer to drainage details drawings.
- Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
- Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
- Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
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- All foul water pop up & RWP locations are TBC by Architect.
- Rodding access is to be provided at all pop-ups & RWP's.
- For setting out of all pop-up positions refer to Architect's details.
- Civil engineering contractor to arrange for:
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 - Pathway & partial closure as deemed required by their method statement. Including costs.
 - Temporary adequate over pumping as deemed required by civil engineers method of construction.
- The contractor should confirm the locations for existing services prior construction.

DRAINAGE LINE TYPES KEY:

REF.	DESCRIPTION
- - - - -	Existing FW network
- - - - -	Existing SW network

DRAINAGE ANNOTATION KEY:

REF.	DESCRIPTION
SW	Surface water drainage
FW	Foul water drainage
CW	Combined water drainage
MH	Manhole
IC	Inspection chamber
BD	Backdrop required
PCC	Precast concrete chamber
PPIC	Polypropylene inspection chamber
GU	Gully
CL	Cover level (m)
IL	Invert level (m)
SVP	Soil vent pipe
PU	Pop up
RWP	Rainwater downpipe

DRAINAGE NOTE:

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REV.	DATE	REVISION DETAILS	INITIALS
CURRENT DRAWING REVISION CHECKED BY SP			
CURRENT DRAWING REVISION APPROVED BY AI			
DRAWING STATUS: S3		PROJECT STAGE: STAGE 3	

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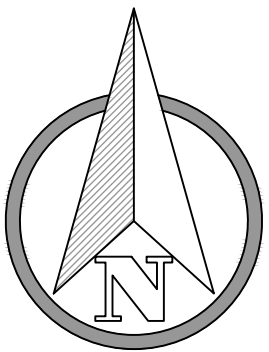
RAMSBOTTOM | MANCHESTER | EDINBURGH
Tel: 01706 822 022 | Tel: 0161 694 7087 | Tel: 0131 229 1547

PROJECT:
**Premier Inn
Manchester Airport (Heald Green)**

TITLE:
**Proposed Drainage GA
Sheet 1**

SCALE (A1) | AUTHOR | DATE | REVISION | BKPL No.
1:250 | PA | Apr 25 | P01 | 15191

DRAWING REF:
15191-BKP-XX-XX-DR-C-0511



SWMH-1
(1200Ø PCC)
CL = 65.20
IL = 64.50

SWMH-2 - Hydro-Brake
(1350Ø PCC)
CL = 66.00
IL = 64.57

Hydro-Brake by Hydro
International Ltd.
Flow to limited to 2.3/s.
Smallest flow through 75mm Ø.

SW - ATTENUATION TANK
49m³ cellular storage crates. 16x4m x 0.8m deep.

'Polypipe Polystorm-R PSM1' storage crates
installed in strict accordance with manufacturers
recommendations. Tank to be wrapped in
impermeable membrane. Impermeable
geomembrane to be wrapped in protective
geotextile such as Polystorm Permatex 300 to
prevent punctures.

CL = 66.05
Top of tank = 65.45
Base of tank = 64.65

Indicates lines of Polystorm
PSM4 inspect crates for
inspection & maintenance.
Polystorm access vertical
shaft at each end.

SWMH-3
(1050Ø PCC)
CL = 66.00
IL = 64.75

SWMH-3
(1050Ø PCC)
CL = 66.00
IL = 64.79

SWMH-4
(1050Ø PCC)
CL = 65.75
IL = 64.98

SWIC-3
(450Ø PPIC)
CL = 65.85
IL = 65.02

SWIC-2
(450Ø PPIC)
CL = 65.20
IL = 64.60

SWIC-1
(450Ø PPIC)
CL = 66.30
IL = 64.95

RWP tails into permeable paving sub base,
wrapped in permeable membrane.

Polystorm tank
vent & surface box.

ST

Indicates lines of Polystorm PSM4
inspect crates for inspection &
maintenance. Polystorm access
vertical shaft at each end.

Existing hotel drainage
remains unaltered.

TOPOGRAPHICAL NOTES:

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Levels information shown is based on information available.
This office is to be made aware of any discrepancies found on site.

DRAINAGE NOTES:

- All adoptable works to be in accordance with 'SSG appendix C' where applicable.
- All manhole cover levels to be confirmed by Architect.
- Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
- Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
- Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
- All surface water pipes to be 110mm Ø, laid at a gradient no flatter than 1:80 (UNO).
- All foul water pipes to be 110mm Ø, laid at a gradient no flatter than 1:40 (UNO).
- For minimum depths requiring pipe protection refer to drainage details drawings.
- Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
- Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
- Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
- All manholes to be Type B. 1200mm Ø precast concrete manhole rings with minimum 150mm concrete surround (UNO). All manhole covers to be D400 class (UNO). Refer to drainage details drawings for manhole installation details.
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DRAINAGE LINE TYPES KEY:

REF.	DESCRIPTION
---	Existing SW network
---	Proposed SW network

DRAINAGE ANNOTATION KEY:

REF.	DESCRIPTION
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FW	Foul water drainage
CW	Combined water drainage
MH	Manhole
IC	Inspection chamber
BD	Backdrop required
PCC	Precast concrete chamber
PPIC	Polypropylene inspection chamber
GU	Gully
CL	Cover level (m)
IL	Invert level (m)
SVP	Soil vent pipe
PU	Pop up
RWP	Rainwater downpipe
ST	Silt trap

DRAINAGE NOTE:

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S3	STAGE 3		

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RAMSBOTTOM | **MANCHESTER** | **EDINBURGH**
Tel: 01706 822 022 Tel: 0161 694 7087 Tel: 0131 229 1547

PROJECT:

**Premier Inn
Manchester Airport (Heald Green)**

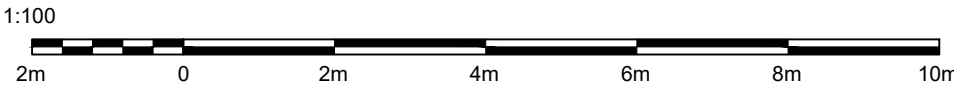
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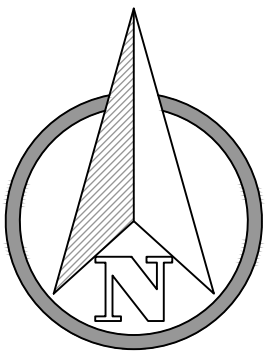
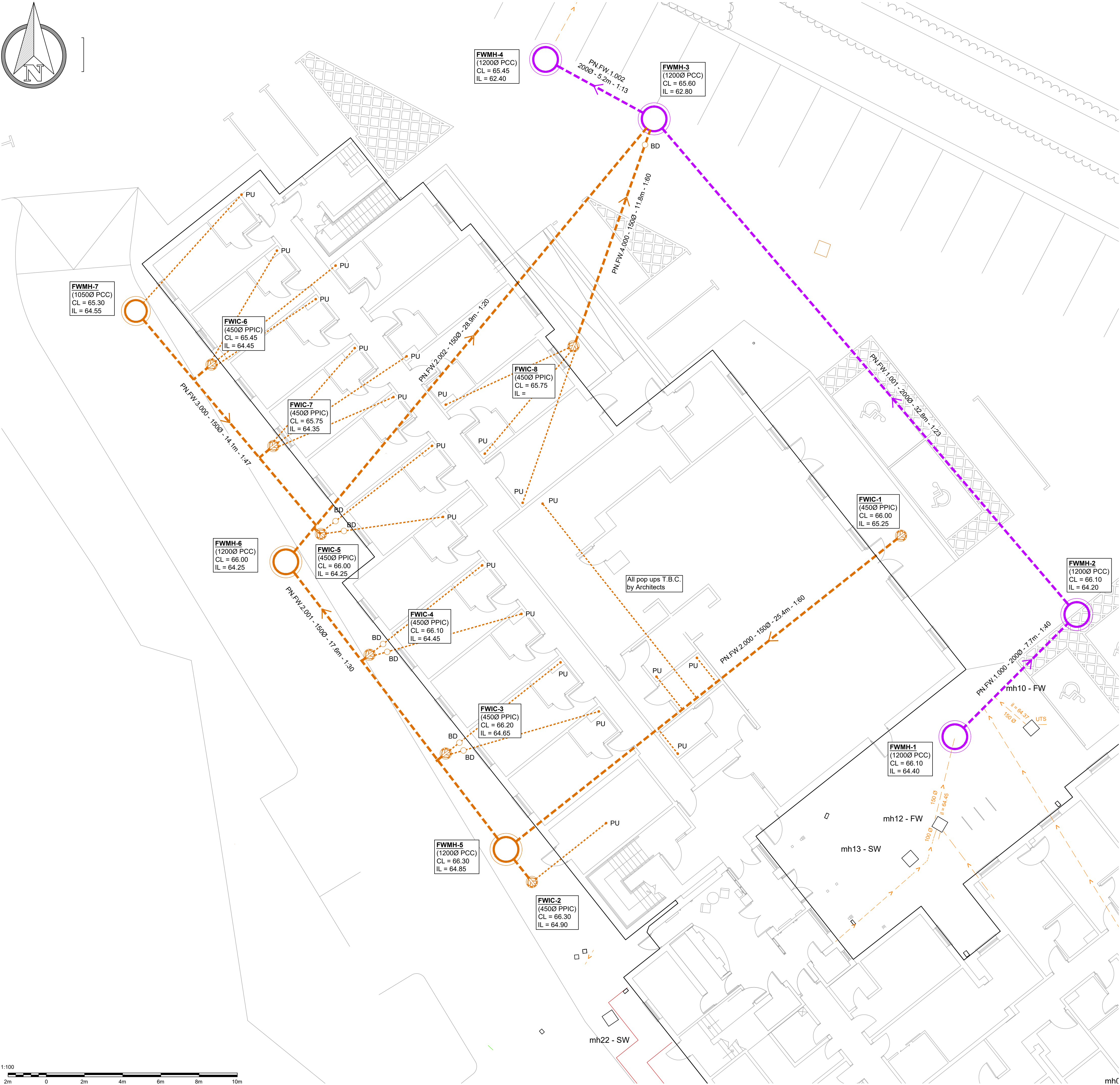
**Proposed Surface Water
Drainage GA**

SCALE (A1)	AUTHOR	DATE	REVISION	BKPL No.
1:100	PA	Apr 25	P01	15191

DRAWING REF:

15191-BKP-XX-XX-DR-C-0512





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- - - - -	Proposed FW Diversion

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PROJECT: Premier Inn Manchester Airport (Heald Green)

TITLE: Proposed Foul Water Drainage GA

SCALE (A1) 1:100 | AUTHOR PA | DATE Apr 25 | REVISION P01 | BKPL No. 15191

DRAWING REF: 15191-BKP-XX-XX-DR-C-0513