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Trinity Islands – Plot D1

Verification and Maintenance Strategy

Curtins Ref: ZD-CUR-G580-RP-XX-92020

Revision: V01
Issue Date: 31 July 2026

Client Name: Renaker Build Ltd

Site Address: Trinity Island, Trinity Way, Manchester (Site C and Site D)

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Rev	Description	Issued by	Checked	Date
V01	First Issue	KS	CS	31 July 2026

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Appendix

Appendix A

Final Construction Drawings

Appendix B

United Utilities Approval – Reference 04607038

Peel Approval – Reference HXD/100721/265

Appendix C

SPEL Petrol Interceptor Manufacturers Information

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1 Introduction

1.1 Project Background

Curtins have been appointed by Reneker Build Lts to provide a Verification and Drainage Maintenance Strategy for the proposed below ground drainage design for Trinity Island – Plot D1. The British National Grid co-ordinates for the site is approximately Easting 382711, Northing 397791.

The report is based on currently available information and best practice guidance.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material deviation from the intent contained in this document, prior approval shall be obtained from the relevant authority in advance of commencing such works.

The surface water network has been designed to accommodate the 1 in 100-year storm rainfall event plus 40% for climate change. There will be a period of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken.

1.2 Scope of the Maintenance Strategy

This report demonstrates the below ground drainage which has been installed for the development site and provides product information to inform future maintenance requirements.

This manual is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details only. Where proprietary products are specified the manufacturer’s instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

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2 Drainage Strategy

2.1 Existing Drainage

The majority of the existing drainage across the site has been confmired as redundant and removed. The existing outfall has been surveyed and cleaned and and has been utilised as part of the foul water network. There is a 520 x 800mm combined public sewer crossing south-west to north-east under Regent Road which flows in a north-easterly direction towards Water Street where the sewer is mapped as a 600 x 920mm sewer up to the junction with Liverpool Road. There is a 225mm combined sewer within Regent Road flowing in an easterly direction which connects to the 520 x 800mm combined public sewer. There is an existing public sewer shown on the records south of the site parallel with the 600 x 90mm above mentioned sewer. This suggests a historical sewer has been formally abandoned and likely to be removed.

2.2 General

The drainage network on site is a private drainage network.

The drainage network is a separate foul and surface water system within the development, with the foul water discharging into to public sewer in Regent Road via an existing connection and the surface water discharging into the River Irwell.

2.3 Foul Drainage

The current peak foul flow rate has been calculated at 59.2 l/s based on the Discharge Units.

The Final Construction Drainage Drawings are enclosed in *Appendix A.*

2.4 Surface Water Drainage

Any new development site drainage should be designed in accordance with current best practice to provide adequate capacity not to flood for the critical 1 in 30-year storm event and flood water generated for up to the critical 1 in 100-year plus climate change storm event shall be constrained within the areas on site so not to cause damage to buildings, essential services or adjoining developments and services.

Based on the nature of the development, a lifespan in excess of 60 years is anticipated. Therefore, the potential climate change allowance for 2070-2115 ranges between 30% for the central allowance and 40% for the upper end allowance. As such, an allowance of 40% for climate change on peak rainfall intensity has been included in the design.

An assessment was complete at the preliminary design stage which confirmed the most viable method of surface water discharge was to the River Irwell.

The on-site surface water network is based on a pipe system serving the building and the external paved areas.

The surface water discharge is based on a maximum flow velocity of 2m/s as agreed with Peel and the LLFA.

There are areas of rain gardens and permeable paving located across the site which provide an element of source control and run-off filtration.

A petrol interceptor has been installed prior to the surface water outfall to ensure contaminants do not enter the River.

The Final Construction Drainage Drawings are enclosed in *Appendix A.*

2.5 Approvals

The foul water connection to the public sewer in Regent Road has been approved under a Section 106 Agreement referenced 04607038. The approval letter is enclosed in *Appendix B.*

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The surface water discharge into the River Irwell has been agreed with Peel - Reference HXD/100721/265. The approval letter is also enclosed in Appendix B.

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3 Verification

3.1 Introduction

The Verification section has been developed with reference to the drainage design details and philosophy provided in section 2 of this report. Manchester City Council requirements are to verify the installation of the Drainage and SuDS to confirm by photographic record that this has been installed.

The following elements have been recorded:

- Permeable Paving Installation
- Petrol Interceptor
- Channel Drain
- Rain Gardens
- Flap Valve

A CCTV Survey has also been provided.

3.2 Photographic Information

Permeable Paving

Permeable Paving installation photographs are shown in Figures 1 - 2

Figure 1 – Permeable Paving installation

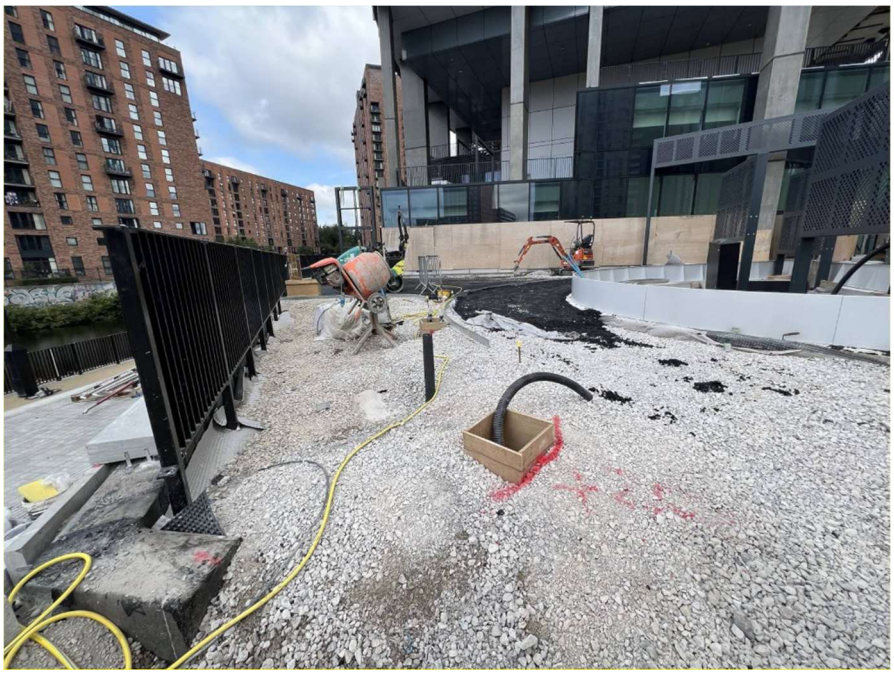
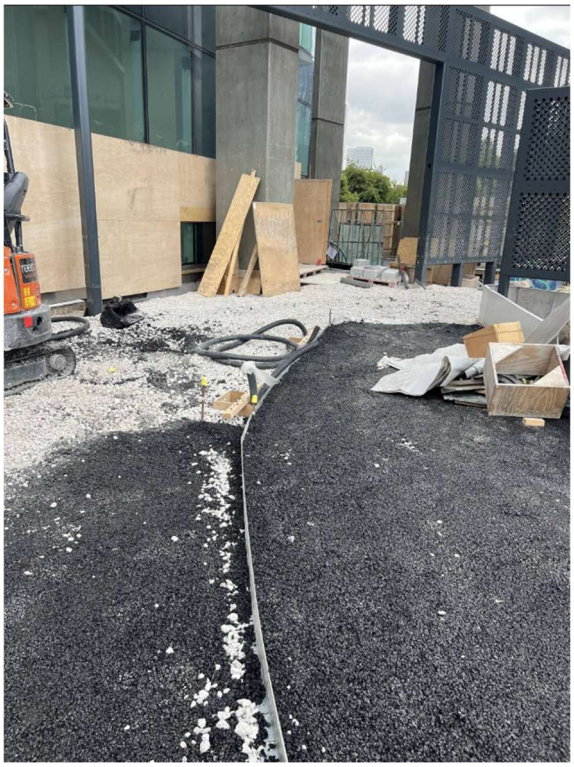


Figure 2 – Permeable Paving installation



Petrol Interceptor

Petrol Interceptor installation photographs are shown in Figure 3 - 4

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Figure 3 – Petrol Interceptor Installation



Figure 4 – Petrol Interceptor Internals



Channel Drain

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Channel drain installation photographs are shown in Figures 5 - 6

Figure 5 – Channel Drain Installation



Figure 6 – Channel Drain Installation



Rain Gardens

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Rain Garden installation photographs are shown in Figure 7.

Figure 7 – Rain Garden Installation



Flap Valve

Flap Valve installation photographs are shown in Figure 8.

Figure 8 – Flap Valve Installation



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Geocellular Crates

Permeable Paving outlets / geocellular crate installation photographs shown in Figure 9-10

Figure 9 – Crate Installation



Figure 10 – Crate Installation



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4 Maintenance Recommendations

4.1 Components

The following components have been included within the drainage design for the proposed development:

- Inspection, Manhole and Catchpit Chambers
- Pipes
- Gullies / Sump, Outlet and Access Units
- Linear Slot Drainage
- Permeable Paving
- Rain Garden
- Petrol Interceptor

4.2 General Maintenance

The maintenance of the drainage network within the ownership boundary will be the responsibility of the landowner, Reneker.

The maintenance of the drainage network outside of the Ownership Boundary will be the responsibility of Manchester City Council and United Utilities.

A copy of the final construction drainage layout should be provided in the final Operations and Maintenance Manual. Reference should be made to the proposed drainage layout: Curtins drawings ZD-CUR-G580-PL-GRD-92501 & ZD-CUR-G580-PL-GRD-92503.

The maintenance scheduling should begin from the completion date.

It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.

Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris or litter.

4.3 Inspection, Manhole and Catchpit Chambers

The locations of the chambers are indicated on Curtins drainage drawings ZD-CUR-G580-PL-GRD-92501 & ZD-CUR-G580-PL-GRD-92503.

Access points have been located at the head of each run, at a change in direction and at a change of pipe size in accordance with Building Regulations Part H.

The appropriate barriers and signage should be installed during any opening of manholes to warn pedestrians.

Existing manholes are subject to existing access procedures. Typically chambers with a minimum working space of 900mm can be accessed by personnel; however, a winch must be used. Where 1050mm of working space is provided, manholes should be accessed using steps and where 1200mm working space is provided; manholes should be accessed using ladders, this is in accordance with Building Regulations Part H.

When accessing chambers, the latest Health and Safety legislation should be adhered to.

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The appropriate health and safety equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Facilities Maintenance Manager prior to any access.

Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

4.4 Pipes

The locations of the pipes are indicated on Curtins drainage drawing ZD-CUR-G580-PL-GRD-92501 & ZD-CUR-G580-PL-GRD-92503.

Pipes can be cleaned using drain cleaning rods or drain cleaning jets, accessed from inspection chambers and manholes.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

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4.5 Gullies / Sump, Outlet and Access Units

The locations of the gullies or sump outlet units are indicated on Curtins drainage drawings ZD-CUR-G580-PL-GRD-92501

Gullies and sump outlet units installed have removable covers to allow cleaning and clearing of debris and silt. The appropriate barriers and signage should be installed during any opening of gullies to warn pedestrians.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

4.6 Linear Slot Drainage

The location of the Linear channel drainage systems are indicated on Curtin's drainage drawing ZD-CUR-G580-PL-GRD-92501

Linear channel drainage systems should be inspected and cleaned in accordance with the manufacturer's maintenance guide as below:

Slotdrain channels should be inspected regularly to ensure that the system continues to operate effectively and is free from damage and blockage by debris or solid objects.

The system should be cleaned at least once a year and incorporated into a planned maintenance schedule. The frequency of inspection and maintenance depends on the local environment and conditions.

Channel units can be cleaned through the use of a high-pressure hose. This can be fed into the channel system through access units strategically placed along the channel run.

The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of water into the drainage channel. Any debris within the throat should be removed.

The seating areas for covers and grates should be cleaned before they are replaced. The covers and grates should be locked into position to prevent these being removed, stolen or dislodged by traffic. Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If grates/covers are allowed to move within their frame, this may cause damage to the frame or seating.

4.7 Permeable Pavements

The locations of the permeable pavements are indicated on Curtin's drainage drawings ZD-CUR-G580-PL-GRD-92501

Permeable pavements contain proprietary products and as such, where used, the manufacturer's recommendations should be followed.

The permeable pavements are intended to be water quality and attenuation storage features. These features are intended to be dry except during rainfall events.

The surface has been designed to contain gaps where rain can flow through the upper construction layers into the voided stone which makes up the subbase. Where these features are intended to be used as infiltration devices or soakaways any capping also needs to be permeable to permit the flows to the formation.

Access for maintenance is provided as this is a surface feature only.

Regular inspection and maintenance is important for the effective operation of the pervious pavement.

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Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Initial Inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth. If required, take remedial action. Inspect silt accumulation rates and establish appropriate brushing frequencies. Silt can also be caused by adjacent landscaping areas which should be reprofiled to provide a flat area or berm adjacent to the paving.	3-monthly, 48 hours after large storms.
Regular maintenance\ inspection	Brushing and Vacuuming	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site specific observations of clogging or manufacturers' recommendations.
Occasional maintenance	Stabilise and mow contributing and adjacent areas.	As required and as per landscape architect's specification.
	Removal of weeds	As required.
Maintenance Schedule	**Required Action**	**Frequency**
Remedial Action	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users.	As required.

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	Rehabilitation of surface and upper sub-structure. This could include replacement of the jointing and bedding material. The upper geotextiles layer may also need replacing if clogged and Terram 1000 has a life span of 25 years.	As required (if infiltration performance is reduced as a result of significant clogging).

4.8 Rain Gardens

The locations of the rain gardens are indicated on Curtin's drainage drawing ZD-CUR-G580-PL-GRD-92501

The rain gardens are intended to be water quality and attenuation storage features. These features are intended to be dry except during rainfall events.

The surface has been designed as landscaping with a voided stone drainage layer below with perforated pipes, which rain can flow through the upper construction layers into the voided stone and into the perforated pipe.

Regular inspection and maintenance is important for the effective operation of the rain garden.

Maintenance Schedule	**Required Action**	**Frequency**
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Initial Inspection including incoming channel outlet boxes.	Half yearly and after large storms.
Regular maintenance\ inspection	Litter and debris removal	Monthly or as required
	Remove sediment from pre-treatment structures.	Monthly or as required
Remedial Action	Replace geotextiles and clean and replace filter media, if clogging occurs. Terram 1000 typical design life is 25 years.	As required.
	Excavate trench walls to expose clean soils if infiltration performance reduces to unacceptable levels.	As required.

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4.9 Petrol Interceptor

The location of the Petrol Interceptor is indicated on Curtin's drainage ZD-CUR-G580-PL-GRD-92501

The petrol interceptor units are intended for oil pollution control.

The Petrol Interceptor is specified as a SPEL CLASS 1 BY-PASS SEPRATOR 204 C1/SC with venting and alarm and are proprietary products; therefore, manufacturer's recommendations should also be taken into consideration.

Manufacturers information is enclosed in *Appendix C*.

Maintenance Schedule	**Required Action**	**Frequency**
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Inspect inlets for blockages, and clear if required. If faults persist jetting and CCTV survey may be required.	Monthly and after large storms.
Regular maintenance\ inspection	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly
	Remove sediment from pre-treatment structures and flow control chambers.	Annually (or as required after heavy rainfall events)
Remedial Actions	Repair/rehabilitation of inlets.	As required.

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5 Maintenance Schedule

DATE	COMPONENT	COMMENT	CHECKED BY

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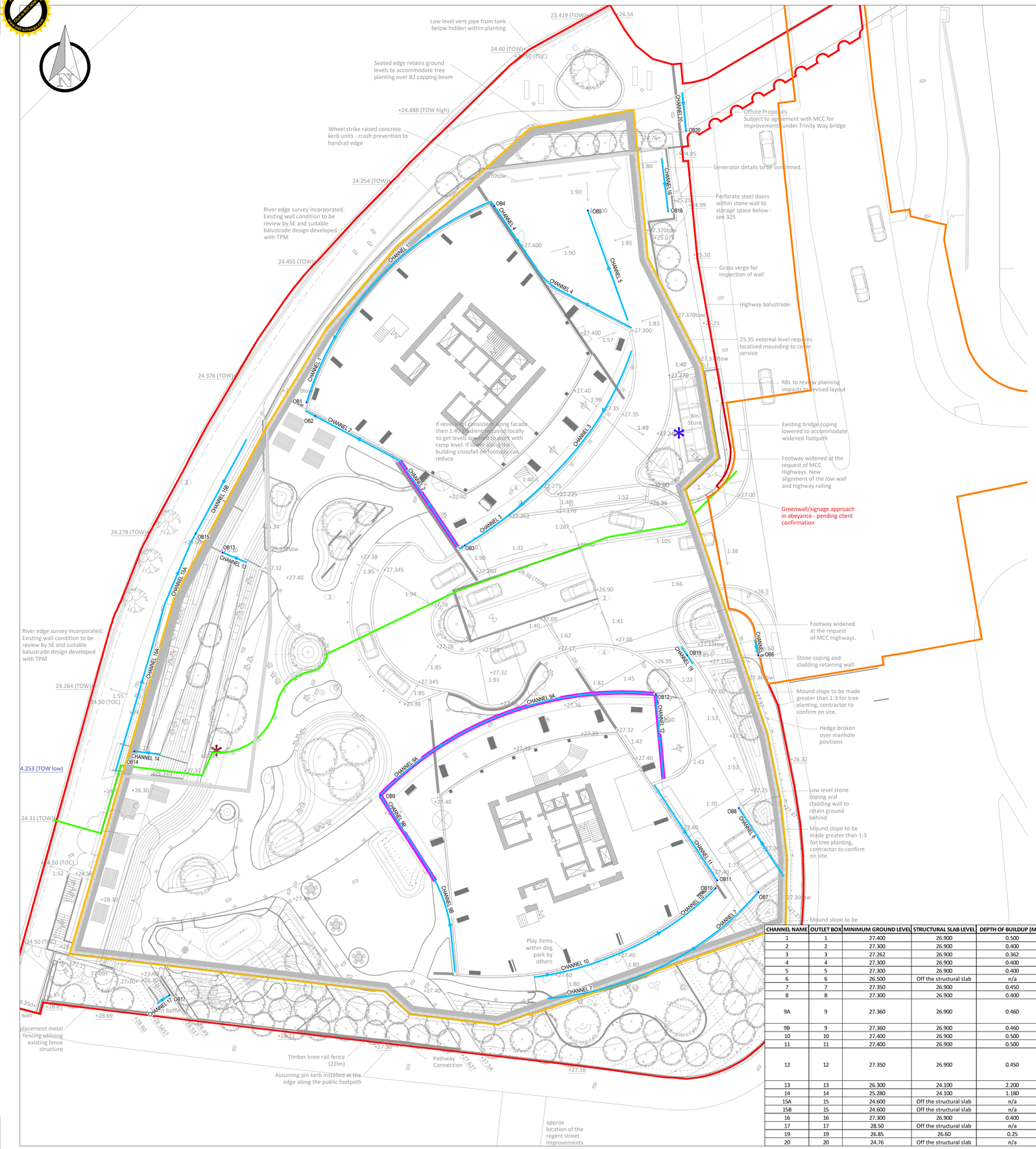
Appendix A

Proposed Drainage Drawings:

- ZD-CUR-G580-PL-GRD-92010 Channel Locations
- ZD-CUR-G580-PL-GRD-92501 Proposed Building 1 Surface Water Drainage Strategy
- ZD-CUR-G580-PL-GRD-92503 Proposed Foul Water Drainage Strategy
- ZD-CUR-G580-PL-GRD-92550 Proposed Slab Penetration
- ZD-CUR-G580-PL-DE-92530 Drainage Details Sheet 1
- ZD-CUR-G580-PL-DE-92531 Drainage Details Sheet 2
- ZD-CUR-G580-PL-DE-92535 Drainage Sections
- ZD-CUR-G580-PL-XX-92510 Drainage Notes
- ZD-CUR-G580-PL-XX-92520 Manhole Schedule

Proposed External Works Drawings:

- ZD-CUR-G700-PL-GRD-94700 External Works General Arrangement
- ZD-CUR-G700-PL-GRD-94710 External Works Build-up Details Sheet 1
- ZD-CUR-G700-PL-GRD-94711 External Works Build-up Details Sheet 2
- ZD-CUR-G700-PL-94720 Void Former Requirements



KEY:

- SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS
- S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-Z460-PL-XX-90000-P01
- PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)
- BASEMENT B1 EXTENTS (TAKEN FROM DRAWING ZD-WSP-G210-PL-XX-005_C02 CAPPING BEAM SITE D)
- ACCESS BOX AB
- OUTLET BOX OB
- PROPOSED SLOT DRAIN. TYPE TBA.
- PROPOSED SLOT DRAIN CHANNEL FOUNDATION REQUIRING WEEP HOLES AT 1M CENTERS

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING ZD-CUR-G580-PL-XX -92510.
5. FURTHER CO-ORDINATION REQUIRED BETWEEN EXTERNAL SERVICES AND THE PROPOSED DRAINAGE.

CHANNEL NAME	OUTLET BOX	MINIMUM GROUND LEVEL	STRUCTURAL SLAB LEVEL	DEPTH OF BUILDUP (MIN)	CATCHMENT TYPE	CATCHMENT AREA (m²)	CHANNEL LENGTH (m)	LOADING REQUIREMENTS	Notes
1	1	27.400	26.900	0.500	D2 North Tower Façade NORTH	180	34.00	PEDESTRIAN	
2	2	27.300	26.900	0.400	D1 North Tower Façade WEST	115	25.00	LIGHT VEHICLE	
3	3	27.262	26.900	0.362	D1 North Tower Façade SOUTH	120	32.00	HEAVY VEHICLE	
4	4	27.300	26.900	0.400	D1 North Tower Façade EAST	115	23.00	HEAVY VEHICLE	
5	5	27.300	26.900	0.400	Service Yard Area	323	14.00	HEAVY VEHICLE	
6	6	26.500	Off the structural slab	n/a	Pedestrian Ramp	17	2.00	PEDESTRIAN	
7	7	27.350	26.900	0.450	D2 Service Access	147	41.00	HEAVY VEHICLE	
8	8	27.300	26.900	0.400	D2 Service Access	73	10.00	HEAVY VEHICLE	
9A	9	27.360	26.900	0.460	D2 South Tower Façade NORTH/WEST	120	37.00	LIGHT VEHICLE	AB is located on a different slab. Structural slab level at outlet box is 26.600
9B	9	27.360	26.900	0.460	D2 South Tower Façade NORTH/WEST	115	23.00	LIGHT VEHICLE	
10	10	27.400	26.900	0.500	D2 South Tower Façade SOUTH	180	34.00	PEDESTRIAN	
11	11	27.400	26.900	0.500	D2 South Tower Façade SOUTH	65	13.00	HEAVY VEHICLE	
12	12	27.350	26.900	0.450	D2 South Tower Façade EAST	50	10.00	LIGHT VEHICLE	Outlet box 13 is located on a different slab. Structural slab level at outlet box is 26.600
13	13	26.300	24.100	2.200	Riverside Ramp/Stepped Area	114	2.50	PEDESTRIAN	
14	14	25.280	24.100	1.180	Riverside Ramp/Stepped Area	109	2.50	PEDESTRIAN	
15A	15	24.600	Off the structural slab	n/a	Riverside Ramp/Stepped Area	20	29.00	LIGHT VEHICLE	
15B	15	24.600	Off the structural slab	n/a	Riverside Ramp/Stepped Area	20	14.00	LIGHT VEHICLE	
16	16	27.300	26.900	0.400	Cantilever Slab	28	6.50	PEDESTRIAN	
17	17	28.50	Off the structural slab	n/a	Southern Site Boundary	7.00	2.00	PEDESTRIAN	
19	19	26.85	26.60	0.25	D2 Service Access	42.00	1.20	HEAVY VEHICLE	
20	20	24.76	Off the structural slab	n/a	Pedestrian Ramp	26.00	5.80	PEDESTRIAN	

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P06	CHANNEL 7 & 10 LENGTH REDUCED TO MATCH LATEST SITE LAYOUT	01.09.25	CS	CS
P05	CHANNEL 20 ADDED	19.08.25	PB	PB
P04	STAGE 4 UPDATE	30.06.23	CS	CG
P03	STAGE 4 ISSUE	20.01.23	CS	CG
P02	ISSUED WITH TECHNICAL NOTE	24.10.22	CS	CG
P01	ISSUED FOR INFORMATION	26.09.22	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: PROPOSED DRAINAGE CHANNEL DETAILS

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	26.09.22	CS	CG	CG

Scale: 1:250

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G580	- PL	- GRD	- 92010	- C01	

\\ms-fs-1\Projects\076001 - 076500\076567 - Trinity Islands\04-Production\4A-Models-Drawings\C-CAD\92...

RESIDUAL HAZARD REGISTER

ONLY RISKS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR HAVE NOT BEEN INDICATED ON THIS DRAWING. SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED, THE CONTRACTOR SHOULD NOTIFY ALL RELEVANT PROJECT TEAM MEMBERS.

HAZARD REF No.	ITEM (FEATURE, ELEMENT OR ACTIVITY)	RESIDUAL HAZARD
1.0	WORKING CLOSE TO WATERWAYS	CONTRACTOR TO ENSURE EDGE RESTRAINT IN PLACE AND MANAGEMENT PLAN IN PLACE FOR TIMES OF FLOODING.
2.0	SERVICES	EXISTING SERVICES TO REMAIN ARE TO BE PROTECTED OR DIVERTED
3.0	WORKING IN PROXIMITY TO EXISTING STRUCTURES (REGENT ROAD AND TRINITY WAY)	CONTRACTOR TO ENSURE WORKS DO NOT UNDERMINE EXISTING FOUNDATIONS

PETROL INTERCEPTOR - SPEL CLASS 1 BY-PASS SEPARATOR 204 C1/SC OR SIMILAR APPROVED
INLET IL:23.65
OUTLET IL:23.70

STONE LAYER TO BE PROVIDED UNDER BENCH FOUNDATIONS TO ALLOW LANDSCAPED AREA TO DRAIN VIA PERFORATED PIPE. SEE SECTION G-G ON CURTINS DRAWING ZD-CUR-G580-PL-GRD-92536

S11-600Ø
CL: 24.76
IL: 23.69

S19-450ØCP
CL: 24.80
IL:24.23

S11A-600Ø
CL: 24.60
IL: 23.53

225Ø 1:170

PI

S18 - 450ØCP
CL: 24.760
IL: 24.260

150Ø PERFORATED PIPE LAND DRAIN

S12-600ØCP
CL: 24.60
HLIL:23.64
IL: 23.28

225Ø 1:170

S13-600ØCP
CL: 24.60
HLIL:23.78
IL: 23.27

300Ø 1:240

225Ø

PENETRATION
IL: 23.680

PENETRATION IL: 25.905
DROP VERTICALLY BEND IL 24.11. SEE SECTION F-F ON CURTINS DRAWING ZD-CUR-G580-PL-GRD-92536

PIPE BEND IL: 24.11

S10A-600Ø
CL: 25.25
IL: 23.99

225Ø 1:30

CHANNEL 20

150Ø PERFORATED PIPE LAND DRAIN

CHANNEL 16

225Ø

150Ø

OB16

S13A-600ØCP
CL: 24.60
HLIL: 23.64
IL: 23.24

300Ø 1:240

225Ø

OB4

CHANNEL 4

PENETRATION
IL: 23.825

CHANNEL 1

PENETRATION
IL: 23.680

CHANNEL 4

CHANNEL 5

225Ø 1:38

S14-1500ØCP
CL: 24.60
HLIL:23.64
IL: 23.06

S20-450ØCP
CL: 24.80
IL: 24.18

300Ø 1:240

150Ø PERFORATED PIPE LAND DRAIN

CHANNEL 1

PENETRATION
IL: 24.655

225Ø

S10-600Ø
CL: 25.35
IL: 24.55

RE1
CL: 25.25
IL: 24.65

S15-1500ØCP
CL: 24.60
HLIL:23.64
IL: 23.05

375Ø 1:300

225Ø

OB1

PENETRATION
IL: 23.680

IP/OU

NON-RETURN VALVE
ALTHON HDPE
400mm FLAP VALVE

OB2

CHANNEL 2

WEEP HOLES TO BE PROVIDED THROUGH THE CHANNEL CONCRETE HAUNCHING TO ALLOW AREA UNDER BUILDING OVER SAIL TO DRAIN

Ramp level. If lower along the building crossfall on footway can reduce

CHANNEL 3

IP/OU

IP/OU

OUTFALL 1
CL: 24.60
IL: 22.99
NEW OUTFALL THROUGH EXISTING WALL. ALTHON 400mm TIDAL FLAP VALVE O.S.A. REQUIRED ON OUTLET. FLAP VALVE TO BE APPROVED BY PEEL.

375Ø 1:300

1500

CHANNEL 19A

PENETRATION
IL: 23.680

IP/OU

PROPOSED CONCRETE/GRANITE CHANNEL BLOCK. TYPE TBC BY LANDSCAPE ARCHITECT.

S16-1500Ø
CL: 24.60
IL: 23.00

OB15

OB13

CHANNEL 13

CHANNEL OUTLET TO DROP VERTICALLY AND BEND AT: 24.400

NON-RETURN VALVE
ALTHON HDPE 250mm
OR SIMILAR APPROVED

GROUND LEVELS TO SLOPE TOWARDS RIVER WALL RIVER EDGE TO BE FLUSH TO ALLOW FOR SURFACE WATER TO RUN OVER.

POTENTIAL SURCHARGED RIVER LEVEL OF 25.54m AOD BASED ON A 1 IN 100 YEAR EVENT + 70% INCREASE IN FLOW AT NODE 2 AS STATED IN CURTINS FRA DATED 12.11.21

CHANNEL 15A

100Ø

IP/OU

PENETRATION
IL: 25.636

PENETRATION
IL: 25.802

S1-600ØCP
CL: 26.53
HLIL:25.85
IL:25.32

TREE PIT OUTLET LOCATION TBC WITH LA. IL:24.410

S8A-600ØCP
CL: 24.65
IL: 23.25

300Ø 1:143

150Ø

IL:24.150

SEE SECTION E-E ON CURTINS DRAWING ZD-CUR-G580-PL-GRD-92536

CHANNEL 19

OB19

OB6

225ØHL

CHANNEL 5

300Ø 1:245

CHANNEL 9A

OB12

CHANNEL 12

PENETRATION
IL: 25.904

150ØHL

S1A-600ØCP
CL: 27.37
HLIL:25.85
IL: 25.28

PIPE TO DROP BELOW ACO CHANNEL

300Ø 1:170

CHANNEL 14

OB14

TREE PIT OUTLET LOCATION TBC WITH LA. IL:24.320

CHANNEL OUTLET TO DROP VERTICALLY AND BEND AT: 24.400

WEEP HOLES TO BE PROVIDED THROUGH THE CHANNEL CONCRETE HAUNCHING TO ALLOW AREA UNDER BUILDING OVER SAIL TO DRAIN

PENETRATION
IL: 25.816

S2-600ØCP
CL: 27.37
HLIL:25.79
IL: 25.25

S8-600ØCP
CL: 24.53
HLIL:23.80
IL: 23.41

300Ø

IP/OU

PENETRATION
IL: 23.830

OB9

CHANNEL 9B

CHANNEL 8

OB8

CHANNEL 11

S3-600ØCP
CL: 27.37
HLIL:26.19
IL: 25.19

PENETRATION
IL: 23.701

PENETRATION
IL: 26.213

OB10

OB11

OB7

150ØHL

300Ø 1:245

OUTFALL 2
CL: 24.55
IL: 23.24
NEW OUTFALL THROUGH EXISTING RIVER WALL. ALTHON 400mm TIDAL FLAP VALVE O.S.A. REQUIRED ON OUTLET. FLAP VALVE TO BE

375Ø 1:300

KEY:

- SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS
- PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)
- S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-G580-PL-XX-90000-P01
- BASEMENT B1 EXTENTS (TAKEN FROM DRAWING 10364-ZD-SHP-G100-PL-B1-0001-P12)
- EXISTING PUBLIC COMBINED DRAIN
- INDICATES PERMEABLE SUB-BASE LAYER FOR SURFACE WATER RUN-OFF COLLECTION ON SLAB.
- INDICATES PERMEABLE SUB-BASE LAYER FOR SURFACE WATER RUN-OFF COLLECTION OFF SLAB.
- ACCESS BOX
- OUTLET BOX
- GULLY BOX SUMPLESS (AR / RG)
- GULLY LOCATED ON STRUCTURAL SLAB BELOW SUBBASE (OB / SG)
- SLAB PENETRATION POINT FOR DRAINAGE TO BASEMENT
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SURFACE WATER FILTER DRAIN
- PROPOSED CHANNEL DRAIN. CURRENT PROPOSAL BASED ON ACO OR SIMILAR APPROVED.
- CHANNEL BLOCK TYPE KERB DIRECT RUN-OFF TOWARDS GULLY. TBC BY TPM.
- SW DRAINAGE WITHIN BASEMENT - BASED ON M&E DRAWING Z3D-FUT-G581-PI-B1-001
- FW DRAINAGE WITHIN BASEMENT - BASED ON M&E DRAWING Z3D-FUT-G581-PI-B1-001
- INSPECTION POINT/ OUTLET FROM THE PERMEABLE PAVING. CRATE BASED ON POLYPIPE PVC/PP 450(295)X295mm OR SIMILAR APPROVED (IP/OU)

DRAWING BASED ON:

ARCHITECT'S LAYOUTS
- D1-SHP-G200-PL-GRD-0001 REVISION P18
- D2-SHP-G200-PL-GRD-0001 REVISION D13

LANDSCAPE ARCHITECT'S LAYOUT
- ZD-TPM-G710-PL-XX-4029 101 REVISION P06

PROPOSED STRUCTURAL INFORMATION.
- ZD-WSP-G210-PL-XX-005 REVISION C03
- ZD-WSP-G222-PL-GRD-001 REVISION P05
- ZD-WSP-G210-DE-GRD-003 REVISION P01

TOPOGRAPHICAL SURVEY
- 20K269 BY SURVEY OPERATIONS RECEIVED 24.02.21

RIVER WALL SURVEY
- 220617SR BY SURVEY OPERATIONS RECEIVED 20.06.22

M&E
- Z3D-FUT-G581-PI-B1-001 REVISION P06
- Z3D-FUT-G581-PI-B1-002 REVISION P06

DESIGN PHILOSOPHY

SURFACE WATER DESIGN
FLOWS ARE TO BE RESTRICTED TO A MAXIMUM DISCHARGE VELOCITY OF 2m/s INTO THE RIVER IRWELL.

SITE D:

OUTFALL: 2 PROPOSED OUTFALLS TO THE RIVER IRWELL

BASED ON LIMITING FACTOR OF 2m/s THE URRENT MAXIMUM DISCHARGE RATE DURING A 100 YEAR STORM EVENT INCLUDING 40% CLIMATE CHANGE EVENT FROM OUTFALL 1 IS 202l/s AND 194l/s FROM OUTFALL 2

POLLUTION TREATMENT: CAR PARK/HIGHWAY DRAINAGE IS DISCHARGED TO THE SURFACE WATER NETWORK VIA A PETROL INTERCEPTOR.

ALL INTERNAL CARPARK DRAINAGE IS TO BE PICKED UP IN FOUL GULLIES FOR WASHDOWN. ANY SPILLS TO BE CONTAINED AND DISPOSED OF APPROPRIATELY.

FOUL WATER DESIGN
FW PEAK FLOW RATE: 59.2l/s BASED ON TOTAL DISCHARGE UNITS AT OUTFALL PIPE FLOWS BASED ON M&E DRAWINGS Z3D-FUT-G581-PI-B1-001/Z3D-FUT-G581-PI-B1-002 DATED 12.05.23.

OUTFALL: CW SEWER WITHIN TRINITY WAY (ICOSA TO CONFIRM IF THEY WILL AGREE S106 WITH UU).

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING ZD-CUR-G580-PL-XX -92510.
5. FURTHER CO-ORDINATION REQUIRED BETWEEN EXTERNAL SERVICES AND THE PROPOSED DRAINAGE.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	31.07.26	KS	CS
P04	DRAINAGE CHANNEL 20 ADDED.	01.09.25	CS	CS
P03	STAGE 4 UPDATE	01.03.24	CS	CG
P02	STAGE 4 ISSUE	30.06.23	CS	CG
P01	STAGE 4 ISSUE	20.01.23	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: PROPOSED SURFACE WATER DRAINAGE LAYOUT SITE D SHEET 1 OF 2

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	20.12.22	CS	CG	CG
Scale: 1:250				

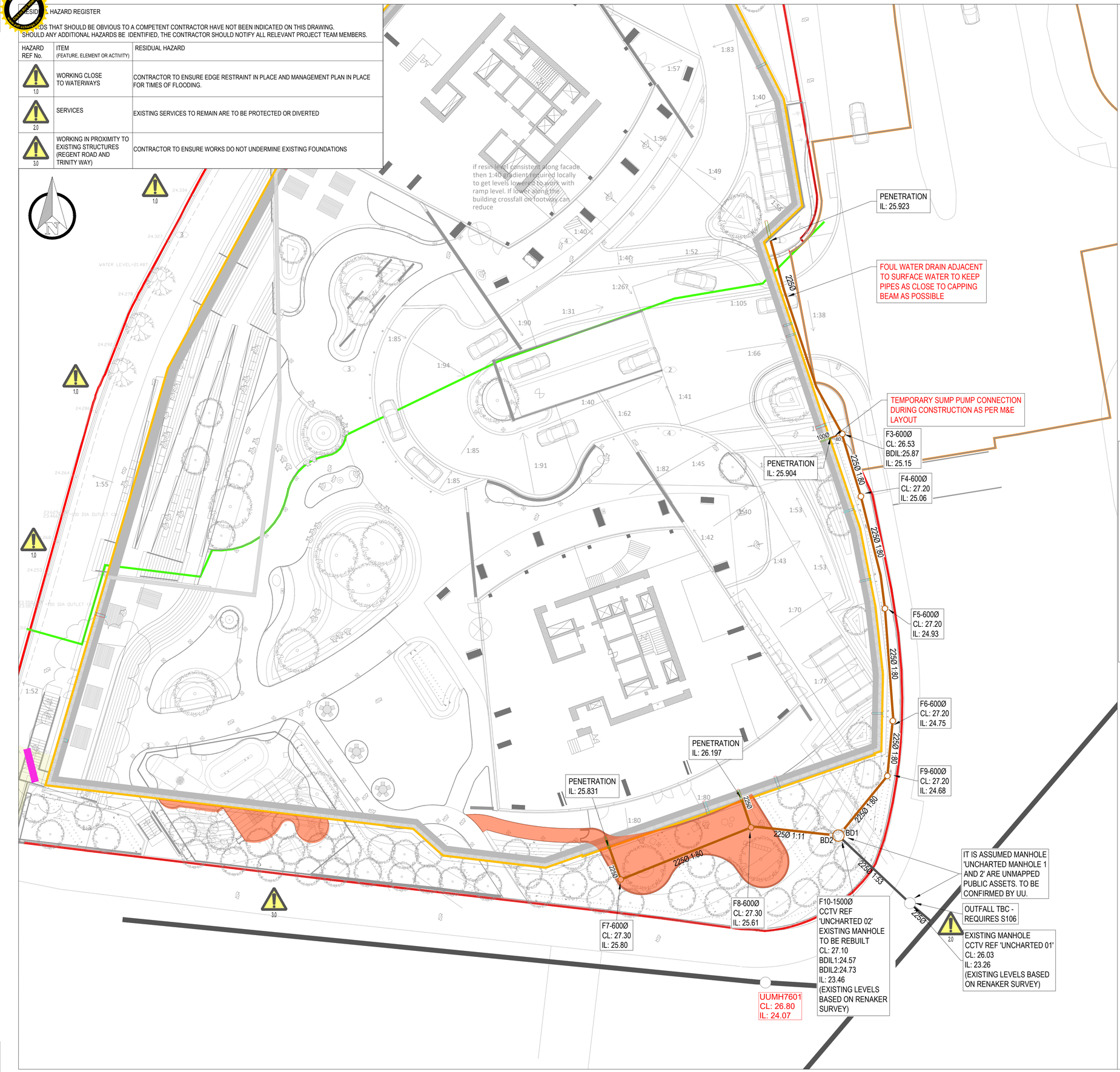
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G580	- PL	- GRD	- 92501 -	C01	

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RESIDUAL HAZARD REGISTER

HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR HAVE NOT BEEN INDICATED ON THIS DRAWING. SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED, THE CONTRACTOR SHOULD NOTIFY ALL RELEVANT PROJECT TEAM MEMBERS.

HAZARD REF No.	ITEM (FEATURE, ELEMENT OR ACTIVITY)	RESIDUAL HAZARD
1.0	WORKING CLOSE TO WATERWAYS	CONTRACTOR TO ENSURE EDGE RESTRAINT IN PLACE AND MANAGEMENT PLAN IN PLACE FOR TIMES OF FLOODING.
2.0	SERVICES	EXISTING SERVICES TO REMAIN ARE TO BE PROTECTED OR DIVERTED
3.0	WORKING IN PROXIMITY TO EXISTING STRUCTURES (REGENT ROAD AND TRINITY WAY)	CONTRACTOR TO ENSURE WORKS DO NOT UNDERMINE EXISTING FOUNDATIONS



KEY:

- SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS
- PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)
- S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-G580-PL-XX-90000-P01
- BASEMENT B1 EXTENTS (TAKEN FROM DRAWING 10364-ZD-SHP-G100-PL-B1-0001-P12)
- EXISTING PUBLIC COMBINED DRAIN
- PROPOSED FOUL WATER DRAINAGE
- SW DRAINAGE WITHIN BASEMENT - BASED ON M&E DRAWING Z3D-FUT-G581-PI-B1-001
- FW DRAINAGE WITHIN BASEMENT - BASED ON M&E DRAWING Z3D-FUT-G581-PI-B1-001

DRAWING BASED ON:

ARCHITECT'S LAYOUTS
- D1-SHP-G200-PL-GRD-0001 REVISION P18
- D2-SHP-G200-PL-GRD-0001 REVISION D13

LANDSCAPE ARCHITECT'S LAYOUT
- ZD-TPM-G710-PL-XX-4029 101 REVISION P06

PROPOSED STRUCTURAL INFORMATION.
- ZD-WSP-G210-PL-XX-005 REVISION C03
- ZD-WSP-G222-PL-GRD-001 REVISION P05
- ZD-WSP-G210-DE-GRD-003 REVISION P01

TOPOGRAPHICAL SURVEY
- 20K269 BY SURVEY OPERATIONS RECEIVED 24.02.21

RIVER WALL SURVEY
- 220617SR BY SURVEY OPERATIONS RECEIVED 20.06.22

M&E
- Z3D-FUT-G581-PI-B1-001 REVISION P06
- Z3D-FUT-G581-PI-B1-002 REVISION P06

DESIGN PHILOSOPHY

SURFACE WATER DESIGN
FLOWS ARE TO BE RESTRICTED TO A MAXIMUM DISCHARGE VELOCITY OF 2m/s INTO THE RIVER IRWELL.

SITE D:

OUTFALL: 2 PROPOSED OUTFALLS TO THE RIVER IRWELL

BASED ON LIMITING FACTOR OF 2m/s THE URRENT MAXIMUM DISCHARGE RATE DURING A 100 YEAR STORM EVENT INCLUDING 40% CLIMATE CHANGE EVENT FROM OUTFALL 1 IS 202l/s AND 194l/s FROM OUTFALL 2

POLLUTION TREATMENT: CAR PARK/HIGHWAY DRAINAGE IS DISCHARGED TO THE SURFACE WATER NETWORK VIA A PETROL INTERCEPTOR.

ALL INTERNAL CARPARK DRAINAGE IS TO BE PICKED UP IN FOUL GULLIES FOR WASHDOWN. ANY SPILLS TO BE CONTAINED AND DISPOSED OF APPROPRIATELY.

FOUL WATER DESIGN
FW PEAK FLOW RATE: 59.2l/s BASED ON TOTAL DISCHARGE UNITS AT OUTFALL PIPE FLOWS BASED ON M&E DRAWINGS Z3D-FUT-G581-PI-B1-001/Z3D-FUT-G581-PI-B1-002 DATED 12.05.23.

OUTFALL: CW SEWER WITHIN TRINITY WAY (ICOSA TO CONFIRM IF THEY WILL AGREE S106 WITH UU).

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING ZD-CUR-G580-PL-XX -92510.

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CG
P04	STAGE 4 UPDATE	01.03.24	CS	CG
P03	STAGE 4 UPDATE	30.06.23	CS	CG
P02	STAGE 4 UPDATE	27.01.23	CS	CG
P01	STAGE 4 ISSUE	20.01.23	CS	CG

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Status: FINAL CONSTRUCTION

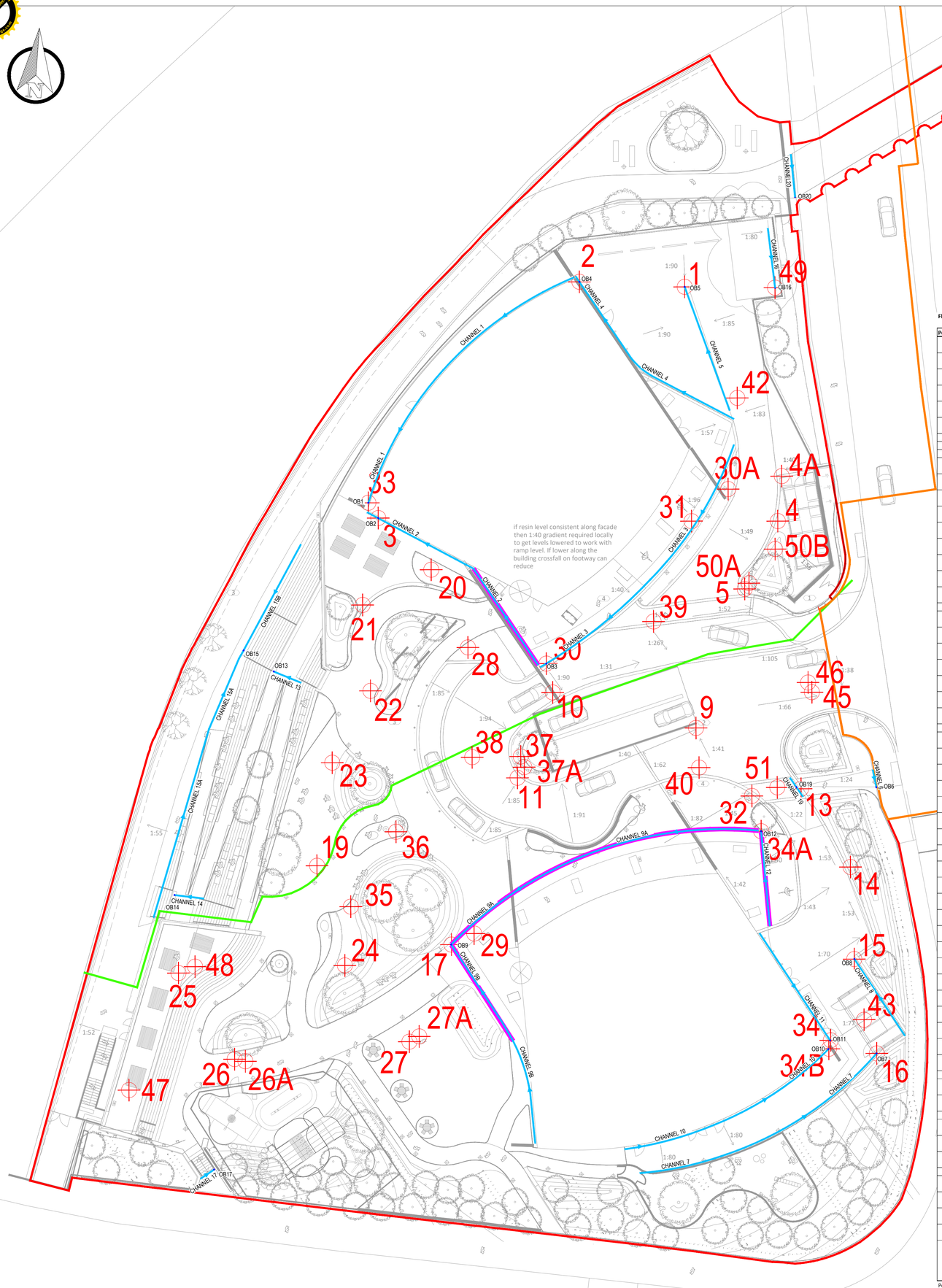
Project: TRINITY ISLANDS

Drg Title: PROPOSED FOUL WATER DRAINAGE LAYOUT SITE D

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	20.12.22	CS	CG	CG
Scale: 1:200				

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G580	- PL	- GRD	- 92503	- C01	

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Flow Rates based on a free discharge pipe SIZE @ 1:80 using the area draining and a time of entry of 5 mins. FLOW Model

Penetration Ref	Location	Drains	Area (m2)	Area (Ha)	Peak Flow l/s (1 in 100 year +40%cc)	Pipe Size	Opening Size Required in Slab	Comments
1	Channel OB5	Service Yard Area	323	0.032	17.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	Channel outlet moved due to a change in LA levels.
2	Channel OB4	D1 North Tower Façade EAST	115	0.012	6.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
3	Channel OB2	D1 North Tower Façade WEST	115	0.012	6.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
4	Surface Gully	D1 Service Access	71	0.007	3.6	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
4A	Surface Gully	D1 Service Access	51	0.005	2.6	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
5	Surface Gully	D1 Service Access	68	0.007	3.6	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
6				OMITTED				Gully moved off the slab
7				OMITTED				Gully moved off the slab
8				OMITTED				Channel to entrance
9	Surface Gully	Access Road	115	0.012	6.2	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	Moved location due to LA levels
10	Surface Gully	Access Road	128	0.013	6.8	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
11	Surface Gully	Access Road	66	0.007	3.6	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
12				OMITTED				Omitted but now replaced with Penetration 34A
13	Surface Gully	D2 Service Access	42	0.004	2.0	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
14	Surface Gully	D2 Service Access	89	0.009	4.6	150	Pipe external diameter tbc by M&E. See Curtins drawing ZD-CUR-0G580-PL-DE-92531	
15	Channel OB8	D2 Service Access	73	0.007	3.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
16	Channel OB7	D2 Service Access	147	0.015	7.7	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
17	Channel OB9	D2 South Tower Façade NORTH/WEST	235	0.024	12.4	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
18				OMITTED				
19	Landscaped Areas	Public Realm	49	0.005	2.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
20	Landscaped Areas	Public Realm	100	0.010	5.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
21	Permeable Paving Outlet	Public Realm	170	0.017	8.8	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Moved due to tree root ball as per TPM request
22	Landscaped Areas	Public Realm	123	0.012	6.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	Moved due to tree root ball as per TPM request
23	Landscaped Areas	Public Realm	100	0.010	5.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
24	Permeable Paving Outlet	Public Realm	131	0.013	6.7	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Moved due to tree root ball as per TPM request
25	Permeable Paving Outlet	Public Realm (Higher Slab)	50	0.005	2.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
25A				OMITTED				Omitted due to no long demise upstand
26	Permeable Paving Outlet	Public Realm	171	0.017	8.8	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Moved due to tree root ball as per TPM request
26A	Permeable Paving Outlet	Public Realm	154	0.015	7.7	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Moved due to tree root ball as per TPM request
27	Landscaped Areas	Public Realm	221	0.022	11.4	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
27A	Landscaped Areas	Public Realm	282	0.028	14.5	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
28	Landscaped Areas	Public Realm	51	0.005	2.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
29	Permeable Paving Outlet	Public Realm	245	0.025	12.9	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
30	Channel OB3	D1 North Tower Façade SOUTH	120	0.012	6.2	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
30A	Landscaped Areas	Landscaped Areas	26	0.003	1.5	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
31	Permeable Paving Outlet	D1 Under Canopy	229	0.023	11.9	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
32	Permeable Paving Outlet	Public Realm	148	0.015	7.7	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
33	Channel OB1	D1 North Tower Façade NORTH	180	0.018	9.3	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
34	Channel OB11	D2 South Tower Façade EAST	65	0.007	3.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
34A	Channel OB12	D2 South Tower Façade EAST	50	0.005	2.6	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
34B	Channel OB10	D2 South Tower Façade SOUTH	180	0.018	9.3	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	
35	Permeable Paving Outlet	Public Realm	153	0.015	3.1	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Moved due to tree root ball as per TPM request
36	Permeable Paving Outlet	Public Realm	149	0.015	7.7	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
37	Landscaped Areas	Landscaped Areas	22	0.002	7.8	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
37A	Landscaped Areas	Landscaped Areas	22	0.002	1.0	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	
38	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A	Allow for 100mm pipe for residual flows	See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	Gully to be located on the structual slab with a geotextile mat above gully inlet.
39	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	
40	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	Yard gully moved into impermeable consctuction
41				OMITTED				
42	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	Gully to be located on the structual slab with a geotextile mat above gully inlet.
43	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	
44				OMITTED				Omitted due to no long demise upstand
45	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	
46	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A		See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	
47	Permeable Paving Outlet	Public Realm	58	0.006	3.1	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	
47A				OMITTED				Omitted due to no long demise upstand
48	Permeable Paving Outlet	Public Realm	27	0.003	1.5	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section B-B	Position moved north by approximately 1.5m due to space behind the steps
49	Channel OB16	D1 Generator	28	0.003	1.5	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section D-D	Channel added on cantilever slab.
50A	Landscaped Areas	Landscaped Areas	22	0.002	1.0	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	Landscape outlet added due to upstand preventing natural runoff to the landscaping.
50B	Landscaped Areas	Landscaped Areas	22	0.002	1.0	150	See curtins drawing ZD-CUR-G580-PL-SE-92535 section C-C	Landscape outlet added due to upstand preventing natural runoff to the landscaping.
51	Sub-base Gully	Located under Imp Construction	N/A	N/A	N/A	Allow for 100mm pipe for residual flows	See curtins drawing ZD-CUR-G580-PL-SE-92535 section A-A	Additional Subbase gully required to drain the slab now severed by the utilities trench.

Penetrations from Building Towers not included in above calculations - TBC By M&E

GENERAL NOTES:

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3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING ZD-CUR-G580-PL-XX -92510.
5. FURTHER CO-ORDINATION REQUIRED BETWEEN EXTERNAL SERVICES AND THE PROPOSED DRAINAGE.

DRAWING BASED ON:

ARCHITECT'S LAYOUTS
- D1-SHP-G200-PL-GRD-0001 REVISION P18
- D2-SHP-G200-PL-GRD-0001 REVISION D13

LANDSCAPE ARCHITECT'S LAYOUT
- ZD-TPM-G710-PL-XX-4029 101_WIP RECEIVED 16.05.23

PROPOSED SERVICES
- AWAITING DETAILS

PROPOSED STRUCTURAL INFORMATION.
- ZD-WSP-G210-PL-XX-005 REVISION C03
- ZD-WSP-G222-PL-GRD-001 REVISION P05

TOPOGRAPHICAL SURVEY
- 20K269 BY SURVEY OPERATIONS RECEIVED 24.02.21

RIVER WALL SURVEY
- 220617SR BY SURVEY OPERATIONS RECEIVED 20.06.22

M&E
- Z3D-FUT-G581-PI-B1-001 REVISION P06
- Z3D-FUT-G581-PI-B1-002 REVISION P06

KEY:

SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS

S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-Z460-PL-XX-90000-P01

PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)

INDICATVE DRAINAGE PENETRATION THROUGH SLAB TO BASEMENT B1 LEVEL

THE PROPOSED SLAB PENETRATION POINTS ARE INDICATIVE AND WILL NEED TO ENSURE THAT THE POINT IS LOCATED AT THE LOWEST LEVEL OF THE SLAB FOR THE CATCHMENT AREA DRAINING TO EACH PENETRATION POINT - SLAB IS ASSUMED AS FLAT.

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P06	STAGE 4 UPDATE	30.06.23	CS	CG
P05	STAGE 4 UPDATE	28.04.23	CS	CG
P04	STAGE 4 ISSUE	20.01.23	CS	CG
P03	ISSUED WITH TECHNICAL NOTE	24.10.22	CS	CG
P02	ISSUED FOR INFORMATION	10.10.22	CS	CG
P01	ISSUED FOR INFORMATION	21.07.22	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: PROPOSED DRAINAGE SLAB PENETRATIONS SITE D

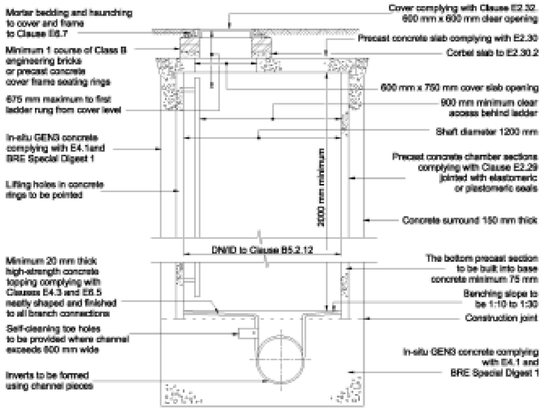
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A1	21/06/22	CS	CG	CG
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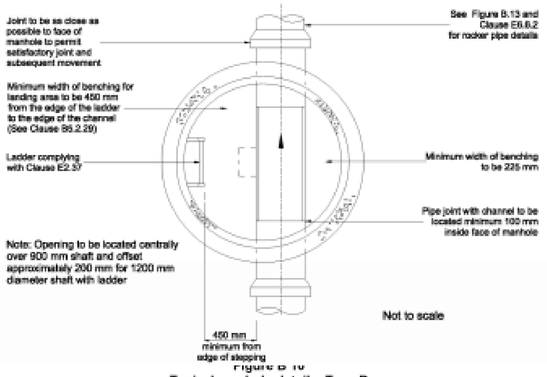
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G580	- PL	- GRD	- 92550 -	C01	

\\ma-fs-1\Projects\078001 - 079000\078567 - Trinity Islands\04-Production\44-Models-Drawings\CAD\92\

Typical manhole detail – Type A2

Depth from cover level to soffit of pipe 3 m to 6 m with ladder
Alternative rigid material construction with concrete surround

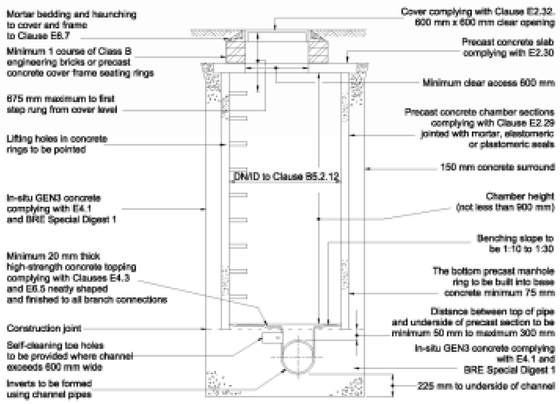


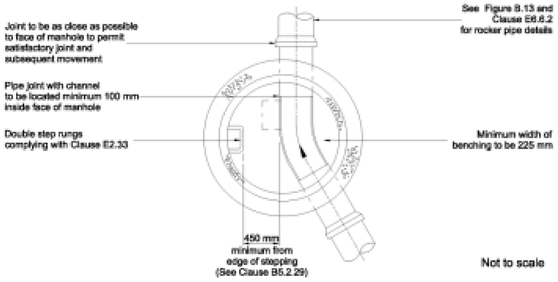


Not to scale

Typical manhole detail – Type B

Depth from cover level to soffit of pipe 1.5 m to 3 m
Alternative rigid material construction with concrete surround

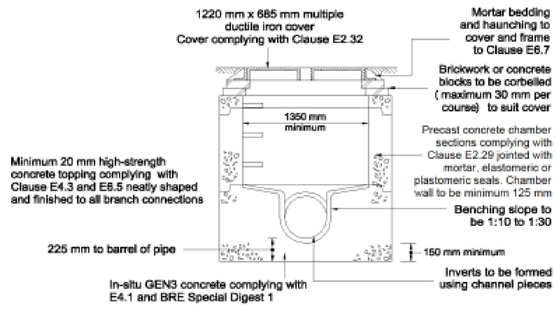


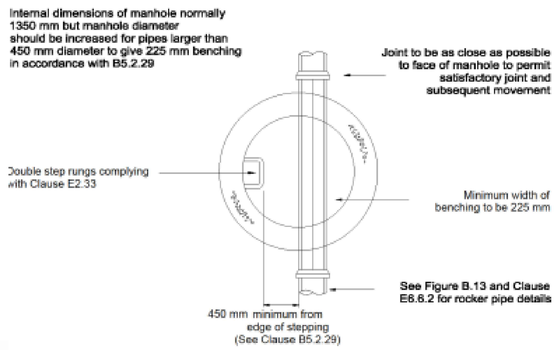


Not to scale

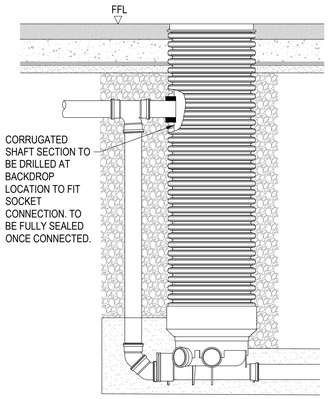
Figure B 15
Typical manhole detail – Type C

Depth from cover level to soffit of pipe less than 1.5 m
Rigid material construction



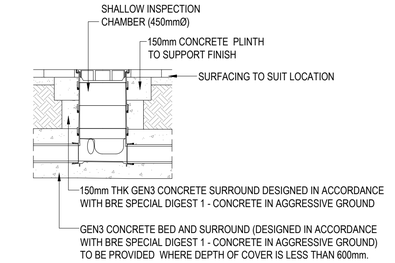


Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

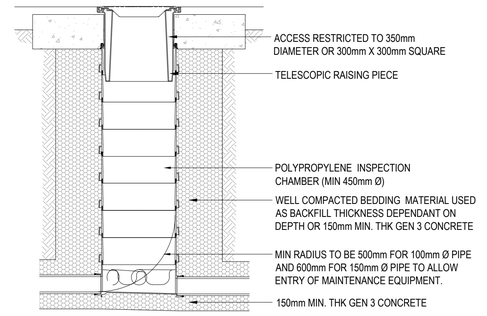


FOR GENERAL CHAMBER NOTES REFER TO TYPICAL INSPECTION CHAMBER DETAIL

TYPICAL INSPECTION CHAMBER BACKDROP DETAIL

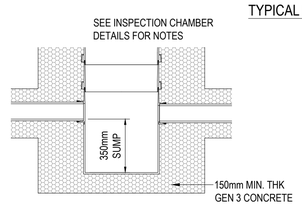


SHALLOW INSPECTION CHAMBER MAX DEPTH 0.6m

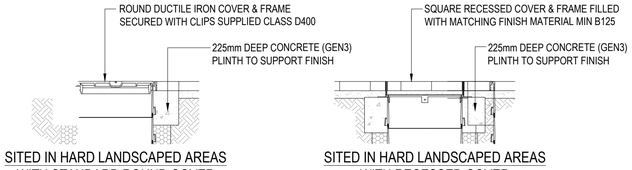


DEEP INSPECTION CHAMBER DEPTHS BETWEEN 1.2m AND 3.0m

TYPICAL INSPECTION CHAMBER DETAILS - PPIC

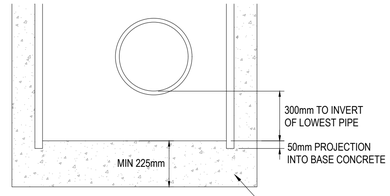


PPIC CATCHPIT BASE DETAIL



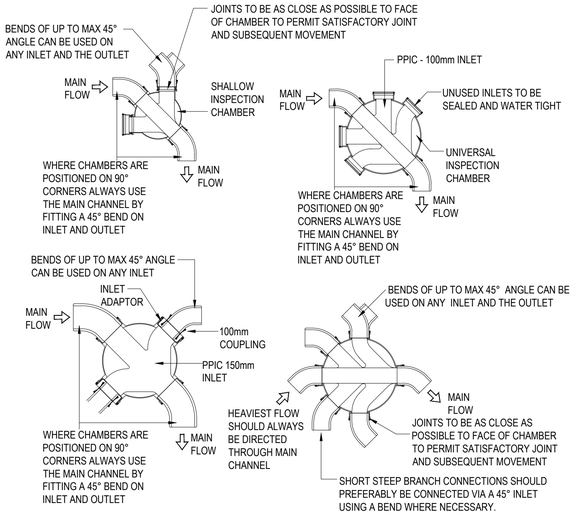
SITED IN HARD LANDSCAPED AREAS WITH STANDARD ROUND COVER

SITED IN HARD LANDSCAPED AREAS WITH RECESSED COVER

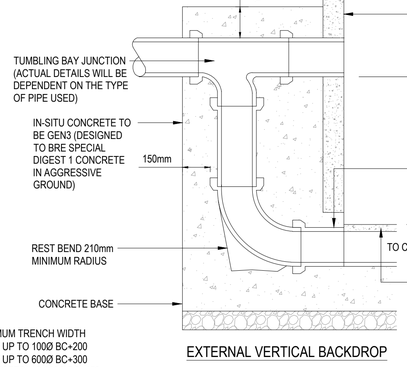


CATCH PIT DETAIL

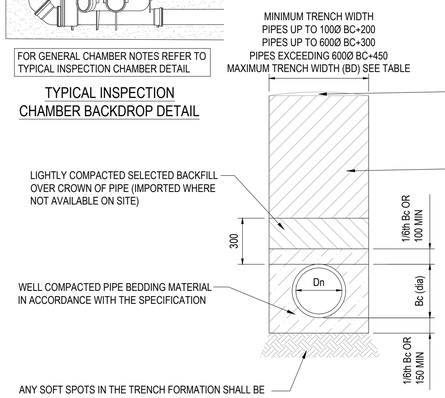
TYPICAL INSPECTION CHAMBER COVER DETAILS



INSPECTION CHAMBER BASE DETAILS



EXTERNAL VERTICAL BACKDROP



CLASS S - 360° GRANULAR SURROUND PIPE BEDDING DETAIL

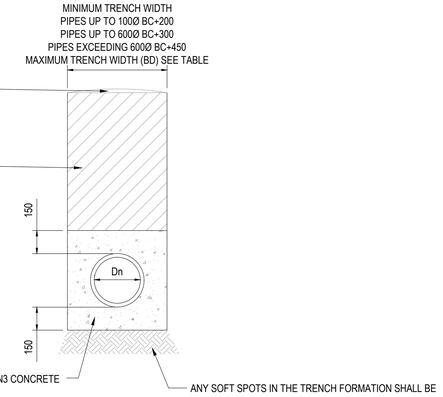
SOFT LANDSCAPE AREAS
IN SOFT LANDSCAPING AREAS TRENCH FILL ABOVE PIPES IS TO BE MOUNDED TO A MAXIMUM DEPTH OF 50MM TO ALLOW FOR FUTURE SETTLEMENT.

HARDSTANDING AREAS
SHW TYPE 1 GRANULAR MATERIAL
SOFT LANDSCAPE AREAS
SELECTED BACKFILL MATERIAL UP TO UNDERSIDE OF TOP-SOIL

THE FLEXIBLE JOINTS IN THE PIPES SHALL BE MAINTAINED AT THE END OF EACH PIPE WITH COMPRESSIBLE SHEET CUT ACCURATELY TO FIT THE PIPE PROFILE TO BREAK THE CONCRETE SURROUND

Dn	Bd
150	0.6
225	0.7
300	0.85
375	1.05
450	1.15
525	1.25
600	1.35
675	1.45
750	1.50

MAXIMUM TRENCH WIDTH



CLASS Z - CONCRETE BED AND SURROUND PIPE BEDDING DETAIL

(COVER < 900mm IN VEHICULAR LOADING AND OPEN FIELD.
COVER <600mm ELSEWHERE EXCEPT UNDER BUILDINGS.)

GENERAL NOTES:

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3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. SULPHATE RESISTANT CEMENT DC2 AND PRECAST CONCRETE PRODUCTS MUST BE USED WHERE SULPHATE FOUND, OR WHERE NO SULPHATES THEN C20- GEN 3

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P03	STAGE 4 UPDATE	30.06.23	CS	CG
P02	STAGE 4 ISSUE	20.01.23	CS	CG
P01	ISSUED FOR INFORMATION	05.07.22	CS	CG

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Status: FINAL CONSTRUCTION

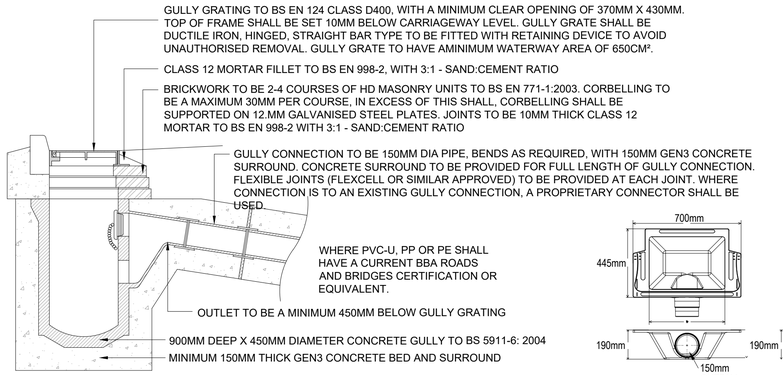
Project: TRINITY ISLANDS

Drg Title: DRAINAGE DETAILS SHEET 1

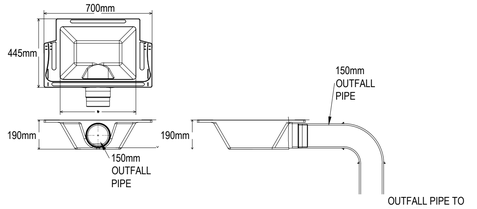
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A1	21/06/22	CS	CG	CG
Scale: NTS				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
ZD	- CUR	- G580	- DE-	XX	- 92530	-C01	

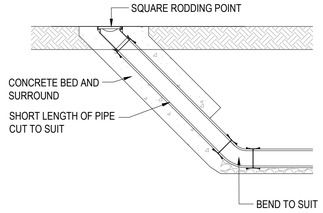
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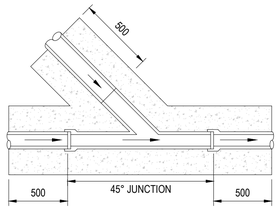
ROAD GULLY DETAIL



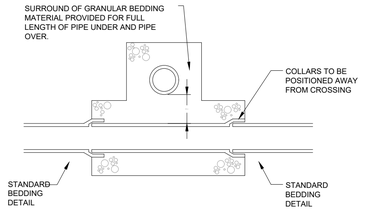
WREKIN D400 GULLY CHUTE CONNECTOR



RODDING POINT DETAIL (RE)



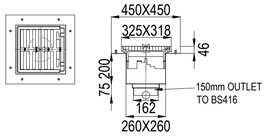
TYPICAL SADDLE CONNECTION



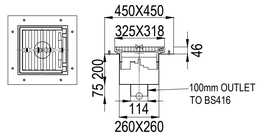
PIPE CROSSINGS DETAIL

GENERAL NOTES:

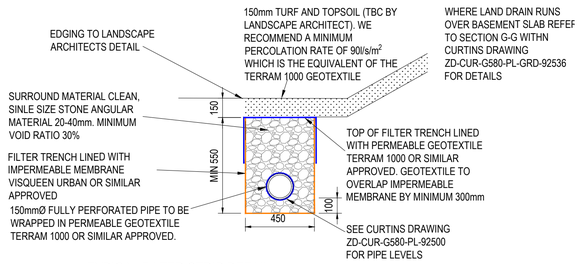
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WADE F306 GULLY WITH CAST IRON BODY AND SHERARDIZED DUCTILE IRON HINGED GRATING



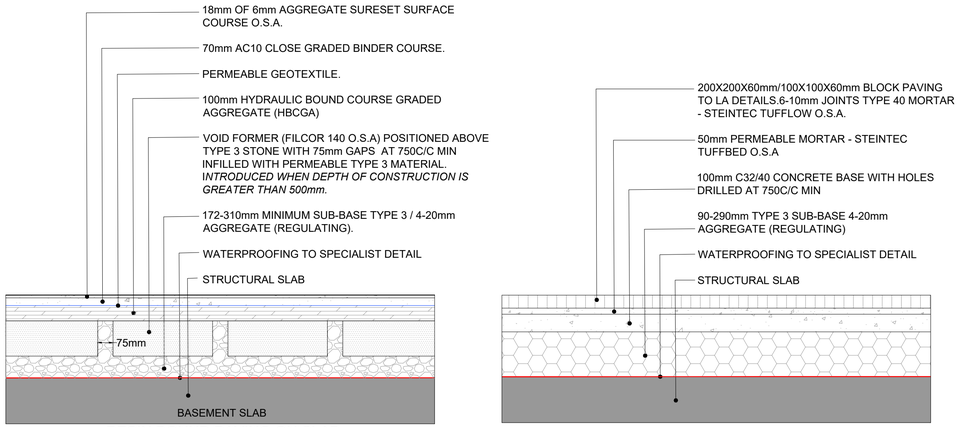
WADE F304 GULLY WITH CAST IRON BODY AND SHERARDIZED DUCTILE IRON HINGED GRATING



TYPICAL FILTER STRIP DETAIL

GEOTEXTILE USED IS TERRAM 1000 (PERMEABILITY 90l/s/m²) PERCOLATION INTO THE FILTER STRIP IS BASED ON THE PERMEABILITY OF THE TERRAM 1000 AS THIS IS THE LIMITIN FACTOR.

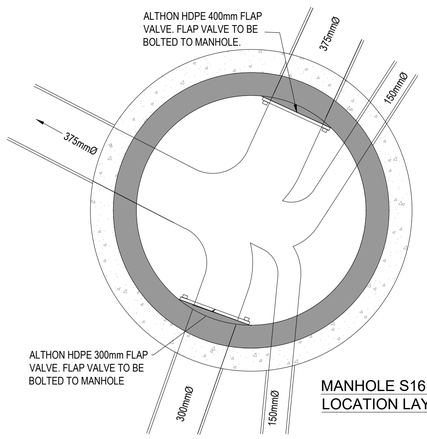
IF AN ALTERNATIVE PRODUCT IS PROPOSED, THE PERMEABILITY WILL NEED TO BE CHECKED TO CONFIRM.



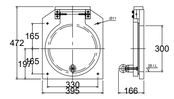
RESIN BOUND PAVING ON SLAB PERMEABLE (PEDESTRIAN/LIGHT LOADING)

CUBE BLOCK PAVING ON SLAB PERMEABLE (PEDESTRIAN/LIGHT LOADING)

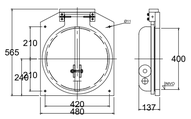
SUBJECT TO FINAL COORDINATION WITH EXTERNAL WORKS BUILD UP DESIGN



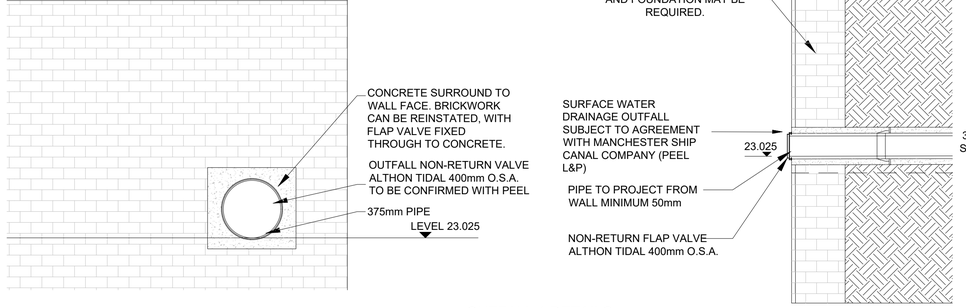
MANHOLE S16 FLAP VALVE LOCATION LAYOUT DETAIL



ALTHON HDPE 300mm FLAP VALVE
Material: HDPE, SS316, EPDM
Opening: ø300mm
Max load from bottom invert level (B.I.L):
1.3MWC long period (=50 years)
5MWC short period (=72hours)
Number of chemical anchors M8: 4 pieces
All dimensions in mm

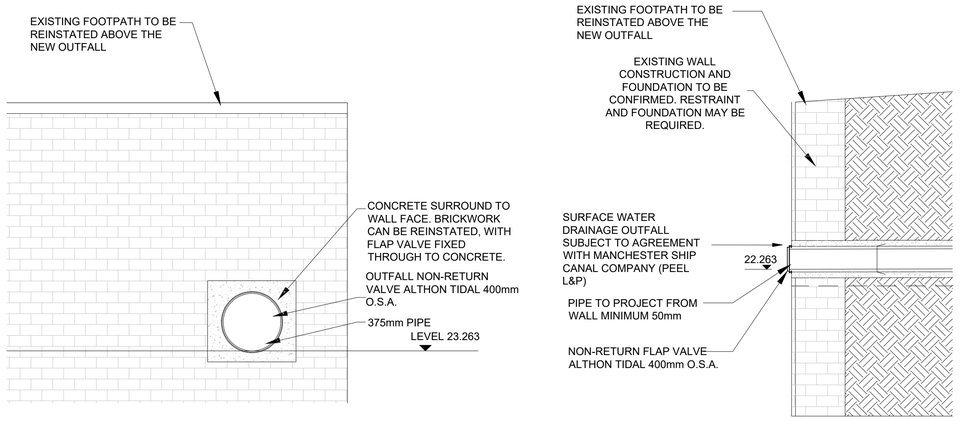


ALTHON HDPE 400mm FLAP VALVE
Material: HDPE, SS316, EPDM
Opening: ø400mm
Max load from bottom invert level (B.I.L):
1.4MWC long period (=50 years)
5MWC short period (=72hours)
Number of chemical anchors M8: 4 pieces
All dimensions in mm



OUTFALL 1 DETAILS
(SCALE 1:20)

SUBJECT TO AGREEMENT WITH PEEL



OUTFALL 2 DETAILS
(SCALE 1:20)

SUBJECT TO AGREEMENT WITH PEEL

CONSTRUCTION RECORD - FINAL CONSTRUCTION

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Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CG
P06	PERMEABLE BUILD-UPS UPDATED TO CURRENT DESIGN	12.09.23	CS	CG
P05	STAGE 4 UPDATE	30.06.23	CS	CG
P04	STAGE 4 UPDATE	28.04.23	CS	CG
P03	STAGE 4 ISSUE	20.01.23	CS	CG
P02	PERMEABLE DETAILS ADDED	28.07.22	CS	CG
P01	ISSUED FOR INFORMATION	05.07.22	CS	CG

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Status: FINAL CONSTRUCTION

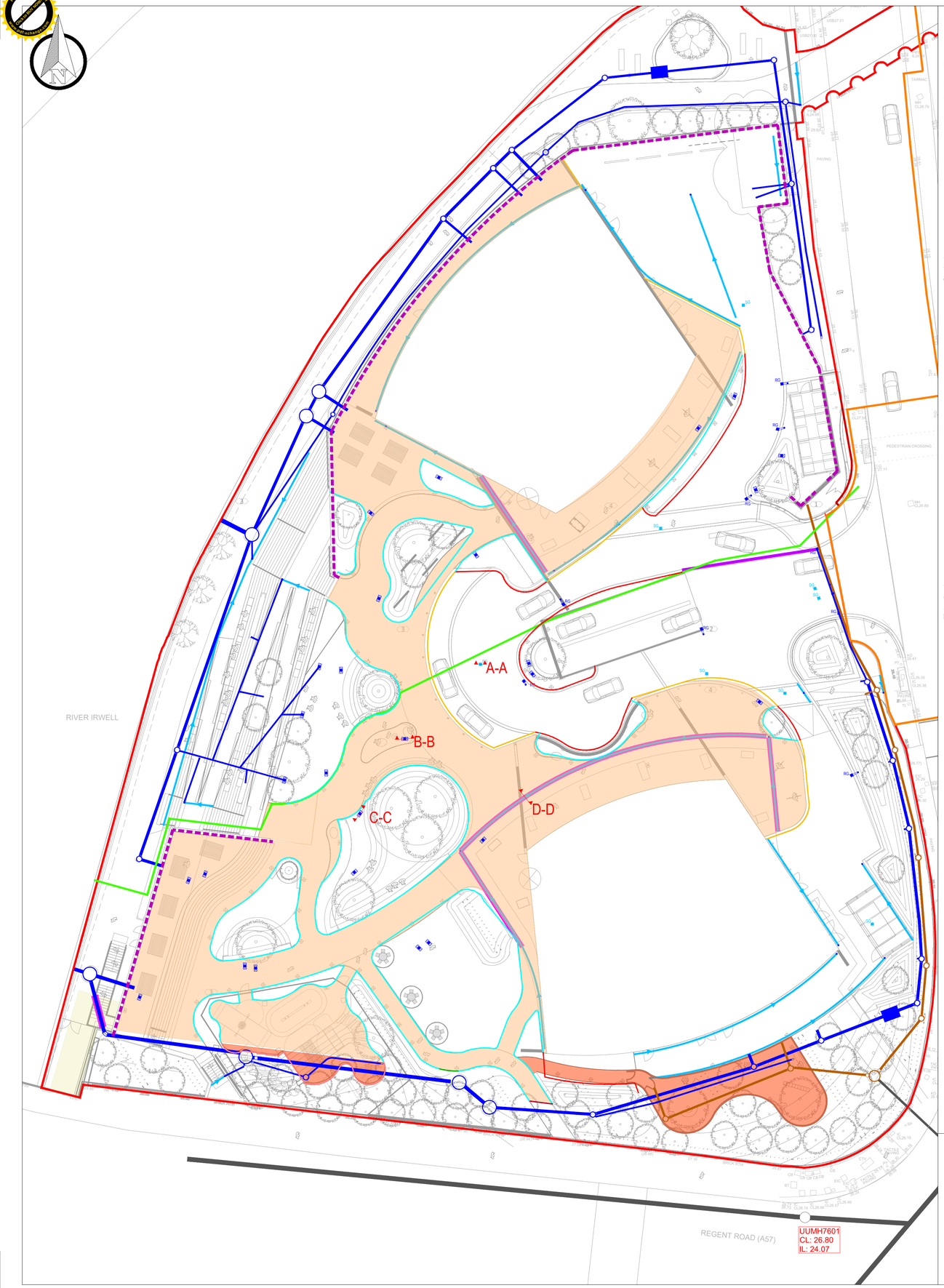
Project: TRINITY ISLANDS

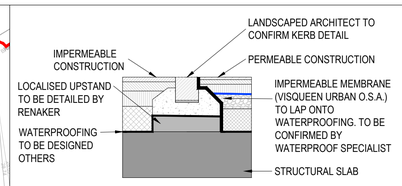
Drg Title: DRAINAGE DETAILS SHEET 2

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	21/06/22	CS	CG	CG
Scale: 1:20				

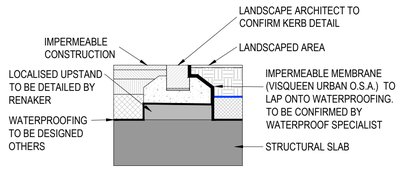
Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
ZD	- CUR	- G580	- DE-	XX	- 92531	-C01	

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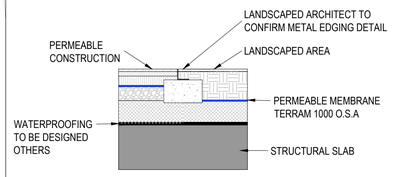




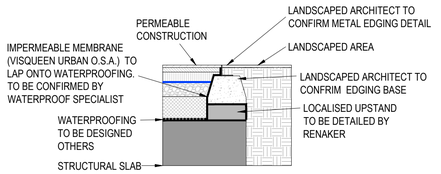
E1: SECTION THROUGH PERMEABLE TO IMPERMEABLE ZONES ON SLAB



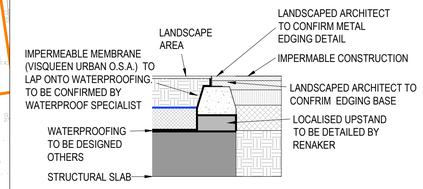
E2: SECTION THROUGH LANDSCAPED TO IMPERMEABLE ZONES ON SLAB



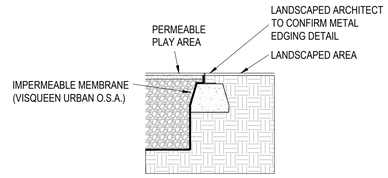
E3: SECTION THROUGH LANDSCAPED TO PERMEABLE ZONES ON SLAB



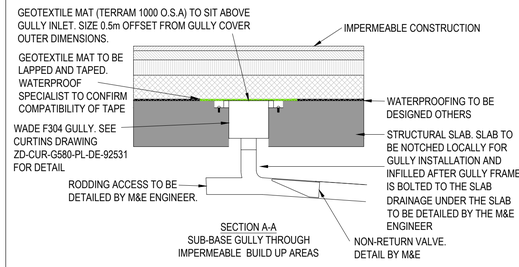
E4: SECTION THROUGH LANDSCAPED TO PERMEABLE ZONES ON SLAB EDGE



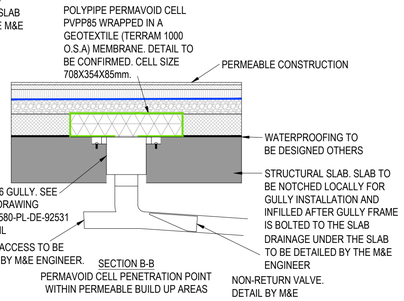
E6: SECTION THROUGH LANDSCAPED TO LANDSCAPE ON SLAB EDGE



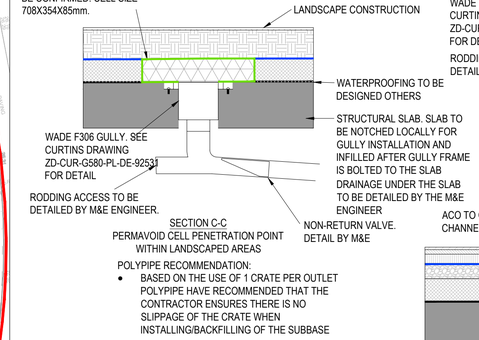
E7: SECTION THROUGH PERMEABLE PAVING TO LANDSCAPE OFF SLAB



SECTION A-A
SUB-BASE GULLY THROUGH IMPERMEABLE BUILD UP AREAS



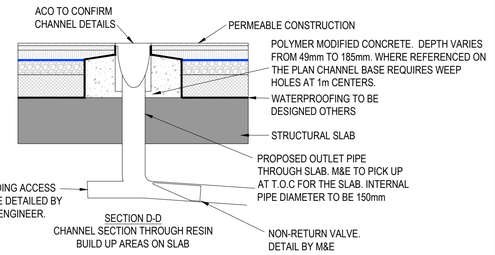
SECTION B-B
PERMAVOID CELL PENETRATION POINT WITHIN PERMEABLE BUILD UP AREAS



SECTION C-C
PERMAVOID CELL PENETRATION POINT WITHIN LANDSCAPED AREAS

POLYPIPE RECOMMENDATION:

- BASED ON THE USE OF 1 CRATE PER OUTLET POLYPIPE HAVE RECOMMENDED THAT THE CONTRACTOR ENSURES THERE IS NO SLIPPAGE OF THE CRATE WHEN INSTALLING/BACKFILLING OF THE SUBBASE



SECTION D-D
CHANNEL SECTION THROUGH RESIN BUILD UP AREAS ON SLAB

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING ZD-CUR-G580-PL-XX -92510.
5. FURTHER CO-ORDINATION REQUIRED BETWEEN EXTERNAL SERVICES AND THE PROPOSED DRAINAGE.

KEY:

- SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS
- PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)
- S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-G580-PL-XX-90000-P01
- IMPERMEABLE PAVING TO PERMEABLE PAVING EDGING. BOTH SURFACES ON STRUCTURAL SLAB. SEE DETAIL E1.
- IMPERMEABLE PAVING TO LANDSCAPING EDGING. BOTH SURFACES ON STRUCTURAL SLAB. SEE DETAIL E2.
- PERMEABLE PAVING TO LANDSCAPING EDGING. BOTH SURFACES ON STRUCTURAL SLAB. SEE DETAIL E3.
- PERMEABLE PAVING TO LANDSCAPE PAVING EDGING. ONE SURFACE ON STRUCTURAL SLAB. SEE DETAIL E4.
- IMPERMEABLE TO PERMEABLE PAVING EDGING. ONE SURFACE ON STRUCTURAL SLAB. SEE DETAIL E6.
- LANDSCAPED TO PERMEABLE PAVING EDGING. BOTH SURFACE OFF STRUCTURAL SLAB. SEE DETAIL E7.
- PERIMETER UPSTANDS TAKEN FROM SHP

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P05	STAGE 4 UPDATE - PLAY AREA UPDATED	27.02.25	CS	CS
P04	UPDATED TO INCLUDE LOCALISED RENAKER UPSTANDS	12.09.23	CS	CG
P03	STAGE 4 UPDATE	30.06.23	CS	CG
P02	STAGE 4 UPDATE	28.04.23	CS	CG
P01	STAGE 4 ISSUE	20.01.23	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: PROPOSED DRAINAGE SECTIONS SHEET 1

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	17.01.23	CS	CG	CG
Scale: 1:250				

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G580	- PL	- GRD	- 92535 -	C01	

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GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.

2. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWER LATEST EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.

3. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH CURTINS DRAINAGE SPECIFICATION, "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.

4. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.

5. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND CCTV SURVEY INFORMATION AVAILABLE AT THE TIME OF THE DESIGN.

6. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.

7. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.

8. COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/ LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.

9. ALL INTERNAL DRAINAGE CONNECTIONS ARE PROVIDED TO THE PENETRATION POSITIONS SHOWN ON ARCHITECT AND M&E DRAWINGS. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON M&ES GROUND FLOOR SETTING-OUT PLANS AND THE CAPPING BEAM PENETRATIONS POINTS DETAILED ON THE M&E DRAWINGS.

10. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.

11. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.

12. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.

13. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS. INTERNAL NON-RETURN VALVES ARE REQUIRED ON THE OUTLET CONNECTIONS FROM THE EXTERNAL SLAB PENETRATIONS AND SHOULD BE DETAILED BY THE M&E ENGINEER.

14. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.

15. ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.

16. INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.

17. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.

18. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
- 100mm to 300mm DIA TO BE VITRIFIED CLAY.
- 375mm & ABOVE CONCRETE

19. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER AND/OR ICOSA.

20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.

21. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.

22. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.

23. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.

24. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.

25. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.

26. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.

27. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.

28. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.

29. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.

30. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.

31. ALL MANHOLES TO BE FULLY SEALED TO PREVENT INGRESS FROM FLOODWATER

32. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
- B125 LOAD CLASS IN PEDESTRIAN AREAS
- D400 LOAD CLASS IN VEHICULAR AREAS.

32. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

33. GREASE TRAPS SHOULD BE PROVIDED ABOVE GROUND WITHIN AN ENZYME TREATMENT SYSTEM, BY APPROPRIATE SPECIALIST DESIGNER.

34. ALL INFORMATION SUBJECT TO FINAL DESIGN

35. THE SURFACE WATER IS DESIGN IS BASED ON A GRAVITY DRAINAGE SYSTEM.

36. THE PROPOSED SLAB PENETRATION POINTS ARE INDICATIVE AND WILL NEED TO ENSURE THAT THE POINT IS LOCATED AT THE LOWEST LEVEL OF THE SLAB FOR THE CATCHMENT AREA DRAINING TO EACH PENETRATION POINT - SLAB IS ASSUMED AS FLAT

CONSTRUCTION RECORD - FINAL CONSTRUCTION

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Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P02	STAGE 4 UPDATE	30.06.23	CS	CG
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Status:

FINAL CONSTRUCTION

Project:

TRINITY ISLANDS

Drg Title:

DRAINAGE NOTES

Size:	Date:	Drawn By:	Designed By:	Checked By:
A2	21/06/22	CS	CG	CG
Scale: NTS				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
ZD	CUR	G580	PL	XX	92	510	C01

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Manhole schedule

MH REF	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT (mAOD)	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	CATCHPIT	CATCHPIT DEPTH BELOW PIPE IL(mm)	COVER SIZE (mm)	COVER CLASS	COVER TYPE	RECESSED	BACK DROP / HIGH LEVEL INLET	BACK DROP / HIGH LEVEL INLET IL (m)	RESTRICTED ACCESS	COMMENTS
Surface Water Manholes																
S1	26.53	25.32	0.91	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	Y	Y	HLIL:25.85	Y	RESTRICTED ACCESS 350mm DIA MAX;
S1A	27.37	25.28	1.79	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	N	Y	HLIL:25.85	Y	RESTRICTED ACCESS 350mm DIA MAX;
S2	27.37	25.25	1.82	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	N	Y	HLIL:25.79	Y	RESTRICTED ACCESS 350mm DIA MAX;
S3	27.37	25.19	1.88	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	N	Y	HLIL:26.19	Y	RESTRICTED ACCESS 350mm DIA MAX;
S4	27.37	25.17	1.90	300	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX;
S4A	27.30	25.08	1.92	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	N	Y	HLIL:25.80	Y	RESTRICTED ACCESS 350mm DIA MAX;
S4B	27.30	25.05	1.95	300	600	PPIC	Y	300	600X600	B125	SINGLE SEALED	N	Y	HLIL:26.30	Y	RESTRICTED ACCESS 350mm DIA MAX;
S5	27.40	24.97	2.13	300	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX;
S5A	27.40	24.85	2.18	375	1500	TYPE B	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	N	UNRESTRICTED;
S5B	27.40	24.83	2.20	375	1500	TYPE B	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	N	UNRESTRICTED;
S5C	27.40	23.32	3.71	375	1500	TYPE A2	N	N/A	600X600	B125	SINGLE SEALED	N	Y	BDIL1:26.05 BDIL2:24.76 BDIL3:26.35	N	UNRESTRICTED;
S5D	28.40	27.71	0.54	150	450	PPIC	Y	300	450X450	B125	SINGLE SEALED	N	Y	N/A	N	UNRESTRICTED;
S6	OMITTED															
S7	24.53	23.25	0.91	375	1500	TYPE C	Y	300	1200X675	D400	DOUBLE SEALED	Y	Y	HLIL:23.65	N	UNRESTRICTED;
S8	24.53	23.41	0.83	300	600	PPIC	Y	300	600X600	D400	DOUBLE SEALED	Y	Y	HLIL:23.80	N	UNRESTRICTED;
S8A	24.65	23.25	1.10	300	600	PPIC	Y	300	600X600	D400	DOUBLE SEALED	Y	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX;
S10	25.35	24.55	0.58	225	600	PPIC	N	N/A	600X600	B125	DOUBLE SEALED	N	N	N/A	N	UNRESTRICTED;
S10A	25.25	23.99	1.04	225	600	PPIC	N	N/A	600X600	B125	DOUBLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX;
S11	24.76	23.64	0.90	225	600	PPIC	N	N/A	600X600	D400	DOUBLE SEALED	Y	N	N/A	N	UNRESTRICTED;
S11A	24.60	23.53	0.85	225	600	PPIC	N	N/A	600X600	D400	DOUBLE SEALED	Y	N	N/A	N	UNRESTRICTED;
S12	24.60	23.28	1.02	300	600	PPIC	Y	300	600X600	D400	DOUBLE SEALED	Y	Y	HLIL:23.64	Y	RESTRICTED ACCESS 350mm DIA MAX;
S13	24.60	23.27	1.03	300	600	PPIC	Y	300	600X600	D400	DOUBLE SEALED	Y	Y	HLIL:23.78	Y	RESTRICTED ACCESS 350mm DIA MAX;
S13A	24.60	23.24	1.06	300	600	PPIC	Y	300	600X600	D400	DOUBLE SEALED	Y	Y	HLIL:23.64	Y	RESTRICTED ACCESS 350mm DIA MAX;
S14	24.60	23.06	1.17	375	1500	TYPE C	Y	300	1200X675	D400	DOUBLE SEALED	Y	Y	HLIL:23.64	N	UNRESTRICTED;
S15	24.60	23.05	1.18	375	1500	TYPE C	Y	300	1200X675	D400	DOUBLE SEALED	Y	Y	HLIL:23.64	N	UNRESTRICTED;
S16	24.60	23.00	1.23	375	1500	TYPE C	N	N/A	1200X675	D400	DOUBLE SEALED	Y	N	N/A	N	2 FLAP VALVES ON INLETS. BENCHING TO BE KNOTCHED TO FIT. REFER TO CURTINS DRAWING ZD-CUR-G580-PL-92500 FOR FLAP VALVE LOCATION ARRANGEMENT
S18	24.76	24.26	0.35	150	450	PPIC	Y	300	450X450	D400	DOUBLE SEALED	Y	N	N/A	N	UNRESTRICTED;
S19	24.80	24.23	0.42	150	450	PPIC	Y	300	450X450	B125	DOUBLE SEALED	N	N	N/A	N	UNRESTRICTED;
S20	24.80	24.18	0.47	150	450	PPIC	Y	300	450X450	B125	DOUBLE SEALED	N	N	N/A	N	UNRESTRICTED;
Foul Water Manholes																
F3	26.53	25.15	1.16	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	Y	Y	25.87	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F4	27.20	25.06	1.92	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F5	27.20	24.93	2.05	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F6	27.20	24.75	2.22	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F7	27.30	25.80	1.28	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F8	27.30	25.61	1.46	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F9	27.20	24.68	2.30	225	600	PPIC	N	N/A	600X600	B125	SINGLE SEALED	N	N	N/A	Y	RESTRICTED ACCESS 350mm DIA MAX SUBJECT TO APPROVAL BY ICOSA
F10/UNCHARTERED 2	27.10	23.46	3.42	225	1500	TYPE A2	N	N/A	675X675	B125	SINGLE SEALED	N	Y	BD1. 24.57 BD2. 24.73	N	
UNCHARTERED 1	26.03	23.26	2.55	225	AS EXISTING											

DOUBLE SEALED MANHOLES ARE FULLY SEALED COVERS AND LOCATED WITHIN THE FLOOD ZONE/SURCHARGED LEVEL. SINGLE SEALED COVERS ARE LOCATED ABOVE THE FLOOD ZONE/ SURCHARGED LEVEL

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWING SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE
3. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS NOTED OTHERWISE.
4. DESIGN BASED ON TOPOGRAPHICAL SURVEY INFORMATION, ARCHITECTS PROPOSED BUILDING LAYOUT AND LANDSCAPE ARCHITECTS SITE LAYOUT AVAILABLE AT THE TIME OF THE DESIGN.
5. COVER LEVELS, GULLY POSITIONS, AND BUILDING LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
6. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRINS TO BE SPECIFIED BY OTHERS.
7. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMODATE THE CONNECTIONS AND BENDS.
8. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS MAY REQUIRE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT THE LANDSCAPE ARCHITECT'S PAVING PROPOSAL.
9. THE LANDSCAPE ARCHITECT MAY REQUIRE THE ORIENTATION OF CHAMBER COVERS TO BE CO-ORDINATED WITH THE PAVING PATTERN. THIS WILL BE SUBJECT TO REVIEW WITH THE MANHOLE INTERNAL BENCHING ARRANGEMENT, LANDING AND STEP LOCATION AND IF REQUIRED, SHOULD BE ADVISED TO US AS SOON AS POSSIBLE.
10. ALL MANHOLES TO BE FULLY SEALED TO ENSURE THE SYSTEM IS PROTECTED FROM OVERLAND FLOODING.
11. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION
    - B125 LOAD CLASS IN PEDESTRIAN AREAS.
    - D400 LOAD CLASS IN VEHICULAR AREAS.
12. THE PROPOSED MANHOLE SCHEDULE IS SUBJECT TO CHANGE FOLLOWING AGREEMENT OF ADOPTED EXTENT BY ICOSA. MANHOLE SIZES, COVER TYPES, BACKDROP LEVELS MAY NEED TO SUIT REQUIREMENTS OF ICOSA.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P05	STAGE 4 UPDATE - MH S5D ADDED	27.02.25	CS	CS
P04	STAGE 4 UPDATE	14.03.24	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: MANHOLE SCHEDULE

Size:	Date:	Drawn By:	Designed By:	Checked By:
A2	21/06/22	CS	CG	CG
Scale: NTS				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
ZD	CUR	G580	PL	XX		92520	C01

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RESIDUAL HAZARD REGISTER

HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR HAVE NOT BEEN INDICATED ON THIS DRAWING. SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED, THE CONTRACTOR SHOULD NOTIFY ALL RELEVANT PROJECT TEAM MEMBERS.

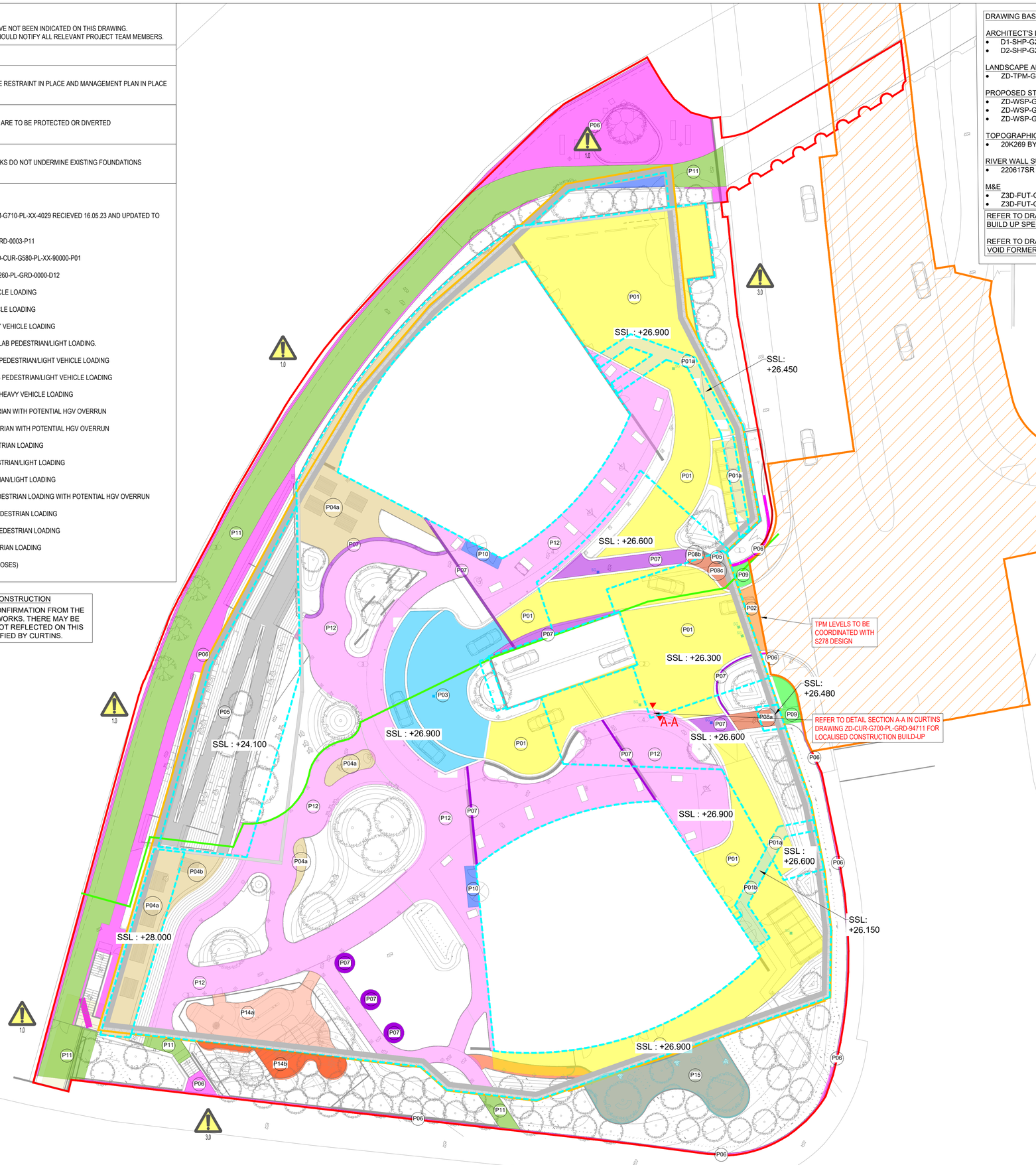
HAZARD REF No.	ITEM (FEATURE, ELEMENT OR ACTIVITY)	RESIDUAL HAZARD
1.0	WORKING CLOSE TO WATERWAYS	CONTRACTOR TO ENSURE EDGE RESTRAINT IN PLACE AND MANAGEMENT PLAN IN PLACE FOR TIMES OF FLOODING.
2.0	SERVICES	EXISTING SERVICES TO REMAIN ARE TO BE PROTECTED OR DIVERTED
3.0	WORKING IN PROXIMITY TO EXISTING STRUCTURES (REGENT ROAD AND TRINITY WAY)	CONTRACTOR TO ENSURE WORKS DO NOT UNDERMINE EXISTING FOUNDATIONS

KEY

- SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECIEVED 16.05.23 AND UPDATED TO SUITBACK OF FOOTWAY AND S278 WORKS
- PHASING LINE TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11
- S278 BOUNDARY TAKEN FROM CURTINS DRAWING ZD-CUR-G580-PL-XX-90000-P01
- STEP IN SLAB TAKEN FROM SHP DRAWING ZD-SHP-G260-PL-GRD-0000-D12
- P01 - TARMAC ON SLAB (IMPERMEABLE) HEAVY VEHICLE LOADING
- P02 - TARMAC OFF SLAB (IMPERMABLE) HEAVY VEHICLE LOADING
- P03 - BLOCK PAVING ON SLAB (IMPERMEABLE) HEAVY VEHICLE LOADING
- P04a/P04b - CUBE BLOCK PAVING (PERMEABLE) ON SLAB PEDESTRIAN/LIGHT LOADING.
- P05 - CUBE BLOCK PAVING (IMPERMEABLE) ON SLAB PEDESTRIAN/LIGHT VEHICLE LOADING
- P06 - CUBE BLOCK PAVING (IMPERMEABLE) OFF SLAB PEDESTRIAN/LIGHT VEHICLE LOADING
- P07 - CUBE BLOCK PAVING (IMPERMEABLE) ON SLAB HEAVY VEHICLE LOADING
- P08 - CONCRETE FLAG (TYPE TBC) ON SLAB PEDESTRIAN WITH POTENTIAL HGV OVERRUN
- P09 - CONCRETE FLAG (TYPE TBC) OFF SLAB PEDESTRIAN WITH POTENTIAL HGV OVERRUN
- P10 - RESIN BOUND (IMPERMEABLE) ON SLAB PEDESTRIAN LOADING
- P11 - RESIN BOUND (IMPERMEABLE) OFF SLAB PEDESTRIAN/LIGHT LOADING
- P12 - RESIN BOUND (PERMEABLE) ON SLAB PEDESTRIAN/LIGHT LOADING
- P13 - SURFACE TYPE TBC (PERMEABLE) ON SLAB PEDESTRIAN LOADING WITH POTENTIAL HGV OVERRUN
- P14a - PLAY SURFACE TBC (PERMEABLE) ON SLAB PEDESTRIAN LOADING
- P14b - PLAY SURFACE TBC (PERMEABLE) OFF SLAB PEDESTRIAN LOADING
- P15 - ASTROTURF 2 (PERMEABLE) OFF SLAB PEDESTRIAN LOADING
- SG - SLAB GULLY (SHOWN FOR COORDINATION PURPOSES)

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.



DRAWING BASED ON:

ARCHITECT'S LAYOUTS
- D1-SHP-G200-PL-GRD-0001 REVISION P18
- D2-SHP-G200-PL-GRD-0001 REVISION D13

LANDSCAPE ARCHITECT'S LAYOUT
- ZD-TPM-G710-PL-XX-4029 101 REVISION P12

PROPOSED STRUCTURAL INFORMATION.
- ZD-WSP-G210-PL-XX-005 REVISION C03
- ZD-WSP-G222-PL-GRD-001 REVISION P05
- ZD-WSP-G210-DE-GRD-003 REVISION P01

TOPOGRAPHICAL SURVEY
- 20K269 BY SURVEY OPERATIONS RECEIVED 24.02.21

RIVER WALL SURVEY
- 220617SR BY SURVEY OPERATIONS RECEIVED 20.06.22

M&E
- Z3D-FUT-G581-PI-B1-001 REVISION P06
- Z3D-FUT-G581-PI-B1-002 REVISION P06

REFER TO DRAWING ZD-CUR-G700-GRD-PL-94710 FOR ALL BUILD UP SPECIFICATIONS

REFER TO DRAWING ZD-CUR-G700-GRD-PL-94720 FOR VOID FORMER EXTENTS

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH CURRENT BRITISH STANDARDS AND BUILDING REGULATIONS.
4. THE LANDSCAPE ARCHITECT'S DRAWING HAS BEEN USED AS A BASE FOR THIS PLAN. PLEASE REFER TO THE LATEST LANDSCAPING LAYOUT.
5. REFER TO LANDSCAPE ARCHITECTS SPECIFICATION FOR SURFACE FINISHES.
6. KERBING REQUIREMENTS/DETAIL TO BE CONFIRMED BY LANDSCAPE ARCHITECT.
7. ALL SUB-BASES AND CAPPING LAYERS TO BE GRADED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS (SFHW).
8. ALL PAVEMENT CONSTRUCTIONS (OFF SLAB) ARE BASED ON AN ASSUMED CBR VALUE OF 5%. TO BE CONFIRMED BY INSITU TESTING AT FORMATION.
9. IT IS RECOMMENDED THAT CBR TESTS ARE CARRIED OUT TO CONFIRM AND SUB-BASE ADJUSTED IN ACCORDANCE WITH THE BS.
10. CBR TEST PROCEDURE IS DETAILED WITHIN DMRB IAN73/06 AND BS 1377-4.
11. MEASURED CBR VALUE TO BE AT FORMATION LEVEL AND TO BE A 'SOAKED' CONDITION.
12. ANY VARIATIONS IN GROUND CONDITIONS SHOULD BE NOTIFIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
13. THE CONSTRUCTION DEPTHS GIVEN ARE THE MINIMUM REQUIRED (COMPACTED).
14. THE CONSTRUCTION DEPTHS GIVEN ASSUME FORMATION IS NON-FROST SUSCEPTIBLE. WHERE FORMATION IS FROST SUSCEPTIBLE PROVIDE CAPPING MATERIAL TO GIVE A MINIMUM 450mm OVERALL CONSTRUCTION THICKNESS.
15. THE CONSTRUCTIONS GIVEN ARE FOR PRIVATE AREAS ONLY AND NOT FOR ADOPTABLE AREAS. REFER TO SECTION 278 DRAWINGS FOR WORKS WITHIN THE ADOPTED HIGHWAY.
16. EXTENT OF HIGHWAY BOUNDARY TO BE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.
17. IN AREAS WHERE LEVELS ARE TO BE RAISED, ACCEPTABLE FILL MATERIAL IS TO BE USED TO THE UNDERSIDE OF THE PROPOSED CONSTRUCTION MAKE UP.
18. NO REGULATING OR FILL MATERIAL HAS BEEN INCLUDED IN CONSTRUCTION BUILD UP. CONTRACTOR TO INCLUDE FOR REGULATING/FILL MATERIAL IN THEIR RATES.
19. IN AREAS WHERE LEVELS ARE TO BE LOWERED, EXISTING CONSTRUCTION IS TO BE REMOVED (FULL DEPTH).
20. CONSTRUCTION OF CONCRETE SURFACES SUBJECT TO CASTING IN APPROPRIATE BAY SIZES / LENGTHS.
21. CONTRACTOR TO ALLOW FOR CONTRACTION JOINTING WITHIN CONCRETE AREAS.
22. LAYING COURSE TO BE IN ACCORDANCE WITH BS7533 REQUIREMENTS.
23. CBM1 TO BE TO BS7533 REQUIREMENTS.
24. TYPE 1 SUB-BASE IN ACCORDANCE WITH SFHW.
25. CAPPING MATERIAL TO BE 6F1, 6F2 OR 6F5 MATERIAL IN ACCORDANCE WITH SFHW 600 SERIES.
26. FIRE TENDER ROUTE TO BE CONFIRMED.
27. PREVENTION OF MAINTENANCE/VEHICLES FROM ACCESSING PEDESTRIAN SPECIFIED AREAS TO BE CONFIRMED.
28. BUILD UP SPECIFICATIONS ARE SUBJECT TO FIXED FINAL ACCESS AND MAINTENANCE STRATEGY.
29. CURRENT CONSTRUCTIONS ARE BASED ON A MINIMUM 25mm THICK VOID FORMER. VOID FORMER STEP ARRANGEMENT TBC BY RENAKER

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P07	STAGE 4 UPDATE- KEY UPDATED TO SUIT LAYOUT	01.09.25	CS	CS
P06	STAGE 4 UPDATE	19.08.25	PB	PB
P05	STAGE 4 UPDATE	27.02.25	CS	CS
P04	STAGE 4 UPDATE	01.03.24	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: EXTERNAL WORKS GENERAL ARRANGEMENT SITE D

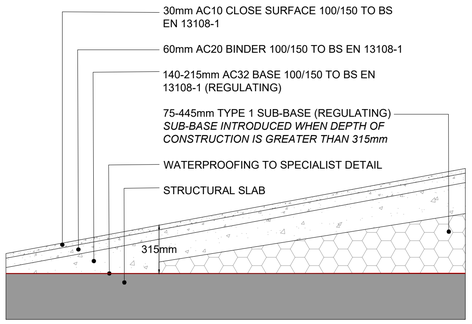
Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	05/04/23	CS	CG	CG

Scale: 1:250

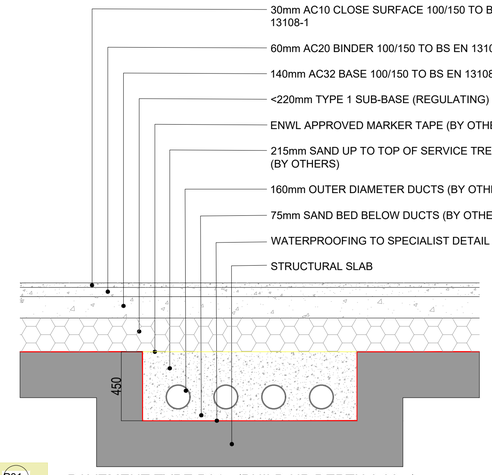
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G700	- PL	- GRD	- 94700	- C01	

THIS DRAWING SHOULD BE PRINTED IN COLOUR

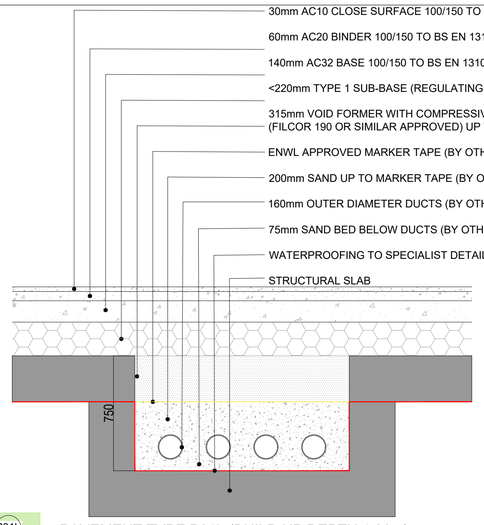
\\ms-fs-1\Projects\070001 - 070500\070557 - Trinity Islands\04-Production\4A-Models-Drawings\C-CAD\94700_C01_TRINITY ISLANDS_EXTERNAL WORKS GENERAL ARRANGEMENT SITE D.dwg



P01 PAVEMENT TYPE P01 (BUILD UP DEPTH 0.23-0.75m)
TARMAC ON SLAB
IMPERMEABLE
(HEAVY VEHICLE LOADING)



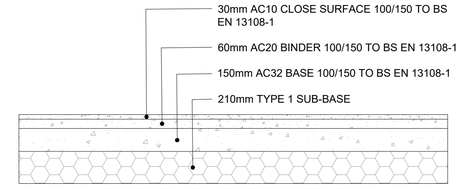
P01a PAVEMENT TYPE P01a (BUILD UP DEPTH 0.90m)
TARMAC OVER SERVICE TRENCH
IMPERMEABLE
(HEAVY VEHICLE LOADING)



P01b PAVEMENT TYPE P01b (BUILD UP DEPTH 1.20m)
TARMAC OVER SERVICE TRENCH
IMPERMEABLE
(HEAVY VEHICLE LOADING)

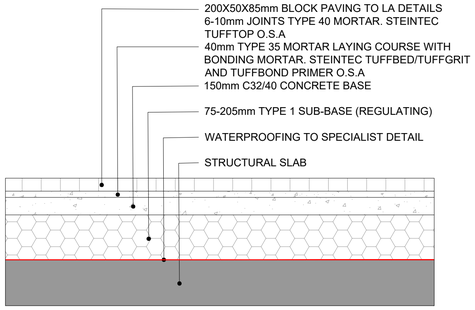
CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

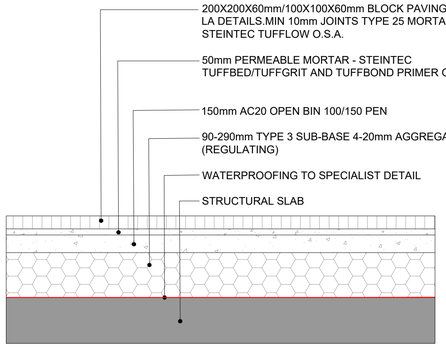


BASED ON 5% CBR AT FORMATION LEVEL (TBC)

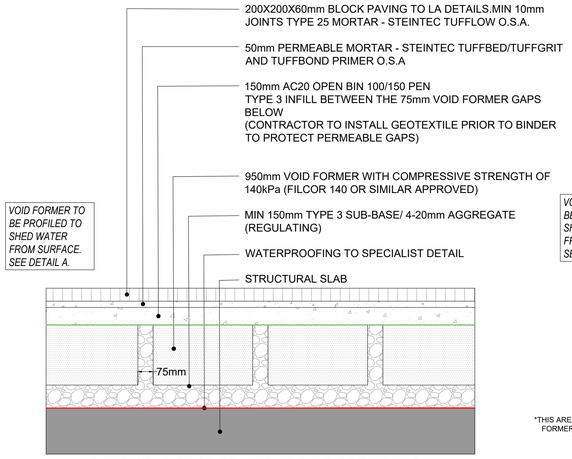
P02 PAVEMENT TYPE P02
TARMAC OFF SLAB
IMPERMEABLE
(HEAVY VEHICLE LOADING)



P03 PAVEMENT TYPE P03 (BUILD UP DEPTH 0.36-0.48m)
BLOCK PAVING ON SLAB
IMPERMEABLE
(HEAVY VEHICLE LOADING)

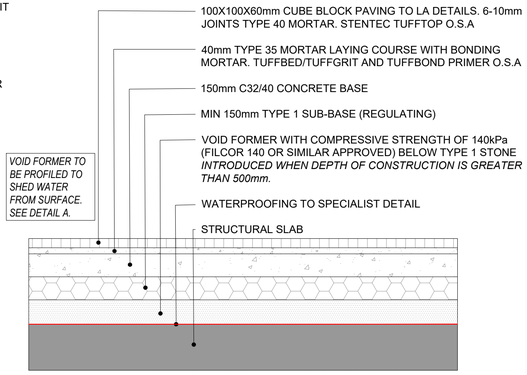


P04a PAVEMENT TYPE P04a (BUILD UP DEPTH 0.3-0.55m)
CUBE BLOCK PAVING ON SLAB
PERMEABLE
(PEDESTRIAN/LIGHT LOADING)



VOID FORMER TO BE PROFILED TO SHED WATER FROM SURFACE. SEE DETAIL A.

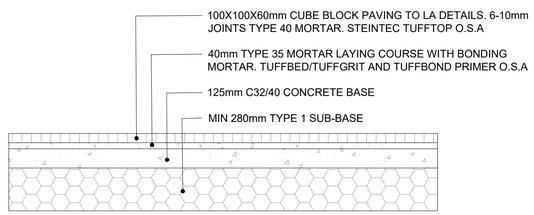
P04b PAVEMENT TYPE P04b (BUILD UP DEPTH 1.40m)
CUBE BLOCK PAVING ON SLAB
PERMEABLE
(PEDESTRIAN/LIGHT LOADING)



VOID FORMER TO BE PROFILED TO SHED WATER FROM SURFACE. SEE DETAIL A.

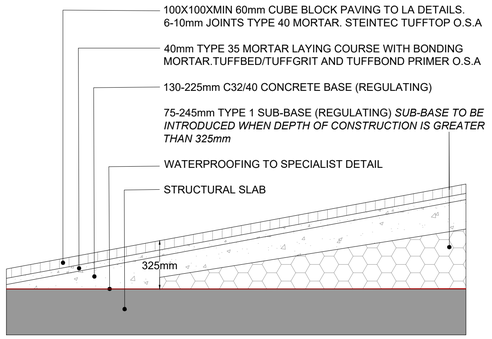
*THIS AREA IS THE STRAMP AREA AND THEREFORE SITS OVER A SSL OF 24.100 WITH A CONSTRUCTION DEPTH OF 0.5-3.2m THEREFORE A VOID FORMER MAY STEP IN HEIGHT. WHERE THE MIN DEPTH IS 0.5M, SUBBASE LAYER WOULD BE APPROXIMATELY 275MM, HOWEVER DEPTH OF SUBBASE CAN BE REDUCED TO 150MM WHERE IT IS PREFERRED TO USE A VOID FORMER.VOID FORMER TO WSP DETAILS.

P05 PAVEMENT TYPE P05 (BUILD UP DEPTH 0.5-3.2m)
CUBE BLOCK PAVING ON SLAB
IMPERMEABLE
(PEDESTRIAN/LIGHT VEHICLE LOADING)

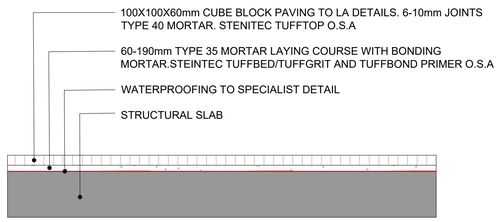


BASED ON 5% CBR AT FORMATION LEVEL (TBC)

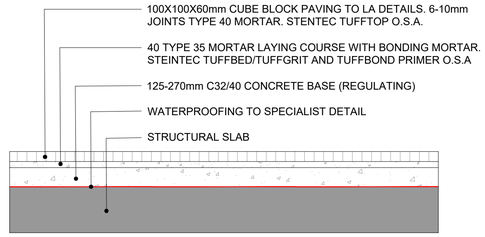
P06 PAVEMENT TYPE P06
CUBE BLOCK PAVING OFF SLAB
IMPERMEABLE
(PEDESTRIAN/LIGHT VEHICLE LOADING)



P07 PAVEMENT TYPE P07 (BUILD UP DEPTH 0.23-0.675m)
CUBE BLOCK PAVING ON SLAB
IMPERMEABLE
(HEAVY VEHICLE LOADING)



P08a PAVEMENT TYPE P08a (BUILD UP DEPTH 0.12-0.25m)
CONCRETE FLAG TYPE TBC PAVING ON SLAB
IMPERMEABLE
(PEDESTRIAN WITH POTENTIAL HGV OVERRUN LOADING)



P08b PAVEMENT TYPE P08b (BUILD UP DEPTH 0.22-0.37m)
CONCRETE FLAG TYPE TBC PAVING ON SLAB
IMPERMEABLE
(PEDESTRIAN WITH POTENTIAL HGV OVERRUN LOADING)

REFER TO DRAWING ZD-CUR-G700-GRD-PL-94700 FOR ALL BUILD UP SPECIFICATION LOCATIONS

THIS DRAWING SHOULD BE PRINTED IN COLOUR

GENERAL NOTES:

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5. REFER TO LANDSCAPE ARCHITECTS SPECIFICATION FOR SURFACE FINISHES.
6. KERBING REQUIREMENTS/DETAIL TO BE CONFIRMED BY LANDSCAPE ARCHITECT.
7. ALL SUB-BASES AND CAPPING LAYERS TO BE GRADED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS (SFHW).
8. ALL PAVEMENT CONSTRUCTIONS (OFF SLAB) ARE BASED ON AN ASSUMED CBR VALUE OF 5%. TO BE CONFIRMED BY INSITU TESTING AT FORMATION.
9. IT IS RECOMMENDED THAT CBR TESTS ARE CARRIED OUT TO CONFIRM AND SUB-BASE ADJUSTED IN ACCORDANCE WITH THE BS.
10. CBR TEST PROCEDURE IS DETAILED WITHIN DMRB IAN73/06 AND BS 1377-4.
11. MEASURED CBR VALUE TO BE AT FORMATION LEVEL AND TO BE A 'SOAKED' CONDITION.
12. ANY VARIATIONS IN GROUND CONDITIONS SHOULD BE NOTIFIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
13. THE CONSTRUCTION DEPTHS GIVEN ARE THE MINIMUM REQUIRED (COMPACTED).
14. THE CONSTRUCTION DEPTHS GIVEN ASSUME FORMATION IS NON-FROST SUSCEPTIBLE. WHERE FORMATION IS FROST SUSCEPTIBLE PROVIDE CAPPING MATERIAL TO GIVE A MINIMUM 450mm OVERALL CONSTRUCTION THICKNESS.
15. THE CONSTRUCTIONS GIVEN ARE FOR PRIVATE AREAS ONLY AND NOT FOR ADOPTABLE AREAS. REFER TO SECTION 278 DRAWINGS FOR WORKS WITHIN THE ADOPTED HIGHWAY.
16. EXTENT OF HIGHWAY BOUNDARY TO BE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.
17. IN AREAS WHERE LEVELS ARE TO BE RAISED, ACCEPTABLE FILL MATERIAL IS TO BE USED TO THE UNDERSIDE OF THE PROPOSED CONSTRUCTION MAKE UP.
18. NO REGULATING OR FILL MATERIAL HAS BEEN INCLUDED IN CONSTRUCTION BUILD UP. CONTRACTOR TO INCLUDE FOR REGULATING/FILL MATERIAL IN THEIR RATES.
19. IN AREAS WHERE LEVELS ARE TO BE LOWERED, EXISTING CONSTRUCTION IS TO BE REMOVED (FULL DEPTH).
20. CONSTRUCTION OF CONCRETE SURFACES SUBJECT TO CASTING IN APPROPRIATE BAY SIZES / LENGTHS.
21. CONTRACTOR TO ALLOW FOR CONTRACTION JOINTING WITHIN CONCRETE AREAS.
22. LAYING COURSE TO BE IN ACCORDANCE WITH BS7533 REQUIREMENTS.
23. CBM1 TO BE TO BS7533 REQUIREMENTS.
24. TYPE 1 SUB-BASE IN ACCORDANCE WITH SFHW.
25. CAPPING MATERIAL TO BE 6F1, 6F2 OR 6F5 MATERIAL IN ACCORDANCE WITH SFHW 600 SERIES.
26. FIRE TENDER ROUTE TO BE CONFIRMED.
27. PREVENTION OF MAINTENANCE/VEHICLES FROM ACCESSING PEDESTRIAN SPECIFIED AREAS TO BE CONFIRMED.
28. BUILD UP SPECIFICATIONS ARE SUBJECT TO FIXED FINAL ACCESS AND MAINTENANCE STRATEGY.
29. CURRENT CONSTRUCTIONS ARE BASED ON A MINIMUM 25mm THICK VOID FORMER. VOID FORMER STEP ARRANGEMENT TBC BY RENAKER

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P05	STAGE 4 UPDATE	27.02.25	CS	CS

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Status: FINAL CONSTRUCTION

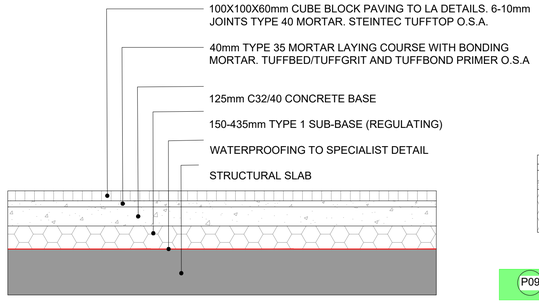
Project: TRINITY ISLANDS

Drg Title: EXTERNAL WORKS BUILD-UP DETAILS SITE D (SHEET 1/2)

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	05/04/23	CS	CG	CG
Scale: 1:250				

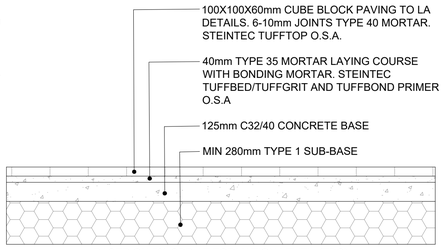
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G700	- PL	- GRD	- 94710	- C01	

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PAVEMENT TYPE P08c (BUILD UP DEPTH 0.70m)
CONCRETE FLAG TYPE TBC PAVING ON SLAB
IMPERMEABLE
(PEDESTRIAN WITH POTENTIAL HGV OVERRUN LOADING)

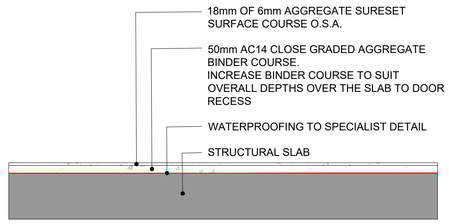
P08c



BASED ON 5% CBR AT FORMATION LEVEL (TBC)

PAVEMENT TYPE P09
CONCRETE FLAG PAVING TYPE TBC OFF SLAB
IMPERMEABLE
(PEDESTRIAN WITH POTENTIAL HGV OVERRUN LOADING

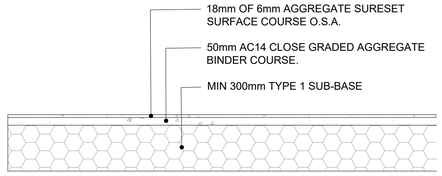
P09



MINIMUM 1:60 FALLS TOWARDS ADJACENT
PERMEABLE CONSTRUCTION IS ADVISED.

PAVEMENT TYPE P10
RESIN BOUND PAVING ON SLAB
IMPERMEABLE
(PEDESTRIAN LOADING)

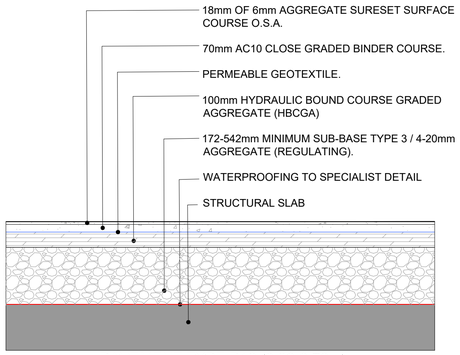
P10



BASED ON 5% CBR AT FORMATION LEVEL (TBC)
MINIMUM 1:60 FALLS TOWARDS ADJACENT
PERMEABLE CONSTRUCTION IS ADVISED.

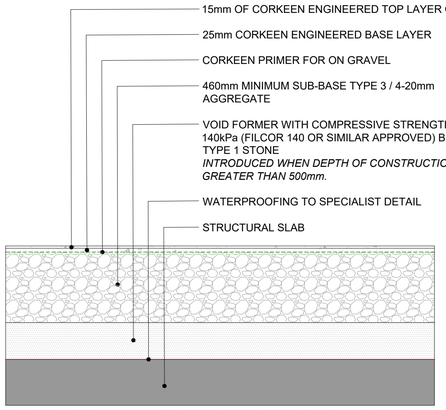
PAVEMENT TYPE P11
RESIN BOUND PAVING OFF SLAB
IMPERMEABLE
(PEDESTRIAN/LIGHT LOADING)

P11



PAVEMENT TYPE P12 (0.36-0.73m)
RESIN BOUND PAVING ON SLAB
PERMEABLE
(PEDESTRIAN/LIGHT LOADING)

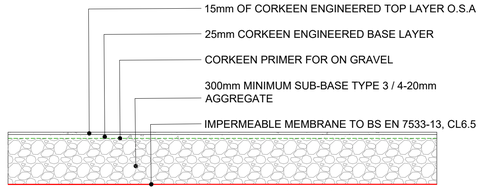
P12



*THIS AREA IS THE PLAY AREA AND THEREFORE SITS OVER A SSL OF 26.900 WITH A CONSTRUCTION DEPTH OF 0.5-1.5m THEREFORE A VOID FORMER MAY STEP IN HEIGHT. WHERE THE MIN DEPTH IS 0.5M, SUB-BASE LAYER WOULD BE APPROXIMATELY 460MM, HOWEVER DEPTH OF SUB-BASE CAN BE REDUCED TO 300MM WHERE IT IS PREFERRED TO USE A VOID FORMER.VOID FORMER TO WSP DETAILS.

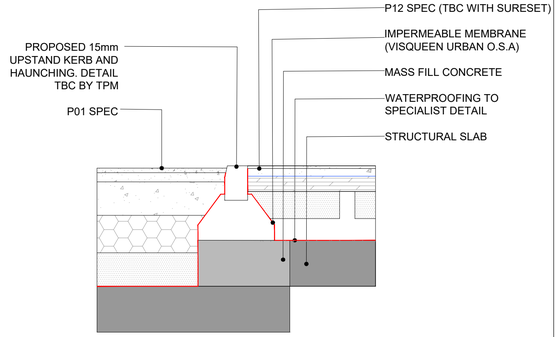
PAVEMENT TYPE P14a (0.50-1.50m)
PLAY SURFACE ON SLAB
PERMEABLE
(PEDESTRIAN LOADING)
TO MANUFACTURES DETAILS

P14a

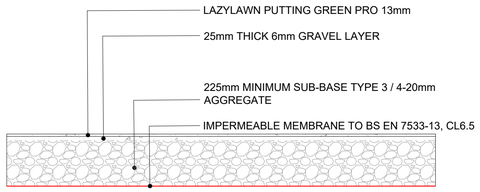


PAVEMENT TYPE P14b (0.34m)
PLAY SURFACE OFF SLAB
PERMEABLE
(PEDESTRIAN LOADING)
TO MANUFACTURES DETAILS

P14b



SECTION A-A
PAVEMENT TYPE P01/P13
VOID FORMER INFILL UNDER P13 DUE TO
STEP IN SLAB



PAVEMENT TYPE P15
ASTROTURF 2
PERMEABLE OFF SLAB
(PEDESTRIAN LOADING)
TO MANUFACTURES DETAILS

P15

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

REFER TO DRAWING
ZD-CUR-G700-GRD-PL-94700 FOR ALL
BUILD UP SPECIFICATION LOCATIONS

THIS DRAWING SHOULD
BE PRINTED IN COLOUR

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH CURRENT BRITISH STANDARDS AND BUILDING REGULATIONS.
4. THE LANDSCAPE ARCHITECT'S DRAWING HAS BEEN USED AS A BASE FOR THIS PLAN. PLEASE REFER TO THE LATEST LANDSCAPING LAYOUT.
5. REFER TO LANDSCAPE ARCHITECTS SPECIFICATION FOR SURFACE FINISHES.
6. KERBING REQUIREMENTS/DETAIL TO BE CONFIRMED BY LANDSCAPE ARCHITECT.
7. ALL SUB-BASES AND CAPPING LAYERS TO BE GRADED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS (SFHW).
8. ALL PAVEMENT CONSTRUCTIONS (OFF SLAB) ARE BASED ON AN ASSUMED CBR VALUE OF 5%. TO BE CONFIRMED BY INSITU TESTING AT FORMATION.
9. IT IS RECOMMENDED THAT CBR TESTS ARE CARRIED OUT TO CONFIRM AND SUB-BASE ADJUSTED IN ACCORDANCE WITH THE BS.
10. CBR TEST PROCEDURE IS DETAILED WITHIN DMRB IAN73/06 AND BS 1377-4.
11. MEASURED CBR VALUE TO BE AT FORMATION LEVEL AND TO BE A 'SOAKED' CONDITION.
12. ANY VARIATIONS IN GROUND CONDITIONS SHOULD BE NOTIFIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
13. THE CONSTRUCTION DEPTHS GIVEN ARE THE MINIMUM REQUIRED (COMPACTED).
14. THE CONSTRUCTION DEPTHS GIVEN ASSUME FORMATION IS NON-FROST SUSCEPTIBLE. WHERE FORMATION IS FROST SUSCEPTIBLE PROVIDE CAPPING MATERIAL TO GIVE A MINIMUM 450mm OVERALL CONSTRUCTION THICKNESS.
15. THE CONSTRUCTIONS GIVEN ARE FOR PRIVATE AREAS ONLY AND NOT FOR ADOPTABLE AREAS. REFER TO SECTION 278 DRAWINGS FOR WORKS WITHIN THE ADOPTED HIGHWAY.
16. EXTENT OF HIGHWAY BOUNDARY TO BE CONFIRMED PRIOR TO COMMENCEMENT OF WORKS.
17. IN AREAS WHERE LEVELS ARE TO BE RAISED, ACCEPTABLE FILL MATERIAL IS TO BE USED TO THE UNDERSIDE OF THE PROPOSED CONSTRUCTION MAKE UP.
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Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P04	STAGE 4 UPDATE	27.02.25	CS	CS
P03	STAGE 4 UPDATE	01.03.24	CS	CG
P02	STAGE 4 UPDATE - VOID FORMER REVIEWED	30.10.23	CS	CG
P01	STAGE 4 ISSUE	15.08.23	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: EXTERNAL WORKS
BUILD-UP DETAILS
SITE D (SHEET 2/2)

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	05/04/23	CS	CG	CG

Scale: 1:250

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

ZD - CUR - G700 - PL - GRD - 94711 - C01

\\ms-fs-1\Projects\078001 - 079000\078567 - Trinity Islands\04-Production\44-Models-Drawings\C\CAD\94\



GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH CURRENT BRITISH STANDARDS AND BUILDING REGULATIONS.
4. REFER TO DRAWING ZD-CUR-G700-PL-GRD-94700 FOR EXTERNAL WORKS GA AND ZD-CUR-G700-PL-GRD-94710/94711 FOR EXTERNAL WORKS DETAILS.

BASED ON:

- ARCHITECTS SITE WIDE STRUCTURAL SETTING OUT DRAWING ZD-SHP-G260-PL-GRD-0001-D12
- LANDSCAPE ARCHITECTS HARDWORKS DRAWING ZD-TPM-G710-PL-XX-4029 102_P1

EXTENT OF VOID FORMER BASED ON CURRENT ARCHITECT STRUCTURAL LEVELS AND CURRENT LANDSCAPE ARCHITECT GROUND LEVELS AND THEREFORE THE EXTENT OF VOID FORMER MAYBE SUBJECT TO CHANGE

KEY:

SITE BOUNDARY TAKEN FROM TPM DRAWING ZD-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS

PHASING LINE (TAKEN FROM 10364-ZD-SHP-Z460-PL-GRD-0003-P11)

BUILD-UP OVER SLAB REQUIRING VOID FORMER SEE CURTINS DRAWING ZD-CUR-G700-PL-GRD-94700 DETAIL P05

BUILD-UP OVER SLAB REQUIRING VOID FORMER SEE CURTINS DRAWING ZD-CUR-G700-PL-GRD-94700 DETAIL P04B

BUILD-UP OVER SLAB REQUIRING VOID FORMER SEE CURTINS DRAWING ZD-CUR-G700-PL-GRD-94700 DETAIL P01B

BUILD-UP OVER SLAB NOT REQUIRING VOID
GENERALLY VOID FORMER NOT REQUIRED WHERE BUILD UP IS LESS THAN 0.5M. LOCAL AREAS THAT EXCEED 0.5M HAVE BEEN AGREED WITH WSP AND NO VOID FORMER REQUIRED.

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

Rev:	Description:	Date:	By:	Chkd:
C01	FINAL CONSTRUCTION	05.09.25	KS	CS
P04	STAGE 4 UPDATE - VOID FORMER REQUIREMENTS DIFFERENTIATED AS PER BUILD UP P04B AND P05	26.01.24	CS	CG
P03	STAGE 4 UPDATE - VOID FORMER TRENCH REMOVED	31.10.23	CS	CG
P02	STAGE 4 UPDATE - VOID FORMER REVIEWED	30.10.23	CS	CG
P01	STAGE 4 ISSUE	15.08.23	CS	CG

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Status: FINAL CONSTRUCTION

Project: TRINITY ISLANDS

Drg Title: VOID FORMER REQUIREMENTS SITE D

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	15/08/23	CS	CG	CG
Scale: 1:250				

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
ZD	- CUR -	G700	- PL	- GRD	- 94720	- C01	

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Appendix B

United Utilities S106 Approval Part 1 – Reference 04607038

United Utilities S106 Approval Part 2 – Reference 04885108

Peel Approval – Reference HXD/100721/265

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S106 Part 1 'Application to connect to a public sewer' Approval Notice

United Utilities helping life flow smoothly

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United Utilities Reference Number:	**04607038**
Applicant details	
Applicant name	**Claire Purkiss**
Applicant address *(including postcode)*	**Icosa Water Ltd** **Focal Point** **27-35 Fleet Street** **Swindon** **SN1 1RQ**
Applicant email	[redacted]
Site details: The site / property which is proposed for connection to the public sewer	
Site address *(including postcode)*	**Trinity Island** **Water Street** **Manchester** **M3 4JH**

APPROVED

Your application for connection to the public sewer has been approved, to be made via a new connection:

To a private drain	☐	You may appoint your contractor and advise your appointed building control body (who should inspect the work). United Utilities should be advised when this work is complete.
Direct to the public sewer	☒	**Further action required** You may now appoint an appropriately qualified contractor. Your appointed contractor is responsible for obtaining authorisation to work on a public sewer. (The S106 Part 2 application form **'Request for permission to work on a public sewer'** is available on our website; unitedutilities.com).

Mode of connection approved	**Connection into existing manhole**					
Sewer connection type	Foul	☒	Surface water	☐	Combined	☐

This approval is valid for 12 months from the date below.
This approval does not grant access to third party land, permission should be sought if required between applicant and land owner
If the new connection renders access unsafe or is otherwise detrimental to the manhole or sewer, a new/upgraded manhole will be requested.

Approval granted for a 300mm foul only connection to the existing 520x800mm combined sewer that crosses Water Street via an existing UUMH indicated on the drainage plan below as UUMH7608

Please Note – The manhole you have indicated on your drainage plan is not mapped on our sewer records – please ensure you have carried our investigations to ensure the manhole is present before any drainage is laid

surface water to watercourse

Any connection to an existing manhole should be made soffit to soffit, with a swept bend in the direction of flow. The connection must not be made in the landing area. The exact condition, location and depth of the existing manhole and surrounding services should be established as early as possible to avoid site delays. If the existing manhole is in poor condition but otherwise the connection would be acceptable, the applicant should be aware they may have to rebuild/renew the manhole if it deteriorates as a result of your contractor working on or near it.

For low-lying sites, (where the ground level of the site or the level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist it could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme.

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Please note, if you are proposing to connect to an existing, unchartered drain or sewer then it is the developer's responsibility to confirm that it communicates with the Public Sewer.
Connections may be made to private lateral drains or to existing neighbouring drain. A part 1 approval does not give permission to access third party land. The applicant must seek permission from the relevant land owner.



Developer Services Inspector	**Lynne Berry**
[redacted]	
Date	**27/09/2023**

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S10 Part 2 'Request for permission to ork on a public sewer (MEDIUM / HIGH RISK)' Approval Notice

United Utilities helping life flow smoothly

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United Utilities Reference Number:			***04885108***
Contractor details			
Contractor/company name	Renaker		
Contractor email address	[redacted]		
Works Supervisor	Mark Callaghan		
Principal Contractor details (if applicable):			
Company name			
Name of contact for project			
Email address			
Date of proposed works	21/11/2023	Type of connection approved	New Manhole
Site details: The site / property which is proposed for connection to the public sewer			
	Trinity Island Trinity Way Regent Road Manchester M3 4JH		

APPROVED

Your application for permission to work on the public sewer has been approved.
THIS PERMIT SHOULD BE AVAILABLE ON SITE FOR INSPECTION

This notice constitutes your permit make a connection to the public sewer network as detailed on your application, **'Request for permission to work on a public sewer'**. You are now authorised to make the connection to the public sewer based on the agreed method and on the date given.

Please provide 5 days' notice to the Development Support Technician named below to arrange an inspection of the works.

The excavation should not be backfilled until the United Utilities appointed person has inspected the works.
United Utilities reserve the right to request a connection to the public sewer be laid open for inspection.
United Utilities will also be entitled to recover all costs associated for any excavation, remedial works and repeat visits if these requirements are not met.

You must log on and off the sewer network at the beginning and end of each shift when working on the public sewer by calling

07826 539459

and quoting the United Utilities reference number at the top of this decision notice.

Any gas alarms, residual risks or sewer incidents should also be reported on this number.

Comments

Approval granted for a *225*mm *foul* connection via *the construction of a new manhole* on the *combined* sewer located within *site boundary as per drawings submitted.*

*The new manhole must be constructed in line with United Utilities standard details.

*The exact condition, location and depth of the existing manhole and surrounding services should be established as early as possible to avoid site delays. If the existing manhole is in poor condition but otherwise the connection would be acceptable, the applicant should be aware they may have to rebuild/renew the manhole if it deteriorates as a result of your contractor working on or near it.

Developer Services Inspector	Marcus Jones

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Co[redacted] number	[redacted]
Date	21/11/2023

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LAND LAW LLP

Dated 18 February 2025

THE MANCHESTER SHIP CANAL COMPANY LIMITED **(1)**

and

TRINITY DEVELOPMENTS (MANCHESTER) LIMITED **(2)**

LICENCE

relating to Surface Water Drainage into the River Irwell for Tower D1 and Tower D2 Phase One, Trinity Islands, Water Street, Manchester

Ref:	HXD/100721/265
Document Revision Date:	12 November 2024

14 Market Street Altrincham Cheshire WA14 1QB
Tel: (0161) 928 8383 Fax: (0161) 928 8484
land.law

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THIS LICENCE is made on 18 February 2025

BETWEEN:

(1) **THE MANCHESTER SHIP CANAL COMPANY LIMITED** (Company Number 07438096) whose registered office is at Maritime Centre, Port of Liverpool, Liverpool, Merseyside, L21 1LA ("**the Licensor**");

(2) **TRINITY DEVELOPMENTS (MANCHESTER) LIMITED** (Company Number 11381019) whose registered office is at 1st Floor, NQ Building, 47 Bengal Street, Manchester, M4 6BB ("**the Licensee**"); and

NOW THIS LICENCE WITNESSES as follows:

1. DEFINITIONS

In this Licence the following words and expressions in shall have the following meanings:

Building Contract	a building contract for the Outfall Works, River Works and/or Works to be made between the Licensee and the Building Contractor
Building Contractor	Renaker Build Limited (CRN 06600257) or such other such suitably experienced and competent building contractor as may be appointed by the Licensee to carry out the Outfall Works, River Works and/or Works and approved by the Licensor (such approval not to be unreasonably withheld or delayed), together with any replacement building contractor that may be appointed by the Licensee in accordance with the terms of the Building Contract and approved by the Licensor (such approval not to be unreasonably withheld or delayed)
CDM Regulations	the Construction (Design and Management) Regulations 2015 (*SI2015/51*) as shall from time to time be amended modified supplemented or replaced and shall include any regulations directions or orders lawfully made thereunder (and terms used in the CDM Regulations shall have the same meaning in this Licence as they have in the CDM Regulations)
Commence	to start or begin development works in

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	accordance with the provisions of Section 56 of the Town and Country Planning Act 1990 (and "**Commenced**" and "**Commencement**" shall be read and construed accordingly)
Connection Fee	eighty thousand pounds (£80,000) exc VAT
Connection Fee Payment Date	the date of this Licence
Counter Notice	a written notice served on the Licensor by a Mortgagee or Licensee or Subtenant pursuant to **clause 8.6** in response to a Termination Notice
D2 Deed of Covenant	a deed of covenant in the form attached to this licence at **Appendix F**
D2 Lease	a lease of land and buildings known as Tower D2, Trinity Islands, Manchester dated 14 April 2023 made between (1) Trinity Developments (Manchester) Limited and (2) Trinity Islands D2 Investments Limited
D1 Outfall	the surface water pipes and outfall together with their supporting structures (such pipes and outfalls to be constructed within the Licensee's Land and along a route and in a position first approved in writing by the Licensor pursuant to the provisions of clause 3 between the area shown by the blue line on Plan 1)
D2 Outfall	the surface water pipes and outfall together with their supporting structures (such pipes and outfalls to be constructed within the Licensee's Land and along a route and in a position first approved in writing by the Licensor pursuant to the provisions of clause 3 between the area shown by the blue line on Plan 2)
D1 Outfall Licence Fee Commencement Date	the earlier of**:** a. the date on which Surface Water first discharges through the D1 Outfall; and b. 1 November 2026
D2 Outfall Licence Fee Commencement Date	the earlier of**:**

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c. the date on which Surface Water first discharges through the D2 Outfall; and

d. 1 December 2025

Deed of Covenant — a deed of covenant in the form attached hereto at **Appendix B** (subject to any such amendments requested by either the Licensor or the Licensee and approved by the other party acting reasonably (such approval not to be unreasonably withheld or delayed))

Design — the plans, sections, specifications and detailed drawings of the Outfalls, Outfall Works, River Works and/or any Works submitted by the Licensee to the Licensor and approved by the Licensor in each case pursuant to the provisions of **clause 3** prior to any Outfall Works, River Works and/or any Works (as the case may be) being Commenced

Design Consultant — Curtins Limited (CRN 04022479) or such other such suitably experienced and competent consultant as may be appointed by the Licensee in relation to the Outfall Works, River Works and/or Works and approved by the Licensor (such approval not to be unreasonably withheld or delayed)

Discharge Application — the written application made by the Licensee to the Licensor for approval of relating to a discharge of Surface Water into the River, such application being attached at **Appendix E** provided that it is acknowledged that the method statement is missing from the attached application (as may be varied pursuant to clause 3)

Freehold — the land and buildings known as:

(1) Tower D1, Phase One, Trinity Islands, Water Street, Manchester comprising part of the freehold land registered under title number MAN333170 but excluding the land shown edged green on Plan 3 and MAN412084 by the Land Registry and which is shown edged red

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on Plan 4; and

(2) Tower D2, Phase One, Trinity Islands, Water Street, Manchester comprising part of the freehold land registered under title number MAN420388 by the Land Registry and which is shown edged red on Plan 5

Group Company	a company which is a member of the same group of companies as the Licensor or the Licensee (as the case may be) within the meaning of Section 42(1) of the Landlord and Tenant Act 1954
Index	the Index of Retail Prices (All items) published by the Office of National Statistics or such other body on whom the duties for preparation and publication of the Index devolves
Initial D1 Licence Fee	forty three thousand eight hundred and twenty pounds (£43,820) per annum
Initial D2 Licence Fee	thirty nine thousand and seven hundred and eighty four pounds (£39,784) per annum
Licence Commencement Date	the date of this Licence
Licence Fee	the Initial D1 Licence Fee or the Initial D2 Licence Fee (as applicable) or any replacement for it pursuant to the Licence Fee Review Provisions in each case per annum
Licence Fee Review Date	1st April falling after the D1 Licence Fee Commencement Date or D2 Licence Fee Commencement Date (as applicable) (unless the date of this Licence is 1st April and in which case the Licence Fee Review Date shall be the date of this Licence) and thereafter the 1st April in each year throughout the Licence Period
Licence Fee Review Period	the period starting with any Licence Fee Review Date and ending on the day immediately preceding the next Licence Fee Review Date or starting with the last Licence Fee Review Date and ending at the

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	end of the Licence Period
Licence Fee Review Provisions	the provisions for review of the Licence Fee contained in **clause 6.4**
Licence Period	250 years from and including the Licence Commencement Date
Licensee's Land	the land shown edged red on the Plan on Plans 3 and 4
Licensor's Conveyancer	Land Law LLP of 10-14 Market Street, Altrincham, Cheshire WA14 1QB (Ref: HXD/100721/265) or such other conveyancer as the Licensor notifies to the Licensee in writing from to time
Licensor's Engineer	the Licensor's engineer for the time being who may be an employee of the Licensor (or a Group Company of the Licensor)
Licensor's Land	the relevant parts of the River or its banks or walls or bed
Method Statement	a written statement and supporting drawings (submitted by the Licensee to the Licensor pursuant to the provisions of **clause 3** setting out in detail how the Outfall Works, River Works or Works will be carried out and completed) and approved in writing by the Licensor in accordance with the provisions of **clause 3**
Mortgagee	a provider of finance or refinance or mortgagee or chargee to the Licensee having a charge subsisting at that relevant time registered against the Licensee's Land (or any part thereof) (or a charge submitted to the Land Registry and pending registration or a charge of which the Licensor has prior written notice of) where notice of its charge of the Licensee's Land (or any part thereof) has been given to the Licensor in writing and whose name and address for service in England and Wales has previously been notified in writing to the Licensor
Mortgagee Deed of Covenant	a deed of covenant in the form attached hereto at **Appendix C** (subject to any such amendments requested by either the

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	Licensor or the Licensee and approved by the other party acting reasonably (such approval not to be unreasonably withheld or delayed))
Multiple	the figure calculated to two decimal places by the use of the following formula: **M** = **A** ÷ **B** where: "**M**" is the Multiple "**A**" is the most recently published figure for the Index at the relevant Licence Fee Review Date; and "**B**" is the most recently published figure for the Index at the Licence Fee Review Date immediately preceding the relevant Licence Fee Review Date or in the case of the first review of the Licence Fee payable under this Licence at 1 April 2024
Notice Period	the period, being not less than 30 Working Days, specified by the Licensor in a Termination Notice for the service of a Counter Notice by the Licensee, Mortgagee or Subtenant
Outfalls	together the D1 Outfall and the D2 Outfall
Outfall Works	the construction of the Outfalls in accordance with the Design and Method Statement and all works associated therewith (including for the avoidance of doubt any River Works) pursuant to **clause 4**
Payment Date	1st April and 1st October in each year during the Licence Period
Permitted Disposal	each of the following: a. the grant of a lease of an apartment forming part of a block of apartments within the Licensee's Land; b. the grant a lease of a car parking space within the Licensee's Land;

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c. the grant a lease of a stand alone commercial unit or a commercial unit forming part of a block of apartments with ancillary commercial units;

d. the grant an easement (other than for drainage to the River);

e. the disposal of part or parts of the Licensee's Land upon which an electricity sub-station, gas generation or pumping station or other statutory services or infrastructure have been or are to be constructed or installed and the immediate curtilage of the same together with ancillary easements in each case (save where relating to the drainage of Surface Water to the River); and/or

f. the disposal of part of the Licensee's Land by way of transfer of the freehold or the grant of a lease for the dedication of highway or of public open space pursuant to section 106 of the Town and Country Planning Act 1990 or sections 38 or 278 of the Highways Act 1980;

Plan(s)	the numbered plans attached hereto at **Appendix A**
Professional Team	the Design Consultant alongside any other parties undertaking or providing services in connection with Outfall Works, River Works and/or Works and/or having a material design responsibility in relation to the Outfall Works, the River Works and/or any Works
Rate of Increase	the annual percentage increase in the tariff which would be chargeable to the Licensee's Land and all buildings and structures on it for surface water drainage services to residential premises as if provided by United Utilities Water plc or its successor undertaker providing such services in the area of the Licensee's Land for the year in which the relevant Licence Fee Review Date falls

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River	the River Irwell
River Works	such works of reconstruction and/or reinforcement to the walls and/or embankments of the River or the surrounding land and such other protective works or mitigation works or measures to the banks wall or structure of the River as the Licensor reasonably and properly deems to be necessary due to the carrying out of Outfall Works and/or the exercise of the licences granted by this Licence in each case in accordance with the Design
Safety Notes	the Licensor's safety notes or directives (whether written or oral provided any oral directions are promptly followed up in writing) as may from time to time be notified by the Licensor or the Licensor's Engineer to the Licensee or its Professional Team (or any entity or entities comprising part or parts of that Professional Team)
Subtenant	any person or entity with a leasehold interest in the whole of the Licensee's Land (not being a lease which is a Permitted Disposal) at the relevant time registered against the title to the Licensee's Land (or a lease submitted to Land Registry and which is pending registration) and who has (or should have) provided the Licensor with a Deed of Covenant
Subtenant Mortgagee	a provider of finance or refinance to any Subtenant having a charge subsisting at that relevant time registered against the Subtenant's interest in the Licensee's Land (or a charge submitted to the Land Registry and pending registration or a charge of which the Licensor has prior written notice of) where notice of its charge has been given to the Licensor in writing and whose name and address for service in England and Wales has previously been notified in writing to the Licensor and who has (or should have) provided the Licensor with a Mortgagee Deed of Covenant
Surface Water	clean and uncontaminated surface water which has first passed through a fully operational silt and petrol interceptor and

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	which has originated from the Licensee's Land
Termination Notice	a written notice served by the Licensor on the Licensee, any Subtenant and any Mortgagee pursuant to the provisions of **clause 8.5** (which for the avoidance of doubt must specify the Notice Period)
VAT	either the tax payable in compliance with the provisions of the Value Added Tax Act 1994 on any relevant supply of goods or services made in the United Kingdom at the rate appropriate at the time of the relevant supply or any alternative or replacement tax and whether payable as the result of an election or otherwise
Warranties	the collateral warranties, to be provided by each member of the Professional Team in favour of the Licensor, substantially in the form attached hereto at **Appendix D** with any material amendments to be approved by the Licensor (such approval not to be unreasonably withheld or delayed) (and "**Warranty**" shall be read and construed accordingly)
Working Day	any day from Monday to Friday (inclusive) other than Christmas Day, Good Friday and any statutory bank or public holiday
Works	any works of maintenance repair alteration renewal reconstruction replacement or removal of the Outfall and all works associated therewith

2. INTERPRETATION

Unless there is something in the subject or context of this Licence inconsistent therewith:

2.1 references to "**the Licensor**" and "**the Licensee**" include their respective successors in title and assigns.

2.2 Words importing the singular number include the plural number and vice versa and words importing the masculine gender include the feminine gender and vice versa.

2.3 Any reference to a statute or order in this Licence includes any statutory extension or modification or re-enactment of such statute or order and any regulations, orders or guidelines made thereunder.

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2.4 Words importing persons include companies and corporations and vice versa and any reference in this Licence to a company will include a limited liability partnership

2.5 Any covenant in this Licence by the Licensee not to do any act or thing includes an obligation not to agree or suffer any act or thing to be done and to use all reasonable endeavours to prevent such act or thing being done by another person.

2.6 The titles or headings appearing in this Licence and the front cover of this Licence are for reference and will not affect its construction or its interpretation.

2.7 References in this Licence to any clause, schedule or paragraph will be construed as a reference to the clause, schedule or paragraph of a schedule to this Licence so numbered.

2.8 Any sum payable by one party to another will be exclusive of VAT which will where it is chargeable be paid in addition to the sum in question at the time when the sum in question is due to be paid.

2.9 References to "loss" are references to liabilities damages or losses awards of damages or compensation penalties costs disbursements and expenses arising from any claim demand action or proceedings.

2.10 If any provision of this Licence is held to be invalid or unenforceable then such provision is (so far as invalid or unenforceable) to be given no effect and is deemed not to be included in this Licence but without invalidating any of the remaining provisions of this Licence.

2.11 Where the Licensor or the Licensee is under an obligation to do something pursuant to this Licence it will be deemed to have satisfied such obligation if it procures that such thing is done.

3. DISCHARGE APPLICATION

3.1 The Licensee confirms to the Licensor that they have submitted the Discharge Application and shall not vary the Discharge Application without the consent of the Licensor.

3.2 The Licensor confirms to the Licensee that subject to clause 3.3 the Discharge Application has been approved and it shall not and shall procure that the Licensor's Engineer shall not unreasonably withhold or delay their approval of any variation of the Discharge Application or any document comprising part of it

3.3 The parties acknowledge that the method statement has not been submitted as part of the Discharge Application and therefore the Licensor shall not exercise or purport to be entitled to exercise the rights contained in **clause 4** until such a time as the method statement has been approved in writing by the Licensor and the Licensor's Engineer (such approval not to be unreasonably withheld or delayed).

3.4 Any terms or provisions within the Discharge Application which relate to the exercise of the rights (or any caveats or conditions or limitations in respect of the exercise of the rights) contained in clause 4 shall be deemed to form part of this Licence and the Licensor's rights to terminate this Licence detailed below shall extend and be exercisable in respect of any breaches of the terms or provisions of the Discharge Application.

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3.5 The parties to this Licence agree and acknowledge that:

3.5.1 the Outfalls are to be constructed by the Licensee in accordance with the provisions of Schedule 3 of this Licence and thereafter it is to be used by the Licensee for the discharge of Surface Water into the River only;

3.5.2 this Licence is being entered into to formalise the terms and conditions relating to the construction of the Outfalls by the Licensee and the use of the Outfalls thereafter by the Licensee.

4. LICENCE TO CARRY OUT WORKS AND DISCHARGE SURFACE WATER

In consideration of the relevant annual Licence Fee reserved and payable to the Licensor by the Licensee on the terms set out herein and the Connection Fee payable to the Licensor by the Licensee on the Connection Fee Payment Date and of the obligations contained in this Licence the Licensor grants to the Licensee (in so far as it is entitled to do so) licence (subject to the termination rights detailed below):

4.1 (in common with the Licensor and all others from time to time authorised by the Licensor or otherwise entitled) to construct the Outfalls and carry out the Outfall Works, the River Works and/or any Works (and any works connected therewith) in accordance with the provisions of **Schedule 3** of this Licence;

4.2 to use the Outfalls for the discharge into the River of Surface Water in accordance with the terms of this Licence; and

4.3 to enter with or without workmen, servants, agents, contractors, plant, machinery, equipment, tools and materials at all reasonable times on to such parts of the Licensor's Land as have been previously approved by the Licensor (such approval not to be withheld or delayed) save in emergency when entry may be taken on giving as much notice as possible in the given circumstances (subject to the Licensee carrying out such further works as the Licensor may reasonably require after such entry is taken) and in each case as may be necessary for the purposes of exercising the licences and permissions granted by this Licence.

TO HOLD for the Licence Period or until determined as hereinafter provided

5. TEMPORARY DRAINAGE LICENCE

5.1 The parties to this Licence hereby agree and acknowledge from and including the Licence Commencement Date until such a time as the Outfall Works are completed in accordance with the terms of this Licence that surface water may flow through its natural course from the surface of the Licensee's Land into the River (the "**Temporary Drainage**") and that such flow shall be permitted by the Licensor until such a time as the Outfall Works are completed PROVIDED THAT:

(a) the Licensee shall ensure that the surface water which shall drain pursuant to the Temporary Drainage shall be clean and uncontaminated;

(b) the Licensee's covenants in this Licence in relation to the drainage of Surface Water through the Outfalls shall apply equally to the Temporary Drainage (mutatis mutandis including but not limited to references in those covenants

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to the "Outfalls" to be read and interpreted accordingly as applying to the area of the Licensee's Land through, over or under which the surface water shall flow pursuant to the Temporary Drainage) and the Licensee hereby covenants with the Licensors to observe and perform such covenants in relation to the Temporary Drainage PROVIDED FURTHER FOR THE AVOIDANCE OF DOUBT the following Licensee covenants shall not apply to the Temporary Drainage:

(i) the covenants contained in clause 3;

(ii) the covenants contained in clauses 7.2, 7.8, 7.19, 7.21, 7.22 and 7.25; and

(iii) the covenants contained in **Schedule 3**.

(c) the Initial D1 Licence Fee shall be paid from and including the D1 Licence Fee Commencement Date and thereafter at the times and on the terms specified under this Licence; and

(d) the Initial D2 Licence Fee shall be paid from and including the D2 Licence Fee Commencement Date and thereafter at the times and on the terms specified under this Licence; and

(e) the Connection Fee shall be paid on the Connection Fee Payment Date.

6. CONNECTION FEE, LICENCE FEE AND LICENCE FEE REVIEW

The Licensee covenants with the Licensor:

6.1 To pay to the Licensor by direct debit or other authorised payment from a clearing bank based in the United Kingdom the Licence Fee per annum subject to the Licence Fee Review Provisions from and including the D1 Outfall Licence Fee Commencement Date and payable by half yearly payments in advance on each Payment Date and/or D1 Outfall Licence Fee Commencement Date (as applicable) in each year clear of all deductions the first of such payments in respect of the period from and including the relevant licence fee commencement date until and including the date prior to the next Payment Date to be paid on the relevant licence fee commencement date.

6.2 To pay to the Licensor the Connection Fee from a clearing bank based in the United Kingdom on the Connection Fee Payment Date.

6.3 On production of a VAT invoice to pay any VAT which is now payable or may become payable in respect of the sums or any part of them due under this Licence or any of them which are exclusive of VAT.

6.4 That the Licence Fee shall be increased annually on each Licence Fee Review Date to the greater of:

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(a) a licence fee equal to the Licence Fee payable immediately before the relevant Licence Fee Review Date (ignoring any payment cesser or abatement); and

(b) a licence fee equal to the indexed charge as may be ascertained in accordance with **Schedule 1**; and

(c) a licence fee calculated by multiplying the Licence Fee payable immediately before the relevant Licence Fee Review Date (ignoring any cesser or abatement of the Licence Fee) by the Rate of Increase and adding the result to the Licence Fee payable immediately prior thereto (ignoring any cesser or abatement of the Licence Fee) for surface water drainage services to residential premises by United Utilities Water plc or its successor undertaker providing such services in the area of the Licensee's Land for the year in which the relevant Licence Fee Review Date falls)

PROVIDED THAT:

(i) such reviewed Licence Fee shall not be greater than the amount which United Utilities Water plc (or its successor undertaker providing such services in the area) would charge at the relevant Licence Fee Review Date for a comparable discharge service through its network; and

(ii) if United Utilities Water plc (or its successor undertaker providing surface water drainage services in the area) ceases to levy a separate charge for surface water drainage services to residential premises or incorporates some of the charge into another service **clause 6.4(c)** and **clause 6.4(c)(i)** shall no longer apply.

6.5 If the revised Licence Fee payable on and from any Licence Fee Review Date has not been agreed or determined by that Licence Fee Review Date then the Licence Fee shall continue to be payable at the rate previously payable and within 20 Working Days after the revised Licence Fee being ascertained, the Licensee shall pay to the Licensor any shortfall between the Licence Fee and the revised Licence Fee payable up to the relevant Payment Date following ascertainment together with interest on any shortfall at the base rate of the Royal Bank of Scotland plc such interest to be calculated on a day to day basis from the relevant date on which it would have been payable if the revised Licence Fee had then been ascertained at the relevant Licence Fee Review Date to the date of actual payment of any shortfall and the interest so payable shall be recoverable in the same manner as charge in arrear.

6.6 That time is not of the essence in the procedures to ascertain the revised Licence Fee.

7. LICENSEE COVENANTS

The Licensee covenants with the Licensor:

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7.1 To pay all existing and future taxes rates charges duties assessments impositions and outgoings whatsoever from time to time payable either by the Licensor or the Licensee in respect of the Outfalls and/or this Licence.

7.2 To construct and install the Outfalls and carry out the Outfall Works, the River Works and any Works in accordance with the provisions of **Schedule 3**.

7.3 At all times during the continuance of this Licence and after such is constructed to maintain and keep the Outfalls in good and substantial and safe repair and condition to the reasonable satisfaction of the Licensee's Engineer PROVIDED THAT if at any time the Licensor or the Licensor's Engineer notifies the Licensee in writing that in the reasonable opinion of the Licensor or the Licensor's Engineer the state of repair of the Outfalls is in such a state of disrepair that the River is prejudicially affected, the Licensee will on receipt of such notice take such steps as are necessary to put the Outfalls in to such state of repair as not to prejudicially affect the River and in the event that the Licensee does not commence and diligently proceed with such works within 30 Working Days after receipt of the notice from the Licensor or Licensor's Engineer (or 20 Working Days in the case of an emergency), the Licensor or the Licensor's Engineer will be entitled to carry out such works of repair as are necessary and the proper costs and expenses incurred by the Licensor or the Licensor's Engineer in doing so will be repaid to the Licensor or the Licensor's Engineer (as the case may be) by the Licensee within ten Working Days of receipt of written demand.

7.4 Not to cause any damage to the Outfalls or the Licensor's Land or any property in the ownership of the Licensor and to make good any damage caused to the reasonable satisfaction of and under the supervision of the Licensor and the Licensor's Engineer.

7.5 To use the Outfalls for the discharge of Surface Water only and not to permit any oil silt noxious harmful or solid matter to pass into the River, whether through the Outfalls or otherwise, and to comply at all times and in all respects with all statutory requirements (including any modification or re-enactment of them for the time being in force) byelaws any regulations or orders made under them and any requirements of any statutory authority (including but not limited to the Environment Agency or its successor regulator) affecting the Outfalls or the exercise of the permission granted by this Licence or (in connection with the Outfalls and/or the exercise of the permissions given hereunder) the property around the Outfalls and/or on which the Outfalls is situate PROVIDED THAT:

(a) the rate of discharge of Surface Water shall not at any time during the Licence Period exceed 100 litres per second per Outfall; and

(b) the velocity of the Surface Water discharge shall not at any time during the Licence Period exceed a velocity of 2 metres per second per Outfall.

7.6 To obtain and maintain all licences and consents necessary to enable the lawful drainage to the River of Surface Water pursuant to this Licence and to comply with all conditions contained or referred to in such licenses and consents and the obligations hereunder.

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7.7 In relation to any act, the commission or omission of which requires any consent, permission, approval, licence or any other authority (for the purposes of this **paragraph 7.7**, an "**Authority**") under the Environmental Protection Act 1990 or any Act or Acts amending replacing or modifying such Act for the time being in force or of a similar nature and all orders and regulations thereunder:

(a) not to do or omit to do (as the case may be) such act without obtaining such Authority;

(b) not to apply for or vary or apply to cancel or withdraw such Authority without the prior written consent of the Licensor (such consent not to be unreasonably withheld or delayed); and

(c) not to discharge or allow to be discharged into the River any fluid of a poisonous or noxious nature of a kind calculated to or that does in fact destroy sicken or injure the fish or contaminate or pollute the water of any stream, river, river bed, river wall and/or river banks and not to do or permit or allow or suffer to be done or permitted any act or thing whereby the waters of any such stream, river, river bed, river wall and/or river banks may be polluted or the composition thereof so changed as to render the Licensor liable to any action or proceedings by any person whomsoever and to indemnify and keep indemnified the Licensor in respect of all loss, damage, actions, proceedings, claims, demands and damages and all properly incurred costs and/or expenses that may arise through a breach of this covenant.

7.8 That the Licensee will (unless the Licensor requires otherwise) at its own expense promptly on the determination of this Licence remove the Outfalls and reinstate the River and the Licensor's Land to the reasonable satisfaction of the Licensor's Engineer.

7.9 Not to do or permit to be done anything which may cause any obstruction to or which may endanger the use of the River or which may cause any loss or obstruction to the flow of the water in the River or which may endanger or obstruct to the use of the towing path or cause any injury or damage to the towing path or banks of the River or any other property of the Licensor.

7.10 Not to make cause or permit to be made any alterations whatsoever to the Outfalls or any part thereof nor any addition to or connection to the same without the prior written consent of the Licensor (such consent not to be unreasonably withheld or delayed) PROVIDED THAT in any event there shall be no connections made to the Outfalls so as to drain through the Outfalls from land other than the Licensee's Land.

7.11 Except in accordance with the provisions of **Schedule 2**, not to transfer assign or otherwise part with share or hold on trust the whole or any part of this Licence nor the benefit of it nor to grant any third party any permission under this Licence whether by way of sub-licence or otherwise and the parties covenant to comply with their obligations at **Schedule 2**.

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7.12 That the Outfalls will be maintained repaired removed altered or replaced by the Licensee at its own risk and no claim or demand whatsoever will be made against the Licensor in respect of or in any way arising out of damage injury to or loss of the Outfalls or any works connected therewith or any parts thereof.

7.13 To indemnify and keep indemnified the Licensor from and against liability in respect of all loss damage actions proceedings claims demands costs damages and expenses of whatsoever nature in respect of any injury to or death of any person or damage to any property moveable or immoveable or in respect of the infringement disturbance or destruction of any right covenant or privilege or otherwise by reason of or arising in any way directly or indirectly out of or as a consequence of:

7.13.1 damage to the Outfalls by any vessel navigating the River;

7.13.2 the exercise of the Licence and permissions granted hereunder; and/or

7.13.3 any lack of maintenance or repair to any Outfalls and/or the River its walls bed or banks which supports the Outfalls or otherwise in the exercise of the Licence and permissions granted hereunder; and/or

7.13.4 failure of any Outfalls as a result of any subsidence landslip or collapse of the walls bed or banks of the River; and/or

7.13.5 the non compliance with any consents obtained in connection with Works; and/or

7.13.6 the depletion of assets of the Licensor or any payment in consequence of any liability of the Licensor to any tax or levy arising out of or as a result of the Outfalls; and/or

7.13.7 any act omission or default of the Licensee its agents contractors servants invitees or licensees; and/or

7.13.8 any breach by the Licensee or its servants agents contractors licensees or invitees of any covenant on the part of the Licensee or any condition herein contained;

AND the liability of the Licensee will not be in any way affected by any approval given or supervision exercised by the Licensor or its or their servants contractors or agents hereunder.

7.14 In respect of any claim covered by an indemnity given to the Licensor by the Licensee under this Licence, the Licensor is to use reasonable endeavours to mitigate its loss where it is reasonably practicable for the Licensor to do so and such claim or other loss or other relevant matter is within the Licensor's control.

7.15 That the Licensee will on (and as a condition of) completion of this Licence pay the Licensor's Engineer's fees relating to their review and approval of this Licence and any documents appended to it amounting to [five hundred pounds (£500) plus VAT].

7.16 That the Licensee will from time to time within 15 Working Days of demand pay to the Licensor the following reasonable costs and expenses of the Licensor:

(a) the fees of the Licensor's Engineer and travelling expenses of and incidental to the inspection and/or supervision of and attending site meetings in

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relation to any River Works and/or any Works, such fees to be calculated on the basis of the Licensor's Engineer's rates from time to time in force AND IT IS HEREBY AGREED AND ACKNOWLEDGED THAT the Engineer's fees in relation to the initial approval and/or inspection and supervision of the Outfall Works shall be covered by the fees contribution set out at **clause 7.15** and no further fees may be levied in that regard; and

(b) the costs and fees of the Licensor's consultants (if any, and including but not limit to the costs and fees of their legal advisers) from time to time which would not have arisen if this Licence had not been granted AND IT IS HEREBY FURTHER AGREED AND ACKNOWLEDGED THAT the Licensor's legal costs in relation to the preparation, agreement, engrossment and completion of this Licence shall be covered by the costs contribution set out at **clause 7.15** and no further costs may be levied in that regard.

7.17 In the event that the Licence Fee due pursuant to **clause 6** or any part of it or any other sum due pursuant to this Licence remains unpaid for more than 20 Working Days after the date on which the same became due (whether formally demanded or not) to pay interest from the date on which the same became due until the date of payment at the yearly rate of 4% above the base rate for the time being of The Royal Bank of Scotland plc or such other bank being a member of the Committee of London and Scottish Bankers as the Licensor may from time to time nominate or if that base rate cannot be ascertained such other reasonable rate of interest as the Licensor from time to time determines.

7.18 The Licensee must maintain at all times full and effective insurance in such sum as the Licensor may reasonably require from time to time:

(a) (being at least ten million pounds (£10,000,000) per claim) against any injury and damage to persons and property which may occur or arise out of the carrying out of the Outfall Works, the River Works and/or any Works (and any works connected therewith), the existence of the Outfalls or the exercise of the licence hereby granted or out of the act neglect or default of the Licensee its servants agents contractors or visitors; and

(b) (being at least ten million pounds (£10,000,000) per claim) against any environmental injury harm damage and contamination to persons property or otherwise which may occur or arise out of the carrying out of the Outfall Works, the River Works and/or any Works (and any works connected therewith), the existence of the Outfalls or the exercise of the licence hereby granted or out of the act neglect or default of the Licensee its servants agents contractors or visitors (including but not limited to covering liabilities which arising under **clause 7.7** and costs and expenses of remediation of environmental damage and environmental harm);

and must produce to the Licensor within five Working Days of their request, the insurance policy and the last premium for the receipt but not more than once in any one year.

7.19 Before Commencing the Outfall Works, River Works and/or the Works (and any works connected therewith) to effect (or procure) insurance in respect of those

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works and all unfixed goods and materials at the Licensee's Land or Licensor's Land (as the case may be) in relation to those works with a reputable insurance office in or having a business office in the United Kingdom to their full reinstatement costs against a comprehensive list of insured risks which the Licensee shall deem necessary (acting reasonably) with a minimum level of indemnity of ten million pounds (£10,000,000) per claim and the Licensee will procure that such insurance shall be kept in force until at least the date which is 12 months after practical completion of the Outfall Works, River Works and/or Works (and any works connected therewith) (in each case as the case may be) and as and when reasonably requested to do so to provide to the Licensor with a copy of the policy or policies effected and maintained pursuant to this **clause 7.19** together with evidence of the payment of the premium for it and its renewal from time to time.

7.20 To procure that the building contractor carrying out the Outfall Works, River Works and/or Works and their respective workmen agents and employees will at all times carry out those works in accordance with the requirements of such insurer of those works pursuant to the provisions of **clause 7.19**.

7.21 To notify the Licensor of the same within ten Working Days of the date on which Surface Water originating from the Licensee's Land first discharges through each of the Outfalls.

7.22 To comply with the obligations on the part of the Licensee in the **Schedules** to this Licence.

7.23 Not at any time to request, apply for or permit or allow by act or omission the Outfalls and/or the drainage system leading to the Outfalls to become adopted by (or subject to an adoption agreement with) United Utilities Water plc (or its successor undertaker or other equivalent default retailer operating in the area of the Licensee's Land at the relevant time providing such services in the area) pursuant to the provisions of section 104 of the Water Industry Act 1991 (or any provision to similar intent) or an agreement with a water undertaker or a drainage undertaker.

7.24 The Licensee must not Commence or carry out the Outfall Works, the River Works and/or any Works (or any works connected therewith) or any part of them unless the Licensee has first delivered to the Licensee duly executed Warranties relating to such works and if following the delivery of the aforementioned Warranties the Licensee appoints by way of replacement or substitution a Professional Team member in relation to which a Warranty has been delivered as aforementioned the Licensee will procure delivery to the Licensor in substitution a duly executed Warranty within 10 Working Days of the appointment of the replacement or substituted Professional Team member.

7.25 The Licensee will diligently observe its obligations under the Building Contract and under all appointments of the Professional Team and will take all necessary action to enforce the due performance of the obligations on the part of the Building Contractor and the members of the Professional Team.

7.26 The Licensee will take all necessary action to enforce the due performance of the obligations on the part of the tenant from time to time under the D2 Lease to pay

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its proportion of fees to the Licensee in relation to this Licence and to comply with the obligations in any deed of covenant given by such tenant to comply with obligations under this licence (including but not limited to the D2 Deed of Covenant)

7.27 The Licensee will procure that Trinity Islands D2 Investments Limited enters into the D2 Deed of Covenant on the date of this Licence

8. PROVISOS

It is hereby agreed and declared:

8.1 That in case of default by the Licensee in respect of any of the provisions of this Licence the Licensor without prejudice to any other right or remedy shall be entitled to do such things itself as required of the Licensee and to make good any damage to the Licensor's Land by so doing and also to carry out any works which in the reasonable opinion of the Licensor's Engineer are necessary to safeguard or secure the Licensor's Land and unrestricted user of the River and any other property affected against any damage or interference caused by such default on the part of the Licensee and the Licensee shall pay to the Licensor on demand the proper costs (as certified by the Licensor's Engineer) of all works carried out and all such things done by the Licensor within ten Working Days of written demand PROVIDED THAT in relation to a breach of clause 7.3 the procedure set out in the clause 7.3 shall be followed before the Licensor may exercise its rights under this clause 8.1.

8.2 That the Licensor shall be at liberty from time to time but not more than once in any year (save in emergency) to obtain and take away samples of water discharged into the River by means of the Outfalls and the Licensee shall pay to the Licensor upon demand the proper and reasonable cost (as certified by the Licensor's Engineer) of so doing and of any analysis of any sample so obtained where the Licensee is found to be discharging water into the River which is not Surface Water or is otherwise in breach of this Licence.

8.3 That the Licensor will not be accountable or responsible for any flooding or any seepage or leakage of water on or into the Outfalls from any cause whatsoever and the Licensee will not be entitled to recover any damages costs charges or expenses against the Licensor in respect thereof.

8.4 If:

(a) the Outfall Works, the River Works and/or any Works have not been constructed or completed in accordance with the obligations set out in this Licence; or

(b) the Licence Fee or any part of it remains unpaid for 20 Working Days after the same is due (whether demanded by the Licensor or not); or

(c) the Connection Fee (in whole or part) is not paid on the Connection Fee Payment Date; or

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(d) if there shall be any breach on the part of the Licensee of the conditions herein;

(each a "**Relevant Event**"), then and in any such case (but subject to the provisions of **clause 8.5** to **clause 8.10** (inclusive)) it shall be lawful for the Licensor to serve immediate written notice on the Licensee to determine the Licence.

8.5 The Licensor agrees not to serve a notice to determine this Licence under **clause 8.4** until it has:

(a) served a Termination Notice on any Mortgagee; and

(b) served a Termination Notice on any Subtenant;

(c) served a Termination Notice on any Subtenant Mortgagee; and

(d) served a Termination Notice on the Licensee

8.6 Before the expiry of the Notice Period, a Mortgagee, Subtenant, Subtenant Mortgagee or Licensee may, by service of a Counter Notice:

(a) elect to commence or procure the commencement of and thereafter make (or procure the making) good of the Relevant Event within a reasonable period of time to be specified in the Counter Notice, being for the avoidance of doubt:

(i) a period not exceeding 40 Working Days from the date of service of the Counter Notice in the case of the Relevant Event being one of the events specified at **clause 8.4(b)** and/or **clause 8.4(c)**; and

(ii) a period not exceeding 60 Working Days from the date of service of the Counter Notice in the case of the Relevant Event being one of the events specified at **clause 8.4(a)** and or **clause 8.4(d)**;

(the "**Rectification Period**"); or

(b) elects to take no action in respect of the Relevant Event;

8.7 If each any Mortgagee, Subtenant, Subtenant Mortgagee and the Licensee serves a Counter Notice pursuant to which they each elect to take no action then the Licensor may proceed to determine this Licence.

8.8 If no Mortgagee or Subtenant or Subtenant Mortgagee or the Licensee serve a valid Counter Notice within the Notice Period then each Mortgagee and Subtenant and Subtenant Mortgagee and the Licensee shall be deemed to have elected to take no action and in which case the Licensor may proceed to determine this Licence.

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8.9 If a Mortgagee or Subtenant or Subtenant Mortgage or the Licensee (the "**Electing Party**") serves a Counter Notice pursuant to which it elects to make (or procure the making) good of the Relevant Event then the Electing Party shall proceed to make (or procure the making) good and thereafter (where relevant) complete all such necessary works to rectify and remedy the Relevant Event to the Licensor's reasonable satisfaction within the time period so specified in the Counter Notice Rectification Period (or, in the event that the Licensor reasonably considers that the time period so specified in the Counter Notice is not reasonable or proportionate having regard to the nature and severity of the Relevant Event, within such shorter time period as the Licensor shall notify to the Electing Party in writing within 10 Working Days of service of the Counter Notice (the "**Revised Rectification Period**").

8.10 If, following service of a Counter Notice pursuant to which the provisions of **clause 8.9** apply, the Electing Party does not complete or procure the completion of the making good of the Relevant Event by the expiry of the Rectification Period or the Revised Rectification Period (as the case may be) to the Licensor's reasonable satisfaction then on the expiry of the Rectification Period or the Revised Rectification Period (as applicable) the Licensor may proceed to determine this Licence.

8.11 Any determination of this Licence shall be without prejudice to the remedies of the Licensor in respect of anything previously done, omitted or suffered.

8.12 Any determination of this Licence shall be without prejudice to the remedies of the Licensor in respect of anything previously done, omitted or suffered.

9. CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999

The Licence is not intended to confer any rights on any persons who are not named as parties.

10. JOINT AND SEVERAL LIABILITY

Obligations expressed to be made or assumed by a party comprising more than one person are made and are to be construed as made by all such persons jointly and severally.

11. PURPOSE OF THIS LICENCE

The parties agree that the primary purpose of this Licence and the payment of the Licence Fee and Connection Fee on the terms set out herein is to facilitate the provision of a service for the discharge of Surface Water for the benefit of the Licensee's Land.

12. JURISDICTION

12.1 This Licence is subject to the law of England and Wales.

12.2 The parties submit to the exclusive jurisdiction of the courts of England and Wales and irrevocably agree that proceedings issued out of the said courts may (without

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prejudice to the rules of service of such courts) be served by delivering such proceedings in an envelope addressed to the party to be served at the address for such party set out in this Licence.

13. NOTICES

13.1 All applications notifications consents approvals and notices under this Licence must be in writing.

13.2 Unless the receiving party acknowledges receipt a notice is valid only if it is given by hand or sent by special or sent by recorded delivery and served:

(a) at its registered office where the receiving party is a company incorporated in the United Kingdom; or

(b) otherwise at that party's address shown in this Licence or at an address specified in a notice given by that party to the other parties.

13.3 Unless it is returned through the postal service undelivered a notice sent by special delivery or recorded delivery is to be treated as served on the third Working Day after posting whenever (and whether or not) it is received.

14. LICENSEE RELEASE

14.1 Where a Licensee transfers the whole of its interest in the relevant Licensee's Land then upon completion and delivery to the Licensor of a Deed of Covenant in favour of the Licensor from the relevant Licensee's successor, then the transferring relevant Licensee shall, (save in relation to its obligations in contained in Schedule 3) subject to all sums then accrued and due hereunder having been paid, be released from the covenants on its part herein contained (without prejudice to the remedies of the Licensor in respect of anything previously done, omitted or suffered by the disposing relevant Licensee)

14.2 Where a Licensee transfers part only of its interest in the relevant Licensee's Land then upon completion and delivery to the Licensor of a Deed of Covenant in favour of the Licensor from the relevant Licensee's successor, then the transferring relevant Licensee shall, (save in relation to its obligations in contained in Schedule 3) subject to all sums then accrued and due hereunder having been paid, be released from the covenants on its part herein contained in so far as they relate to the part of the relevant Licensee's Land transferred (without prejudice to the remedies of the Licensor in respect of anything previously done, omitted or suffered by the disposing relevant Licensee)

15. CONFIDENTIALITY

Except in so far as required to comply with legal obligations or regulatory or statutory requirements the terms and conditions of this Licence will not be released by either party to the press or any periodical journal nor will either party make any public announcement about it without the prior written consent of the other party and each party will treat this Licence as confidential to it and its advisors.

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IN WITNESS whereof the parties hereto have executed these presents as a Deed the day and year first before written.

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Schedule 1

Indexed Charge Fee Review

1. The indexed charge for any Licence Fee Review Period is to be determined at the relevant Licence Fee Review Date on which that Licence Fee Review Period begins by multiplying the Licence Fee payable immediately before the relevant Licence Fee Review Date (ignoring any charge cessor or abatement) by the Multiple

2. Such determination of the indexed Licence Fee is to be made at any time by the Licensor and notified in writing to the Licensee.

3. If after the date of this Licence there shall be any change in the method by which the Index is calculated or the Index shall be altered in any other way (other than by change in the reference base used to compile the Index) or if the Index shall be replaced or abolished the Licensor and the Licensee shall endeavour to agree such other method of calculating the amount of the revised Licence Fee due at a Licence Fee Review Date as shall be fair and reasonable in all the circumstances and in the event of any dispute or question arising between the parties or if the parties fail to agree upon such alternative method of calculation the dispute or question shall be determined on the application of either party by an independent surveyor to be appointed by or on behalf of the President for the time being of the Royal Institution of Chartered Surveyors such surveyor to act as an arbitrator in accordance with the Arbitration Act 1996.

4. The Licensor shall before each Licence Fee Review Date (or as soon as reasonably practicable thereafter) give notice to the Licensee of its calculation under **paragraph 2** of this **Schedule 1** of the revised Licence Fee from such Licence Fee Review Date for the relevant Licence Fee Review Period under those provisions and if such calculation is not challenged by the Licensee within 20 Working Days of such calculation being notified to the Licensee it shall be deemed to be agreed.

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Schedule 2

Dealings

1. The Licensee covenants with the Licensor not to dispose of the Licensee's Land or any part of it (other than by way of Permitted Disposal or a charge or mortgage) without first procuring that the relevant disponee executes and delivers to the Licensor or the Licensor's Conveyancer a Deed of Covenant in relation to the relevant land and/or interest so disposed of together with written confirmation from or for and on behalf of the relevant disponee that the said Deed of Covenant is unconditionally and irrevocably released to the Licensor and the Licensor's Conveyancer for completion.

2. The Licensee covenants not to mortgage or charge the Licensee's Land or any part of it without first procuring that the relevant mortgagee or chargee executes and delivers to the Licensor or the Licensor's Conveyancer a Mortgagee Deed of Covenant in relation to the relevant land and/or interest so mortgaged or charged together with written confirmation from or for and on behalf of the relevant mortgagee or chargee that the said Mortgagee Deed of Covenant is unconditionally and irrevocably released to the Licensor and the Licensor's Conveyancer for completion BUT FOR THE AVOIDANCE OF DOUBT this covenant shall not apply to any mortgaging or charging of any devolutionary interest granted or created out of the Licensee's interest in the Licensee's Land that is permitted under this Licence.

3. The Licensee may grant Permitted Disposals without the need to procure a Deed of Covenant from the disponee PROVIDED THAT where the Permitted Disposal is of a type referred to at paragraph (a) (b) or (c) of the definition of Permitted Disposal the relevant lease which gives effect to the Permitted Disposal shall contain covenants on the part of the tenant to observe and perform the obligations contained in this Licence (save for any obligations relating to carrying out the Outfall Works, River Works or Works) insofar as they relate to and affect the land and/or interest disposed of, including a covenant to pay or contribute a fair and reasonable proportion of the Licence Fee, and the Licensee hereby covenants to use all reasonable endeavours to enforce or to procure the enforcement of such covenants and/or obligations at the reasonable request of the Licensor and not to waive any breach of such covenant and/or obligations.

4. To protect the covenants contained in **paragraphs 1** and **2** of this **Schedule 2** above the Licensee shall promptly after the date of this Licence apply to the Land Registry at its own cost for the entry onto the proprietorship registers of the registers of title comprising the Licensee's Land of a title restriction in the following form:

   "No disposition of the registered estate by the proprietor of the registered estate, or by the proprietor of any registered charge, not being a charge registered before the entry of this restriction, is to be registered without a certificate signed by a conveyancer that the provisions of paragraphs 1 and 2 of Schedule 2 of the Licence dated 18 February 2025 made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Developments (Manchester) Limited have been complied with or that they do not apply to the disposition"

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and the Licensee shall within five Working Days of completion of their application to the Land Registry pursuant to the provisions of this **paragraph 4** deliver to the Licensor (or procure that that Licensee's conveyancer shall deliver to the Licensor's conveyancer) copies of the updated title register to the Licensee's Land as evidence of compliance with the provisions of this **paragraph 4**.

5. The Licensee covenants not to transfer share part with possession of or otherwise dispose of the benefit of this Licence or any part thereof other than as hereinafter permitted.

6. The Licensee covenants not to:

    a. transfer the whole of this Licence other than to a purchaser or Mortgagee of the whole of the Licensee's Land (such transfer to be simultaneous with the purchase or the Mortgagee taking possession); and

    b. not to share the benefit of this Licence other than with a Subtenant (the grant of such sharing to be simultaneous with the grant of the lease to the Subtenant) or a disponee of a Permitted Disposal.

    in each case in accordance with the provisions of this **Schedule 2**.

7. Within 20 Working Days of any transfer or sharing of this Licence the Licensee shall produce for registration with the Licensor a certified copy of the deed or document effecting the transfer or sharing of this Licence together with a certified copy of the Deed of Covenant or Mortgagee Deed of Covenant (where a Deed of Covenant or Mortgagee Deed of Covenant is to be provided pursuant to the provisions of this Licence) and to pay the Licensor's proper charges for registration of every such deed or document not exceeding £50

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Schedule 3

Works Requirements

The Licensee hereby agrees with the Licensor:

1. To carry out the Outfall Works, River Works and/or Works in accordance with the Design, Method Statement and Safety Notes and in a proper and workmanlike manner and (where applicable) to comply strictly with the provisions of the CDM Regulations.

2. To comply with such directions for the safety of navigation as may be considered reasonably necessary by the Licensor's Engineer having regard to the location and nature of the Outfall Works, River Works and/or Works and which are notified to the Licensee.

3. Not to install or construct the Outfalls or Commence or carry out the Outfall Works, River Works and/or Works without first giving to the Licensor and the Licensor's Engineer reasonable prior written notice of its intention so to do and to permit the Licensor and the Licensor's Engineer and its servants agents contractors and consultants at all reasonable times following reasonable prior written notice (save in the case of emergency) during the progress of the Outfall Works, River Works and/or Works (and any works connected therewith) to have reasonable access thereto to inspect the same and to attend site meetings and to have due regard to any representations made by or on behalf of the Licensor and/or the Licensor's Engineer.

4. Not during the carrying out of the Outfall Works, River Works and/or Works or otherwise during the Licence Period to deposit or permit or suffer debris rubbish building materials or other items which are waste or any other discarded material ("**Debris**") to be deposited in the River from the Outfalls or the Licensee's Land or the Licensor's Land and if any Debris is deposited or falls into the River forthwith to inform and arrange with the Licensor's Engineer to remove the Debris from the River and in default thereof the Licensor may remove the Debris and all proper costs incurred in connection therewith will be paid by the Licensee within five Working Days of demand to the Licensor and further if any Debris is deposited or falls into the River the Licensee is to obtain at their own cost an independent assessment of the Debris to ascertain whether or not the Debris has or may have polluted or contaminated the River and forthwith to produce to the Licensor a copy of such assessment and thereafter forthwith take such action and measures as the Licensor may specify to counter reduce or remove such pollution or contamination (if any).

5. At all times during the carrying out of any Outfall Works, River Works or Works, including carrying out of any reinstatement of the Licensor's Land, to keep the Outfalls, the Licensee's Land and the Licensor's Land affected by the same properly and adequately watched, supervised and lit.

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Executed as a **Deed** by)
THE MANCHESTER SHIP CANAL)
COMPANY LIMITED)
acting by _____ a director,)
in the presence of:)

.....
Director

Witness

Signature .....

Name (print) .....

Address .....

.....

Occupation .....

OR

Executed as a **Deed** by _____)
as attorney for **THE MANCHESTER SHIP**)
CANAL COMPANY LIMITED under a)
power of attorney dated 28th June 2024)
in the presence of:)

.....

_____ as attorney for
THE MANCHESTER SHIP CANAL COMPANY LIMITED

Witness

Signature .....

Name (print) .....

Address .....

.....

Occupation .....

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Executed as a **Deed** by)
TRINITY DEVELOPMENTS)
(MANCHESTER) LIMITED)
acting by a director in the presence)
of a witness:)

[redacted]

Director

Witness

Signature [redacted]

Name (print) Andrew Lofthouse

Address 1st Floor, Nq Building 47 Bengal Street, Manchester, Lancashire, M4 6BB

Occupation Chief Executive Officer

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APPENDIX A

Plans

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Signed by:
Darren Whitaker
1D88AA491C12405...

KEY:

SITE BOUNDARY TAKEN FROM TPM DRAWING 2D-TPM-G710-PL-XX-4029 RECEIVED 16.05.23 AND UPDATED TO SUIT BACK OF FOOTWAY AND S278 WORKS

BASEMENT B1 EXTENTS (TAKEN FROM DRAWING 10364-ZD-SHP-G100-PL-B1-0001-P12)

PROPOSED SURFACE WATER DRAINAGE

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY ERRORS ON DRAWINGS SHALL BE BROUGHT TO ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE VERIFIED ON SITE.

Rev.	Description:	Date:	By:	Chkd:
P01	ISSUED FOR INFORMATION	31/07/24	CS	CG

curtins
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manchester@curtins.com
www.curtins.com

Status: STAGE 4

Project: TRINITY ISLANDS

Drg Title: PROPOSED SURFACE WATER OUTFALL SITE D1

Size:	Date:	Drawn By:	Checked By:
A1	30/07/24	CS	CG

Scale: 1:250

Project No: D1 - CUR - G58... Originator: ... Volume: ... Level: ... Category / Number: ... 02570 - P0...

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KEY:

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PROPOSED SURFACE WATER DRAINAGE

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY ERRORS ON DRAWINGS SHALL BE BROUGHT TO ATTENTION IMMEDIATELY. ALL DIMENSIONS TO BE VERIFIED ON SITE.

Rev.	Description:	Date:	By:	Chkd:
P01	ISSUED FOR INFORMATION	31/07/24	CS	CG

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Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
0161 236 2394
manchester@curtins.com
www.curtins.com

Status: STAGE 4

Project: TRINITY ISLANDS

Drg Title: PROPOSED SURFACE WATER OUTFALL SITE D2

Size:	Date:	Drawn By:	Chkd:
A1	30/07/24	CS	CG

Scale: 1:250

Project No: D2 - Originator: CUR - Volume: G58 - Level: XX - Type: DR - Role: C - Category / Number: 02571 - P0

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Scale **1:1250**
Administrative area **Greater Manchester : Manchester**

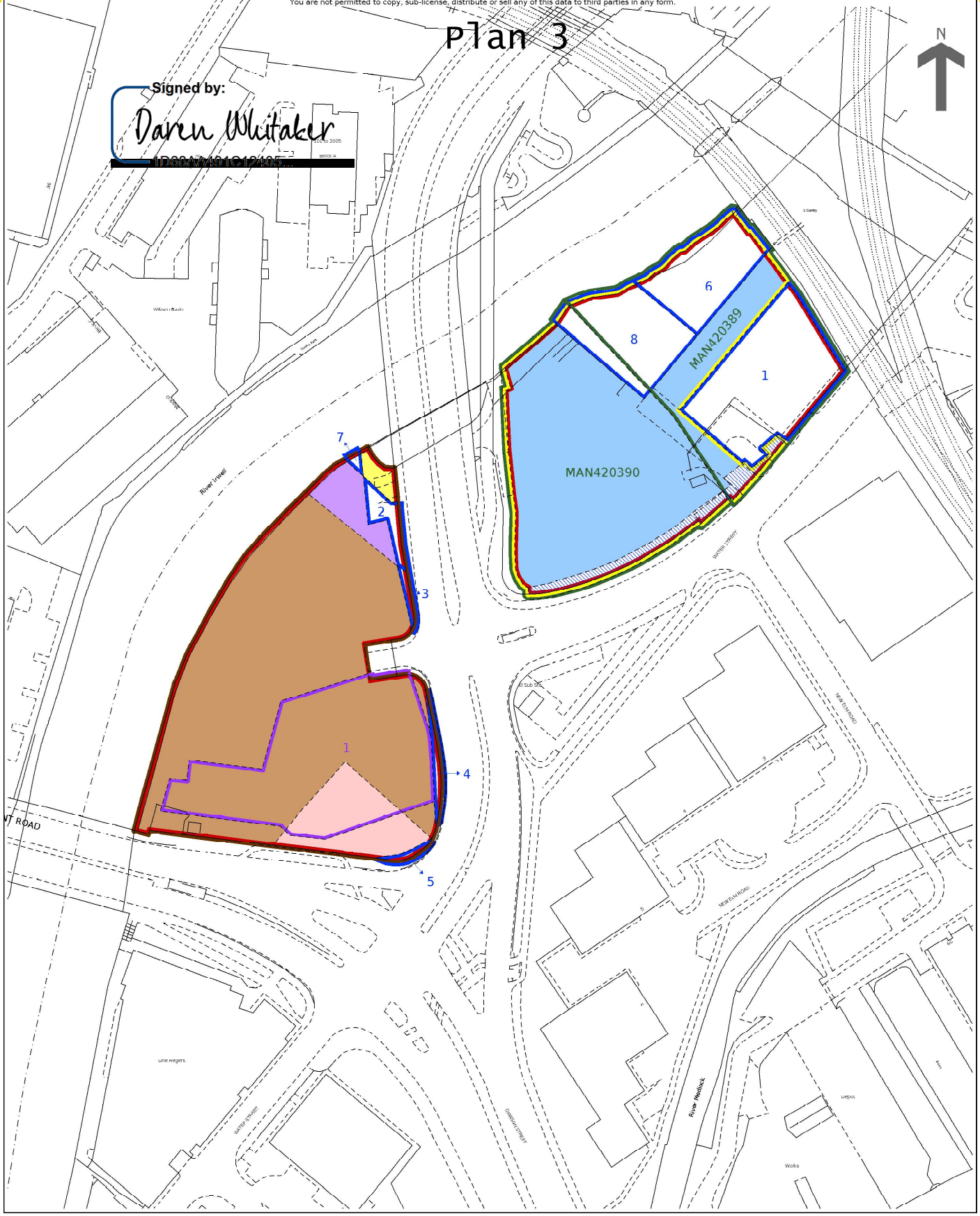
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Plan 3

Signed by:

Daren Whitaker

ID66AA191C12405...



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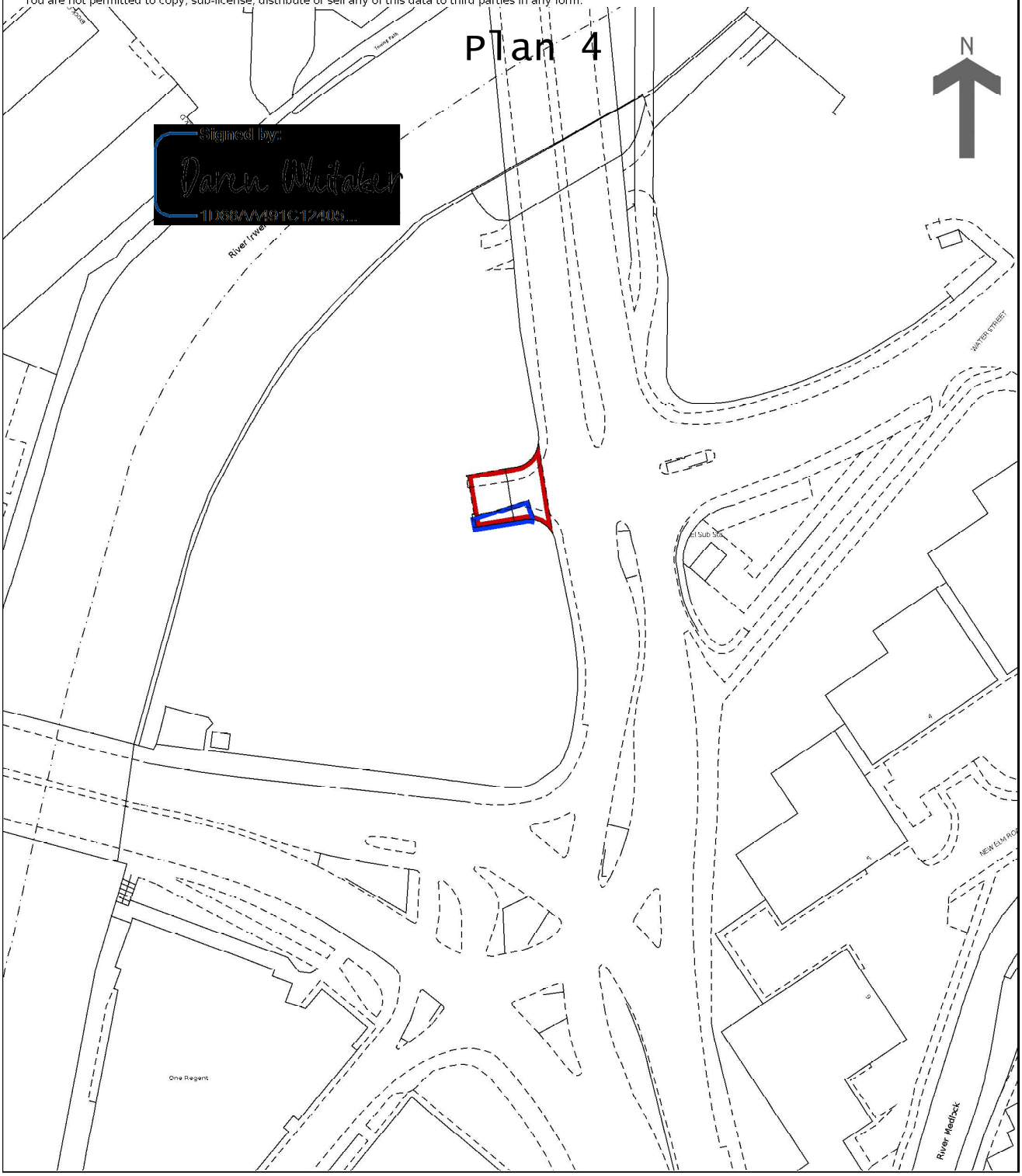
HM Land Registry
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Title number **MAN412084**
Ordnance Survey map reference **SJ8297NE**
Scale **1:1250**
Administrative area **Greater Manchester : Manchester**

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Plan 4

Signed by:
Darun Whitaker
1D68AA491C12405...



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HM Land Registry
Official copy of title plan

Title number **MAN420388**
Ordnance Survey map reference **SJ8297NE**
Scale **1:1250**
Administrative area **Greater Manchester : Manchester**

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Plan 5



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APPENDIX B

Deed of Covenant

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LAND LAW LLP

Dated **20[ ]**

[ ] **(1)**

[THE MANCHESTER SHIP CANAL COMPANY LIMITED] **(2)**

DEED OF COVENANT

relating to a Licence dated [ ] 20[21]
made between (1) The Manchester Ship Canal Company Limited
and (2) Trinity Developments (Manchester) Limited
for relating to Surface Water Drainage into the River Irwell for
Building [D1 / D2], Phase One, Trinity Islands, Water Street,
Manchester

Ref: ELH/100721.265

10-14 Market Street Altrincham Cheshire WA14 1QB
Tel: (0161) 928 8383 Fax: (0161) 928 8484
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A list of the members is available for inspection at the above office.

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THIS DEED dated the day of 20[ ]

is made **BETWEEN**

(1) [ ] (Company No. [ ]) whose registered office is at [ ] (the "**Covenantor**"); and

(2) [**THE MANCHESTER SHIP CANAL COMPANY LIMITED** (Company No. 7438096) whose registered office is at Maritime Centre, Port of Liverpool, Liverpool, Merseyside L21 1LA] (the "**Licensor**").

1. DEFINITIONS AND INTERPRETATION

1.1 In this Deed the following expressions will have the following meanings:

[**Covenantor's Land**	**[** **]** (and which land for the avoidance of doubt shall remain part of the Licensee's Land for the purposes of the Licence notwithstanding completion of the Disposal)**]**
Licence	relating to a Licence dated [ ] 20[21] made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Developments (Manchester) Limited [(the "**Original Licensee"**)]; [**DN**: include the definition of Original Licensee where the Licensee is a successor entity to the Original Licensee only]
Licensee	[ ] (Company No. [ ])
Licensee's Covenants	the covenants, agreements and conditions on behalf of the licensee as set out in the Licence;
[**Licensee's Land**	has the same meaning ascribed to it in the Licence;]
Permitted Disposal	has the same meaning ascribed to it in the Licence;
Rights	the licence and rights granted to the [Original] Licensee pursuant to clause 1 of the Licence; and
VAT	the tax payable in compliance with the provisions of the Value Added Tax Act 1994 on any relevant supply of goods or services made in the United Kingdom at the rate appropriate at the time of the relevant supply or any alternative or replacement tax (and whether payable as the result of an election or otherwise).

1.2 The expression the "Licensor" shall include its successors in title.

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1.3 Words importing one gender import any other gender words importing the singular import the plural and vice versa and any reference to a person includes a reference to a company authority board department or other body.

1.4 Any reference to a specific statute or statutory provision includes references to any statutory modification extension or re-enactment of such statute or statutory provision and to any regulations orders bye-laws or other subordinate legislation made under such statute or statutory provision from time to time.

1.5 If the Licensor or Covenantor is at any time more than one person their obligations shall be joint and several obligations of such person.

1.6 The clause headings do not form part of this Deed and shall not be taken into account in its construction or interpretation.

1.7 Any obligation on any party not to do, or omit to do anything includes an obligation not to allow that thing to be done by any employee, servant, agent, contractor, consultant or other person acting on that party's behalf or under that party's control.

1.8 If any provision or part-provision of this Deed is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part-provision under this clause shall not affect the validity and enforceability of the rest of this Deed.

2. RECITALS

2.1 The Licensee is the registered proprietor of the Licensee's Land.

2.2 The Licensee has the benefit of the Rights.

2.3 The Licensee intends to [[transfer the whole of its freehold interest] [together with a simultaneous assignment of the whole of [each of] its leasehold interest[s]] in the Licensee's Land to the Covenantor] [underlet to the Covenantor [the whole of the Licensee's Land] [the part of the Licensee's Land comprising the Covenantor's Land] (the "**Disposal**").

2.4 The Licensee intends, as part of the Disposal, to [assign] [share] the Rights [to] [with] the Covenantor and pursuant to the provisions of paragraph 1 of Schedule 2 of the Licence the Covenantor has agreed to covenant with the Licensor as set out in this Deed.

3. COVENANT

The Covenantor hereby covenants with the Licensor to observe and perform at all times from the date hereof the Licensee's Covenants [in so far as they relate to the Covenantor's Land] and (where a particular covenant or covenants can only be performed on a single occasion) in so far as they have not already been performed to the same extent as if the Covenantor were the party or parties to the Licence.

4. LAND REGISTRY RESTRICTION AND REGISTRATION

4.1 If as a result of the Covenantor's application to the Land Registry to register the Disposal (or at any other time during the Covenantor's ownership of the [lease of the] [Licensee's Land]

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[Covenantor's Land] the restriction referred to at paragraph 4 of Schedule 2 of the Licence is removed from the title register(s) to the Licensee's Land (whether in error or otherwise) then the Covenantor shall immediately (and in any event within five working days from becoming aware of the removal of the restriction) apply to the Land Registry at its own cost to have re-entered on the proprietorship register(s) of the Licensee's Land a restriction in the following form:

"No disposition of the registered estate by the proprietor of the registered estate, or by the proprietor of any registered charge, not being a charge registered before the entry of this restriction, is to be registered without a certificate signed a conveyancer that the provisions of paragraphs 1 and 2 of Schedule 2 of the Licence dated [ ] 20[ ] made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Developments (Manchester) Limited have been complied with or that they do not apply to the disposition".

4.2 The Covenantor shall promptly (and in any event within five working days) following completion of the application made pursuant to **clause 4.1** deliver to the Licensor official copies of the register(s) of title to the Licensee's Land (together with the title plan(s)) as evidence that the necessary entries have been made.

5. JURISDICTION

This Deed is governed by and construed in all respects in accordance with the laws of England.

6. THIRD PARTY RIGHTS

Save as expressly provided, none of the provisions of this Deed are intended to or will operate to confer any benefit (pursuant to the Contracts (Rights of Third Parties) Act 1999) on a person who is not named as a party to this Deed.

IN WITNESS whereof the parties hereto have executed this document as a Deed the day and year first before written

[**Insert Execution Block of Covenantor**]

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APPENDIX C

Mortgagee Deed of Covenant

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LAND LAW LLP

Dated **20[ ]**

[ ] **(1)**

[ ] **(2)**

[THE MANCHESTER SHIP CANAL COMPANY LIMITED] **(3)**

DEED OF COVENANT

relating to a Licence dated [ ] 20[ ]
made between (1) The Manchester Ship Canal Company Limited
and (2) Trinity Developments (Manchester) Limited
for relating to Surface Water Drainage into the River Irwell for
Building [D1 / D2], Phase One, Trinity Islands, Water Street,
Manchester

Ref: ELH/100721.265

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A list of the members is available for inspection at the above office.

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THIS DEED dated the day of 20[ ]

is made **BETWEEN**

(1) [ ] (Company No. [ ]) whose registered office is at [ ]] (the "**Covenantor**");

(2) [ ] (Company No. [ ]) whose registered office is at [ ]] (the "**Licensee**"); and

(3) [**THE MANCHESTER SHIP CANAL COMPANY LIMITED** (Company No. 7438096) whose registered office is at Maritime Centre, Port of Liverpool, Liverpool, Merseyside L21 1LA] (the "**Licensor**").

1. DEFINITIONS AND INTERPRETATION

1.1 In this Deed the following expressions will have the following meanings:

Licence	relating to a Licence dated [ ] 20[ ] made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Developments (Manchester) Limited [(the "**Original Licensee"**)]; [**DN**: include the definition of Original Licensee where the Licensee is a successor entity to the Original Licensee only]
Licensee's Land	has the same meaning ascribed to it in the Licence; and
Rights	the licence and rights granted to the [Original] Licensee pursuant to clause 4 of the Licence.

1.2 The expression "the Licensor" shall include its successors in title.

1.3 Words importing one gender import any other gender words importing the singular import the plural and vice versa and any reference to a person includes a reference to a company authority board department or other body.

1.4 Any reference to a specific statute or statutory provision includes references to any statutory modification extension or re-enactment of such statute or statutory provision and to any regulations orders bye-laws or other subordinate legislation made under such statute or statutory provision from time to time.

1.5 If the Licensor, Licensee or Covenantor is at any time more than one person their obligations shall be joint and several obligations of such person.

1.6 The clause headings do not form part of this Deed and shall not be taken into account in its construction or interpretation.

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1.7 Any obligation on any party not to do, or omit to do anything includes an obligation not to allow that thing to be done by any employee, servant, agent, contractor, consultant or other person acting on that party's behalf or under that party's control.

1.8 If any provision or part-provision of this Deed is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part-provision under this clause shall not affect the validity and enforceability of the rest of this Deed.

2. RECITALS

2.1 The Licensee is the registered proprietor of the Licensee's Land.

2.2 The Licensee's Land has the benefit of the Rights.

2.3 The Licence contains a covenant on the Licensee not to mortgage or charge the Licensee's Land or any part of it without the mortgagee or chargee first entering into a deed of covenant on the terms of this Deed.

2.4 The Licensee intends to grant a legal charge of [the whole] [part] of the Licensee's Land to the Covenantor (the "**Charge**") and pursuant to the provisions of paragraph 2 of Schedule 1 of the Licence the Covenantor has agreed to covenant with the Licensor as set out in this Deed.

3. COVENANT

The Covenantor hereby covenants with the Licensor:

3.1 that it will not exercise any power of sale or leasing in respect of the Licensee's Land or any part except to a person who enters into a deed of covenant, in favour of the Licensor in the form attached at Appendix B to the Licence, in which that person covenants to comply with the obligations on the part of the Licensee contained in the Licence; and

3.2 that it will hereafter comply with the obligations on the part of the Licensee contained in the Licence (Provided That such covenant shall not be binding until such time as the Covenantor takes possession of the Licensee's Land or enforces its security by foreclosure or exercises a power of sale in respect of the Licensee's Land).

4. JURISDICTION

This Deed is governed by and construed in all respects in accordance with the law of England and Wales.

5. THIRD PARTY RIGHTS

Save as expressly provided, none of the provisions of this Deed are intended to or will operate to confer any benefit (pursuant to the Contracts (Rights of Third Parties) Act 1999) on a person who is not named as a party to this Deed.

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IN WITNESS whereof the parties hereto have executed this document as a Deed the day and year first before written

[Insert Covenantor Execution Block]

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APPENDIX D

Form of Warranty

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Dated 2024

1) CURTINS CONSULTING LIMITED

as Consultant

2) [ ]

as Beneficiary

3) RENAKER BUILD LIMITED

as Contractor

Deed of Collateral Warranty

Consultant

In favour of [ ]

Relating to a development at [ ]

#15570716v1

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MEMORANDUM

Date of this Deed	
Consultant	**CURTINS CONSULTING LIMITED**, a company incorporated and registered in England and Wales with company number 02054159 whose registered office is at 51-55 Tithebarn Street, Liverpool, England, L2 2SB.
Contractor	**RENAKER BUILD LIMITED** a company incorporated and registered in England and Wales with company number 06600257 whose registered office is at 1st Floor, Nq Building 47 Bengal Street, Manchester, Lancashire, M4 6BB.
Beneficiary	**[ ]**
Consultant's Profession	Below ground drainage
Development	[ ]
Site	[ ]
Date of Appointment	**[**]
Beneficiary's Interest	[ ]
Clause 3: Professional Insurance	Limit of indemnity: not less than £10,000,000 (five million pounds sterling) for any one claim and unlimited in the period of insurance, but subject to separate aggregate limits of indemnity for all claims in the period relating to pollution, contamination, fire safety notifications and asbestos.

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PARTIES:

(1) The Consultant

(2) The Beneficiary

(3) The Contractor

BACKGROUND:

(A) The Contractor and the Consultant have entered into an appointment ("**Appointment**") under which the Consultant has agreed to perform certain services ("**Services**") and to perform certain other obligations in connection with the Development (which expression includes the Site and the works ("**Works**") constructed or to be constructed on or adjacent to the Site or either of them as the case requires).

It is agreed in consideration of the sum of £1.00 paid by the Beneficiary, receipt of which the Consultant acknowledges, as follows:

1. Duty of Care

1.1 The Consultant warrants to the Beneficiary that it has performed and/or subject to the terms of the Appointment shall perform the Services and its other obligations under the Appointment, and that in doing so it has used and/or shall use the professional skill and care and diligence reasonably to be expected of suitably qualified and experienced consultants undertaking services and other duties similar to those to be performed under the Appointment in relation to projects similar in scale, character and complexity to the Development.

2. Prohibited Material

2.1 Without prejudice to clause 1, the Consultant warrants and undertakes to the Beneficiary that, in exercising the standard of care set out in clause 1 and to the extent that it is obliged to select and/or approve substances or materials for use in the Development, it will not specify for use, and not approve the use in the Development of any materials which by their nature or application contravene any British Standard or EU equivalent at the time of specification, or which contravene the recommendations of The British Council for Offices publication *Good Practice in the Selection of Construction Materials (2011)* or which are generally considered to be deleterious within the building design professions in the UK.

3. Professional Indemnity Insurance

3.1 The Consultant warrants to the Beneficiary that there is in force a policy of professional indemnity insurance covering the liabilities of the Consultant for negligence under the Appointment and this Deed, conforming to the relevant requirements specified in the Memorandum. The Consultant agrees to maintain such insurance at all times until 11 years after the practical completion of the Development (or if sooner until 11 years after the termination of the employment of the Consultant under the Appointment), provided such insurance is available on commercially reasonable terms having regard (inter alia) to premiums required and policy terms obtainable.

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3.2 If for any period such insurance is not available on commercially reasonable terms, the Consultant shall forthwith inform the Beneficiary, and shall obtain in respect of such period such reduced level of professional indemnity insurance as is available and as would be fair and reasonable in the circumstances for the Consultant to obtain.

3.3 Whenever reasonably required to do so by the Beneficiary, the Consultant shall provide to the Beneficiary documentary evidence that the insurance required under this Deed is being maintained.

4. Substitution Provisions

4.1 The Consultant warrants to the Beneficiary that the Consultant shall not terminate or treat as terminated the Appointment, or discontinue the performance of any of the Services, without first giving to the Beneficiary not less than 28 days' prior notice of the Consultant's intention to do so, specifying the grounds for so doing.

4.2 If the Beneficiary serves on the Consultant a notice in accordance with clause 4.3, the Consultant shall not terminate or treat as terminated the Appointment or discontinue the performance of any of the Services, but service of such notice shall not prejudice any other right or remedy the Consultant may have under the Appointment or may acquire by reason of any breach of the obligations of the Beneficiary or its appointee under this clause 4.

4.3 Unless the employment of the Consultant shall have terminated previously (and whether or not the Consultant shall have served notice on the Beneficiary pursuant to clause 4.1), if the Beneficiary serves upon the Consultant a notice to do so, the Consultant shall thereafter accept the instructions of the Beneficiary or its appointee to the exclusion of the Contractor under the Appointment.

4.4 As against the Contractor and the Beneficiary the Consultant shall be entitled and obliged to rely upon and to comply with such notice served by the Beneficiary under clause 4.3, and shall not make any enquiry into the entitlement of the Beneficiary as against the Contractor to serve such notice.

4.5 As from the date of service of notice under clause 4.3, the Beneficiary or its appointee shall assume all the rights and perform all the obligations of the Contractor under the Appointment, provided that this shall not affect or derogate from any right of action the Contractor may have against the Consultant in respect of any breach of duty of the Consultant under or in connection with the Appointment happening prior to the date of service of notice by the Beneficiary under clause 4.3.

4.6 Within 21 days after serving notice under clause 4.3, the Beneficiary shall pay to the Consultant an amount equal to the fees and disbursements then owing to the Consultant under the Appointment.

4.7 If the employment of the Consultant under the Appointment is terminated before service of any notice under clause 4.3, then if required to do so by notice served by the Beneficiary not later than 11 weeks after the date of such termination, the Consultant shall enter into a new agreement with the Beneficiary or its appointee on the same terms as the Appointment but

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with such revisions as the Beneficiary shall reasonably require to reflect altered circumstances. Forthwith upon the execution of such new agreement, the Beneficiary shall pay to the Consultant an amount equal to the fees and disbursements (excluding cancellation fees) then owing to the Consultant under the Appointment.

4.8 Upon payment by the Beneficiary in accordance with clause 4.6 or 4.7 of an amount equal to the fees and disbursements owed by the Contractor, the Consultant shall assign to the Beneficiary all the Consultant's rights against the Contractor in respect of such unpaid fees and disbursements, and shall pay to the Beneficiary any of the same subsequently received by the Consultant from the Contractor.

4.9 The Beneficiary guarantees to the Consultant the performance of the obligations of any appointee of the Beneficiary nominated under clause 4.3 or 4.7.

4.10 In the event that more than one party has the benefit of similar rights of substitution granted by the Consultant in respect of the Development, the order of priority between the Beneficiary and any other parties shall be:

(a) the Beneficiary;

(b) any other beneficiary.

4.11 The Contractor agrees to the foregoing provisions of this clause 4 and agrees to be bound by them.

5. Assignment

5.1 The Beneficiary may assign all of its rights under this Deed:

5.1.1 by absolute assignment to any Group Company of the Beneficiary; and

5.1.2 by absolute assignment on two other occasions only.

5.2 If the interest of the Beneficiary in the Development is as trustee, it may also assign its rights under this Deed to another trustee of the same trust.

5.3 In this Deed references to the Beneficiary include where the context admits its permitted assignees, but not so as to permit more than two assignments under clause 5.1.2.

5.4 The Consultant shall not be entitled to contend that any person to whom this Deed is assigned in accordance with clause 5.1 is precluded from recovering under this Deed any loss incurred by such assignee resulting from any breach of this Deed, (whenever happening) by reason that such person is an assignee and not a named promisee hereunder.

6. Copyright

6.1 The Consultant grants to the Beneficiary an irrevocable, non-exclusive royalty-free licence to use and reproduce any drawings, calculations, specifications and/or other documents produced by the Consultant under the Appointment and any designs contained in them ("**Documents**") for any purpose connected with the Development (other than by the

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reproduction of any such designs in any extension to the Development) and to grant sub-licences in the terms of this licence, but copyright in the Documents shall remain vested in the Consultant. The Consultant will not be liable for any use of the Documents for any purposes other than those for which the same are or were produced. The Beneficiary shall on written request and upon paying a reasonable copying charge, be entitled to be supplied by the Consultant with full and proper copies of the Documents.

6.2 The Consultant warrants to the Beneficiary that the use of the Documents for the purposes of the Development will not infringe the rights of any third person.

6.3 The Consultant agrees to waive any right to be identified as author of the Documents in accordance with section 77, Copyright Designs and Patents Act 1988 and any right not to have the Documents subjected to derogatory treatment in accordance with section 80 of that Act as against the Beneficiary or any licensee or assignee of the Beneficiary.

7. Extraneous Rights

7.1 This Deed shall not negate or diminish any duty or liability otherwise owed by the Consultant to the Beneficiary.

7.2 No approval or inspection of the Development or of any designs or specifications and no testing of any work or materials by or on behalf of the Beneficiary and no omission to inspect or test shall negate or diminish any duty or liability of the Consultant arising under this Deed and the Beneficiary will be deemed to have acted in reliance upon the Consultant complying with his obligations hereunder.

7.3 The liability of the Consultant under this Deed shall be no greater than it would have been if the Beneficiary had been named jointly with the Contractor as the client under the Appointment and the Consultant shall be entitled in any action or proceedings by the Beneficiary to rely on any limitation in the Appointment and to raise the equivalent rights in defence of liability (save in respect of any rights of counterclaim or set-off) as it would have against the Contractor under the Appointment.

8. Contracts (Rights of Third Parties) Act 1999

8.1 This Deed is not intended to confer any rights on any third party pursuant to the Contracts (Rights of Third Parties) Act 1999.

9. Expiry of Warranty

9.1 No action or proceedings shall be commenced against the Consultant under this Deed more than 11 years after the practical completion of the Development (or, if earlier, more than 11 years after the employment of the Consultant under the Appointment is terminated) except in respect of any action or proceedings issued prior to that date provided that this shall not apply where and to the extent that the Beneficiary suffers or incurs any loss or liability as consequence of or that is recoverable under the Defective Premises Act 1972 or the Building Act 1984 that extends or imposes liability up and until a later date than the period set out in

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this clause 9.1 and in which case no action or proceedings in respect of such loss or liability shall be commenced after such later date.

10. Service of Notice

10.1 Any notice to be served under this Deed must be in writing and must be served by hand or by recorded delivery, and in the case of a corporation must be served at its registered office for the time being. In any other case notice may be served at any address for the time being of the person to be served. Service shall take effect, if given by hand, on the date of delivery. If given by post, it shall take effect 2 days after posting, excluding Saturdays, Sundays and statutory holidays.

11. Governing law and interpretation

11.1 The law of this Deed is English law and the English courts shall have jurisdiction with regard to all matters arising under it.

11.2 The Memorandum is part of this Deed and the definitions given in the Memorandum and in the Background apply to this Deed.

11.3 In this Deed:

11.3.1 **Group Company** means any subsidiary company or holding company of the Beneficiary, or another subsidiary or holding company of such company, as subsidiary and holding company are defined section 1159, Companies Act 2006 (as amended);

11.3.2 **Purchaser** means a person having or acquiring a freehold interest in the Development or any part of it, and includes a purchaser for a capital consideration of a leasehold interest (excluding individual residential purchasers); and

11.3.3 **Tenant** means a person having or acquiring a leasehold interest in the Development or any part of it (other than a Purchaser) (excluding individual residential tenants).

11.4 In this Deed:

11.4.1 **Development** includes part of the Development;

11.4.2 **person** includes a firm and any entity having legal capacity;

11.4.3 any term importing gender shall include any gender;

11.4.4 any term importing the singular includes the plural and vice versa; and

11.4.5 any reference to any clause is a reference to such clause of this Deed.

11.5 Clause headings do not form part of or affect the interpretation of this Deed.

11.6 Where the Consultant is a Partnership references in this deed to "the Consultant" shall be deemed to include reference to each and every present and future partner of such partnership and the liability of each and every such partner under this Deed shall be deemed to be joint and several.

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Executed and delivered as a deed:

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EXECUTED as a **DEED** by **CURTINS CONSULTING LIMITED**
acting by a director in the presence of:

……

Signature of director

Signature of witness ……

Print name ……

Address ……

……

……

Occupation.....]

EXECUTED as a **DEED** by **RENAKER BUILD LIMITED** acting by
a director in the presence of:

……

Signature of director

Signature of witness ……

Print name ……

Address ……

……

……

Occupation ……

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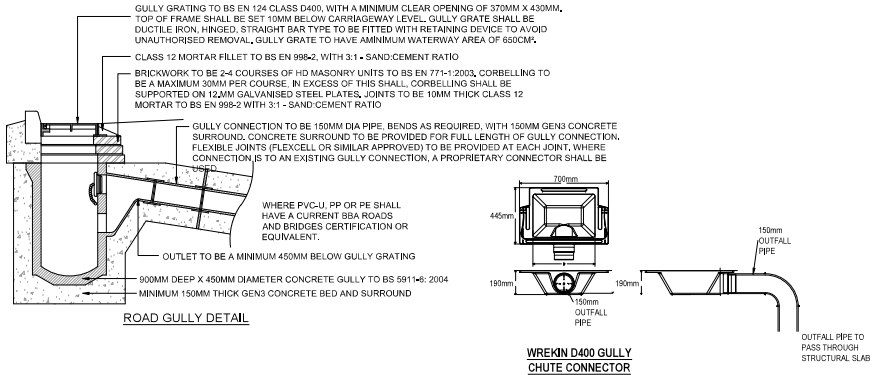
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APPENDIX E

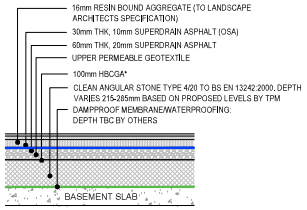
Discharge Application

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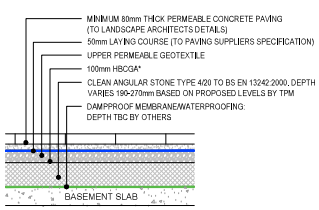
ROAD GULLY DETAIL

WREKIN D400 GULLY CHUTE CONNECTOR



PERMEABLE RESIN BOUND AREA (LIGHT VEHICLE LOADING)

* HBCGA refers to hydraulically bound coarse-graded aggregate (conforming to BS EN 14227-1:2013), minimum cement content 3%, strength class C5/6 as defined in BS EN 14227-1 and minimum permeability 10,000 mm/hr when tested in accordance with ASTM C1701M-09 or other suitable test).

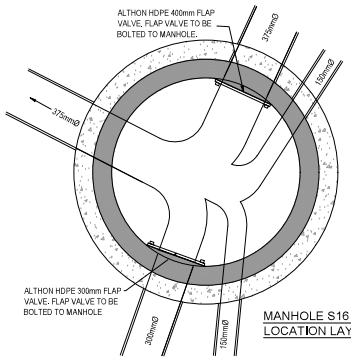


PERMEABLE CONCRETE BLOCK (LIGHT VEHICLE LOADING)

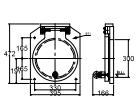
SCALE 1:20

* HBCGA refers to hydraulically bound coarse-graded aggregate (conforming to BS EN 14227-1:2013), minimum cement content 3%, strength class C5/6 as defined in BS EN 14227-1 and minimum permeability 10,000 mm/hr when tested in accordance with ASTM C1701M-09 or other suitable test).

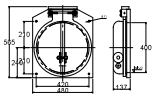
SUBJECT TO FINAL COORDINATION WITH EXTERNAL WORKS BUILD UP DESIGN



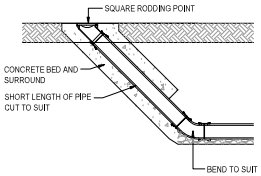
MANHOLE S16 FLAP VALVE LOCATION LAYOUT DETAIL



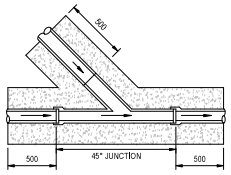
ALTHON HDPE 300mm FLAP VALVE
Material: HDPE, SS316, EPDM
Opening: ø300mm
Max load from bottom invert level (B.I.L):
1.3MWC long period (=50 years)
5MWC short period (=72hours)
Number of chemical anchors M8: 4 pieces
All dimensions in mm



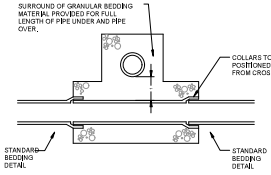
ALTHON HDPE 400mm FLAP VALVE
Material: HDPE, SS316, EPDM
Opening: ø400mm
Max load from bottom invert level (B.I.L):
1.4MWC long period (=50 years)
5MWC short period (=72hours)
Number of chemical anchors M8: 4 pieces
All dimensions in mm



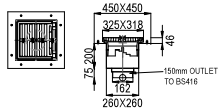
RODDING POINT DETAIL (RE)



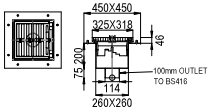
TYPICAL SADDLE CONNECTION



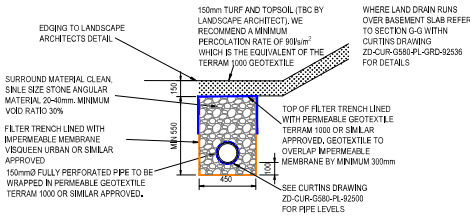
PIPE CROSSINGS DETAIL



WADE F306 GULLY WITH CAST IRON BODY AND SHERARDIZED DUCTILE IRON HINGED GRATING



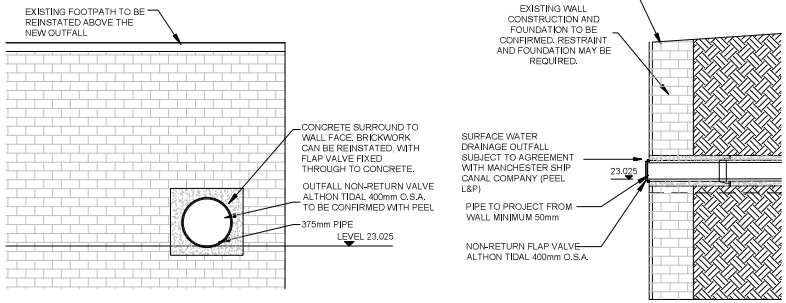
WADE F304 GULLY WITH CAST IRON BODY AND SHERARDIZED DUCTILE IRON HINGED GRATING



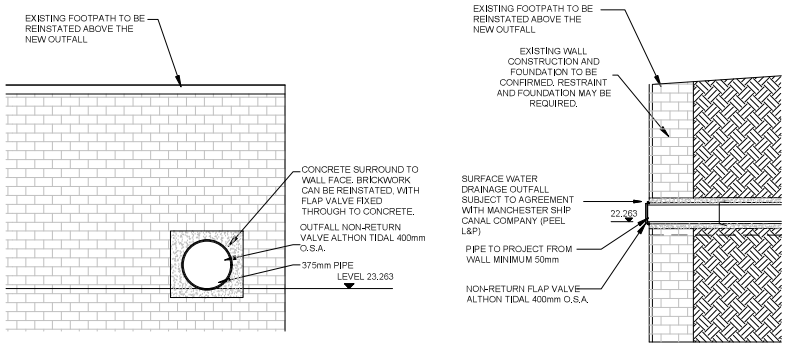
TYPICAL FILTER STRIP DETAIL

GEOTEXTILE USED IS TERRAM 1000 (PERMEABILITY 90l/s/m²) PERCOLATION INTO THE FILTER STRIP IS BASED ON THE PERMEABILITY OF THE TERRAM 1000 AS THIS IS THE LIMITIN FACTOR.

IF AN ALTERNATIVE PRODUCT IS PROPOSED, THE PERMEABILITY WILL NEED TO BE CHECKED TO CONFIRM.



OUTFALL 1 DETAILS
(SCALE 1:20)
SUBJECT TO AGREEMENT WITH PEEL



OUTFALL 2 DETAILS
(SCALE 1:20)
SUBJECT TO AGREEMENT WITH PEEL

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ATTENTION IMMEDIATELY. ALL DIMENSIONS TO BE VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. SULPHATE RESISTANT CEMENT DC2 AND PRECAST CONCRETE PRODUCTS MUST BE USED WHERE SULPHATE FOUND, OR WHERE NO SULPHATES THEN C28- GEN 3

Rev:	Description:	Date:	By:	Chkd:
P05	STAGE 4 UPDATE	30.06.23	CS	CG
P04	STAGE 4 UPDATE	28.04.23	CS	CG
P03	STAGE 4 ISSUE	20.01.23	CS	CG
P02	PERMEABLE DETAILS ADDED	28.07.22	CS	CG
P01	ISSUED FOR INFORMATION	05.07.22	CS	CG

curtins
Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
0161 236 2394
manchester@curtins.com
www.curtins.com

Status: STAGE 4

Project: TRINITY ISLANDS

Drg Title: DRAINAGE DETAILS SHEET 2

Size:	Date:	Drawn By:	Chkd:
A1	21/06/22	CS	CG

Scale: 1:20

Project No: | Originator: | Zone: | Level: | Category / Number:

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APPENDIX F

D2 DEED OF COVENANT

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LAND LAW LLP

Dated **20[ ]**

TRINITY ISLANDS D2 INVESTMENTS LIMITED **(1)**

THE MANCHESTER SHIP CANAL COMPANY LIMITED **(2)**

DEED OF COVENANT

relating to a Licence dated [ ] 2024
made between (1) The Manchester Ship Canal Company Limited and
(2) Trinity Developments (Manchester) Limited
for relating to Surface Water Drainage into the River Irwell for Tower D1 and Tower D2, Phase One,
Trinity Islands, Water Street, Manchester

Ref: [ ]

10-14 Market Street Altrincham Cheshire WA14 1QB
Tel: (0161) 928 8383 Fax: (0161) 928 8484
land.law

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A list of the members is available for inspection at the above office.

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THIS DEED dated the day of 20[ ]

is made **BETWEEN**

(1) TRINITY ISLANDS D2 INVESTMENTS LIMITED (Company No. 14202012) whose registered office is at 1st Floor Nq Building, 47 Bengal Street, Manchester, United Kingdom, M4 6BB (the "**Covenantor**"); and

(2) THE MANCHESTER SHIP CANAL COMPANY LIMITED (Company No. 7438096) whose registered office is at Maritime Centre, Port of Liverpool, Liverpool, Merseyside L21 1LA (the "**Licensor**").

1. DEFINITIONS AND INTERPRETATION

1.1 In this Deed the following expressions will have the following meanings:

Covenantor's Land	the leasehold land registered at the Land Registry under title number MAN420388 shown edged red on Plan 1 attached which forms part of the Licensee's Land
D2 Outfall	has the same meaning ascribed to it in the Licence
Excluded Covenants	clauses 6, 7.2,7.15, 7.16, 7.17, 7.19, 7.20, 7.21, , 7.25, 7.26, 7.27, Schedule 1 and Schedule 3 of the Licence
Licence	relating to a licence dated [ ] 2024 made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Developments (Manchester) Limited
Licensee	Trinity Developments (Manchester) Limited (Company No. 11381019)
Licensee's Covenants	the covenants, agreements and conditions on behalf of the licensee as set out in the Licence save for the Excluded Covenants;
Licensee's Land	has the same meaning ascribed to it in the Licence;
Permitted Disposal	each of the following: a. the grant of a lease of an apartment forming part of a block of apartments within the Covenantor's Land; b. the grant a lease of a car parking space within the Covenantor's Land; c. the grant a lease of a stand alone commercial unit or a commercial unit forming part of a block

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of apartments with ancillary commercial units;

d. the grant an easement (other than for drainage to the River);

e. the disposal of part or parts of the Covenantor's Land upon which an electricity sub-station, gas generation or pumping station or other statutory services or infrastructure have been or are to be constructed or installed and the immediate curtilage of the same together with ancillary easements in each case (save where relating to the drainage of Surface Water to the River); and/or

f. the disposal of part of the Covenantor's Land by way of transfer of the freehold or the grant of a lease for the dedication of highway or of public open space pursuant to Section 106 of the Town and Country Planning Act 1990 or sections 38 or 278 of the Highways Act 1980;

Rights	the licence and rights granted to the Licensee pursuant to clause 1 of the Licence; and
VAT	the tax payable in compliance with the provisions of the Value Added Tax Act 1994 on any relevant supply of goods or services made in the United Kingdom at the rate appropriate at the time of the relevant supply or any alternative or replacement tax (and whether payable as the result of an election or otherwise).

1.2 The expression the "Licensor" shall include its successors in title.

1.3 Words importing one gender import any other gender words importing the singular import the plural and vice versa and any reference to a person includes a reference to a company authority board department or other body.

1.4 Any reference to a specific statute or statutory provision includes references to any statutory modification extension or re-enactment of such statute or statutory provision and to any regulations orders bye-laws or other subordinate legislation made under such statute or statutory provision from time to time.

1.5 If the Licensor or Covenantor is at any time more than one person their obligations shall be joint and several obligations of such person.

1.6 The clause headings do not form part of this Deed and shall not be taken into account in its construction or interpretation.

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1.7 Any obligation on any party not to do, or omit to do anything includes an obligation not to allow that thing to be done by any employee, servant, agent, contractor, consultant or other person acting on that party's behalf or under that party's control.

1.8 If any provision or part-provision of this Deed is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part-provision under this clause shall not affect the validity and enforceability of the rest of this Deed.

1.9 Any defined terms contained in this deed which are not contained within clause 1.1 shall have the meaning given to them in the Licence

2. RECITALS

2.1 The Licensee is the registered proprietor of the Licensee's Land.

2.2 The Licensee has the benefit of the Rights.

2.3 The Covenantor is the registered proprietor of the Covenantor's Land.

2.4 The Licensee intends to share the Rights with the Covenantor and the Covenantor has agreed to covenant with the Licensor as set out in this Deed.

3. COVENANT

3.1 The Covenantor hereby covenants with the Licensor to observe and perform at all times from the date hereof the Licensee's Covenants in so far as they relate to the Covenantor's Land or the D2 Outfall and (where a particular covenant or covenants can only be performed on a single occasion) in so far as they have not already been performed to the same extent as if the Covenantor were the party or parties to the Licence.

3.2 The Covenantor covenants with the Licensor not to dispose of the Covenantor's Land or any part of it (other than by way of Permitted Disposal or a charge or mortgage) without first procuring that the relevant disponee delivers a direct deed of covenant in favour of the Licensee where by the proposed disponee covenants to be bound by the terms of this deed in relation to the relevant land and/or interest so disposed of together with written confirmation from or for and on behalf of the relevant disponee that the said deed is unconditionally and irrevocably released to the Licensor for completion.

3.3 In the event that the Licensor has exercised its step in rights contained in clause 7.3 of the Licence and the Licensee in breach of the Licence has failed to repay the Licensor for the costs it has incurred within the specified timescales then Covenantor covenants with the Licensor to pay to the Licensor a fair proportion of the costs incurred by the Licensor in so far as they relate to the D2 Outfall within 10 working days of written demand.

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4. LAND REGISTRY RESTRICTION AND REGISTRATION

4.1 The Covenantor shall apply to the Land Registry at its own cost to enter on the proprietorship registers of the Covenantor's Land a restriction in the following form:

"No disposition of the registered estate by the proprietor of the registered estate, or by the proprietor of any registered charge, not being a charge registered before the entry of this restriction, is to be registered without a certificate signed a conveyancer that the provisions of paragraph 3.2 of the deed of covenant dated [ ] 20[ ] made between (1) The Manchester Ship Canal Company Limited and (2) Trinity Islands D2 Investments Limited have been complied with or that they do not apply to the disposition".

4.2 The Covenantor shall promptly (and in any event within five working days) following completion of the application made pursuant to **clause 4.1** deliver to the Licensor official copies of the register of title to Covenantor's Land (together with the title plan(s)) as evidence that the necessary entries have been made.

5. JURISDICTION

This Deed is governed by and construed in all respects in accordance with the laws of England.

6. THIRD PARTY RIGHTS

Save as expressly provided, none of the provisions of this Deed are intended to or will operate to confer any benefit (pursuant to the Contracts (Rights of Third Parties) Act 1999) on a person who is not named as a party to this Deed.

IN WITNESS whereof the parties hereto have executed this document as a Deed the day and year first before written

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Executed as a **Deed** by)
TRINITY ISLANDS D2
INVESTMENTS LIMITED)
acting by a director in the presence)
of a witness:)

.....
Director

Witness

Signature .....

Name (print) .....

Address.....

.....

Occupation .....

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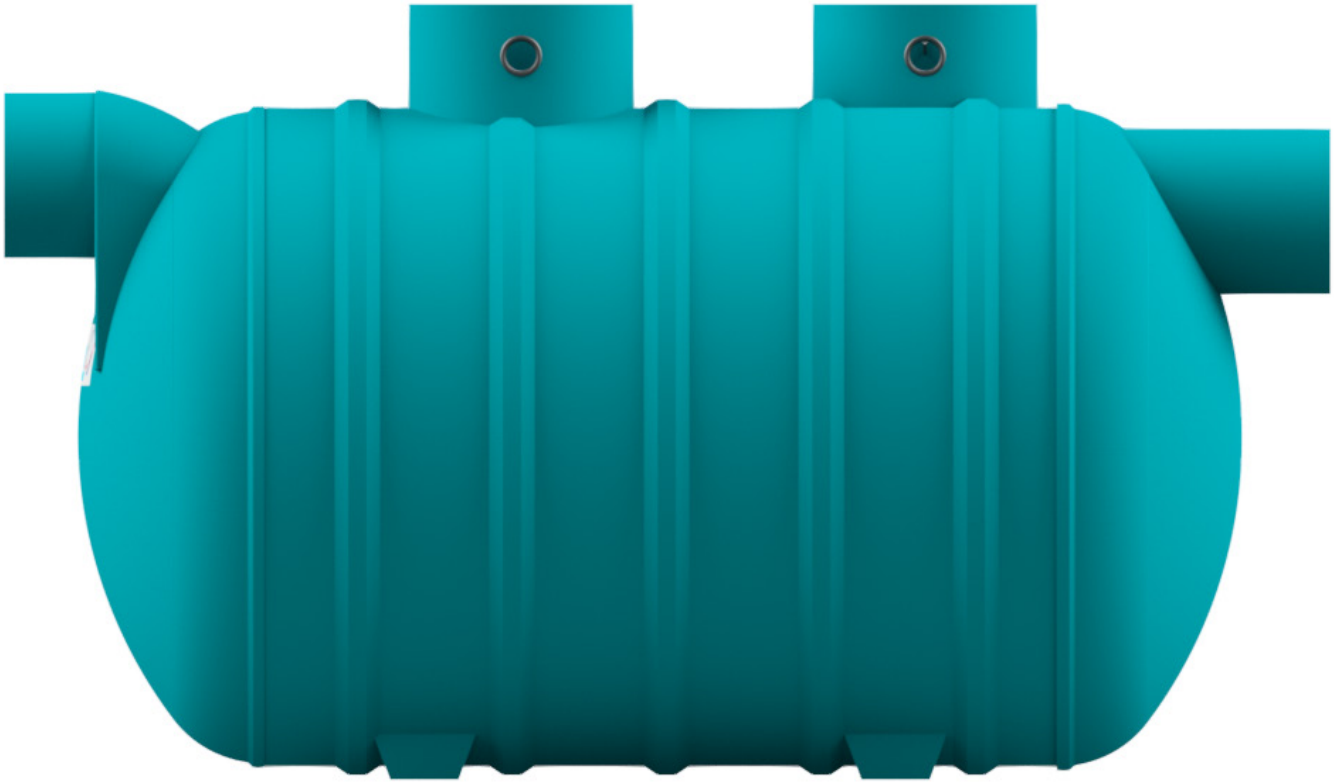
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Appendix C

SPEL Petrol Interceptor Manufacturers Information

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SPEL
Life in Water



SPEL Stormceptor®

Class 1 Bypass Separator

Operation & Maintenance Manual

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SPEL Stormceptor® Operation & Maintenance

Introduction

With correct and consistent care, and by following a few simple guidelines, your system will give you many years of dependable service.

BS EN 858 CERTIFIED | 25 YEAR TANK SHELL WARRANTY | IN EXCESS OF 50 YEAR TANK SHELL LIFE EXPECTANCY

Installation

For installation guidance, see SPEL Data Manual, Section 7.

All applicable health and safety regulations must be followed.

IMPORTANT

In the unlikely event of the chamber having to be entered ensure absolutely that all Workplace Health & Safety directives and Confined Space Regulations are strictly adhered to.

SPELGuard Maintenance Available:

SPEL offer technical support, site visits, commissioning and servicing/maintenance on equipment.
Contact the SPEL technical team:

01743 445 200 | **sales@spelproducts.co.uk** | **spelproducts.co.uk**

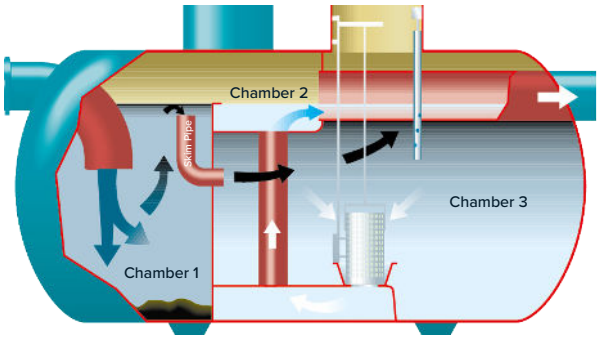
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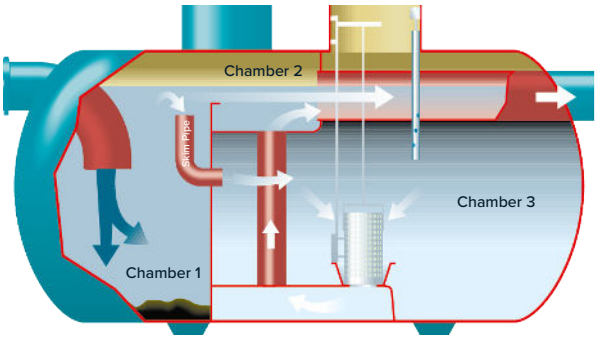
SPEL Stormceptor® Class 1 Bypass Separator

Operation

The SPEL Stormceptor® Bypass Separator is designed to treat up to the 1 in 1 year return storm event with the excess flow being allowed to bypass the treatment stage (see diagrams below). Engineers will have specified our SPEL Stormceptor® Bypass Separator to cope with and treat the flow from the connected catchment area, with the complete operation being contained within the SPEL system.

The installation of your SPEL Stormceptor® should have included commissioning by a qualified person, SPEL can offer a full commissioning service and/or a post-commissioning system check, together with relevant certification.





Flows according to nominal size (NSB)

The polluted surface water first enters the primary chamber where silt settles out and is retained. The fuel, oil and other pollutants lighter than water, rise to the surface and are efficiently skimmed off and transferred to the separation chamber.

In normal conditions all the flow is through the separation chamber, where the quiescent conditions allow the pollutants to separate out efficiently. Water from the cleanest zone in the separation chamber flows through a coalescer unit, to remove smaller globules of oil, up to the junction chamber and thence to the outlet

Storm flows above NSB

During a storm the level in the primary chamber rises and the stormwater passes over the weir into the junction chamber and to the outlet.

The design keeps the turbulence within the separation chamber to a minimum which avoids disturbing the contaminants retained.

Chamber 1

The inlet connects directly into chamber 1 - the primary chamber where silt and other heavy pollutants are deposited and light liquids are skimmed off to be transferred to the main separation chamber, chamber 3.

Maintenance requires the removal of accumulated silt and other heavy pollutants, checking the skim pipe is not blocked and removing floating debris.

Chamber 2

This is the junction chamber where the clean water passing out of the main separation chamber and the storm flow over the weir from the primary chamber meet and pass to the outlet. This chamber is an approved sampling point if samples are required for analysis. As it is mainly clean water passing through the chamber, maintenance is confined to checking the weir plate is free of debris.

Chamber 3

The main separation chamber is where the light liquids are retained and, in the case of SPEL Stormceptor® Separators, where the coalescer units are incorporated.

The coalescer units should be removed and cleaned in accordance with the requirements set out on Page 5.

Retained light liquids should be removed from the top and any sediment from the bottom. Smaller Bypass separators generally need to be completely emptied.

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SPEL Stormceptor® Class 1 Bypass Separator

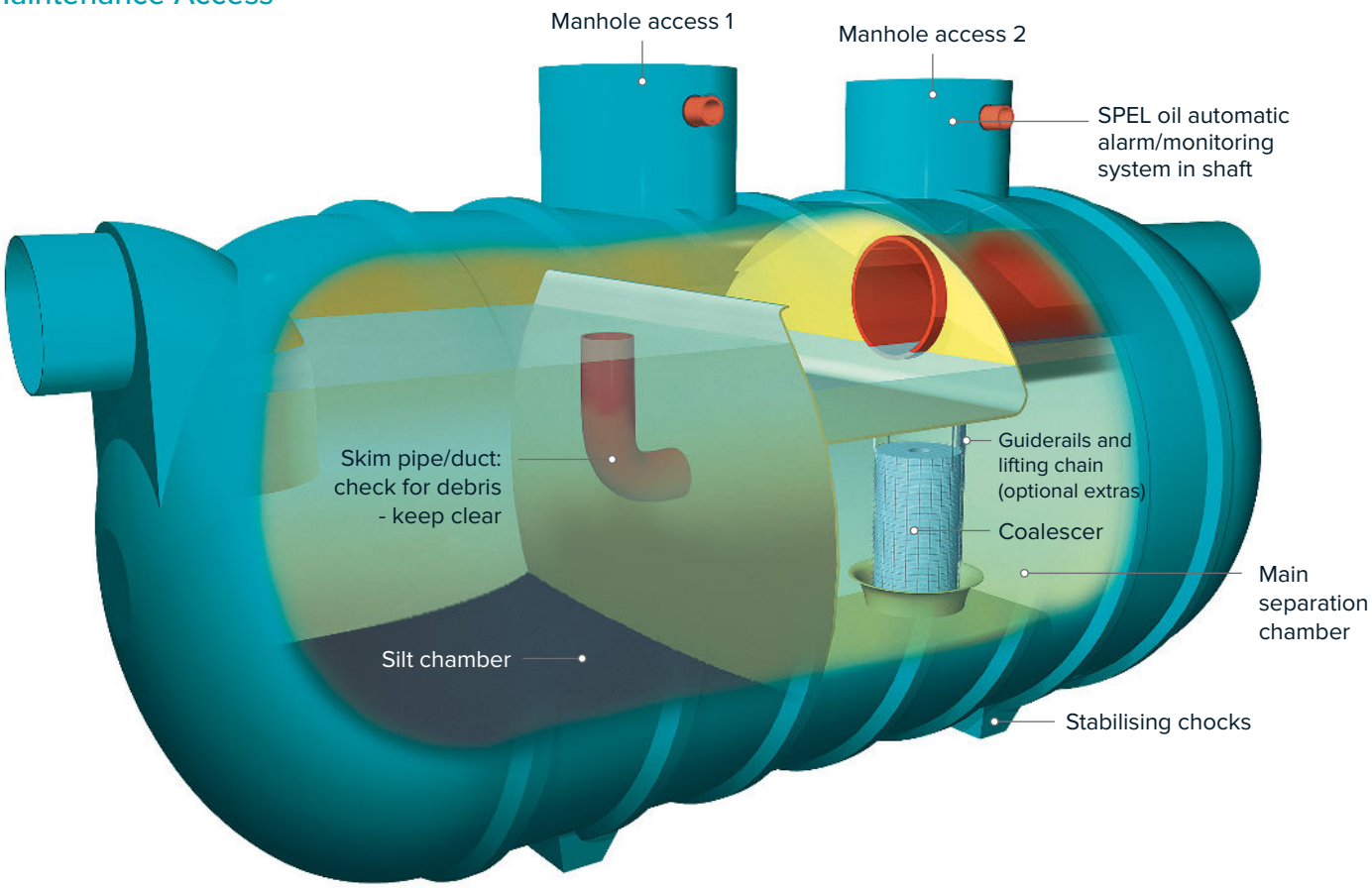
The SPEL Stormceptor® has been certified to the British and European Standard BS EN 858 by HR Wallingford. SPEL Stormceptor® Separators are designed for long term performance and with SPEL high volume coalescer units, low maintenance.

SPEL Stormceptor® Separators are manufactured in class 1 models and with silt capacity in accordance with BS EN 858-1. The range of models is listed in the SPEL Data Manual or on the SPEL website.

SPEL automatic alarm/monitoring systems will automatically warn you when the SPEL Stormceptor® requires emptying of light liquids and/or silts (depending on the alarm system chosen). However, regular inspections are recommended at intervals to suit the site conditions. We recommend the SPEL Stormceptor® is checked at 3, 6, or 12 monthly intervals to ensure correct operation of the treatment device, alarm and check the pollutant levels.

Where a SPEL automatic alarm/monitoring system is not fitted, the SPEL Stormceptor® should be checked at 3, 6, 12 monthly intervals, depending upon site conditions, to determine the depth of retained pollutants. When the depth of light liquids retained has reached the predetermined design level in accordance with the European Standard BS EN 858-1, or if excessive silt has accumulated, it should be emptied.

Maintenance Access



A wide range of SPEL Stormceptor® Separators are available incorporating coalescer unit/s for small to large catchment areas.

When emptying ensure both chambers (primary – chamber 1 and separation – chamber 3) are emptied equally to prevent unequal pressure on the internal partition.

Manhole access 1

This is the access to the primary chamber for removal of silt, the inspection of the skim pipe and clearing of any floating debris.

This also provides access to the junction chamber which is suitable as a sampling point for the final discharge.

Manhole access 2

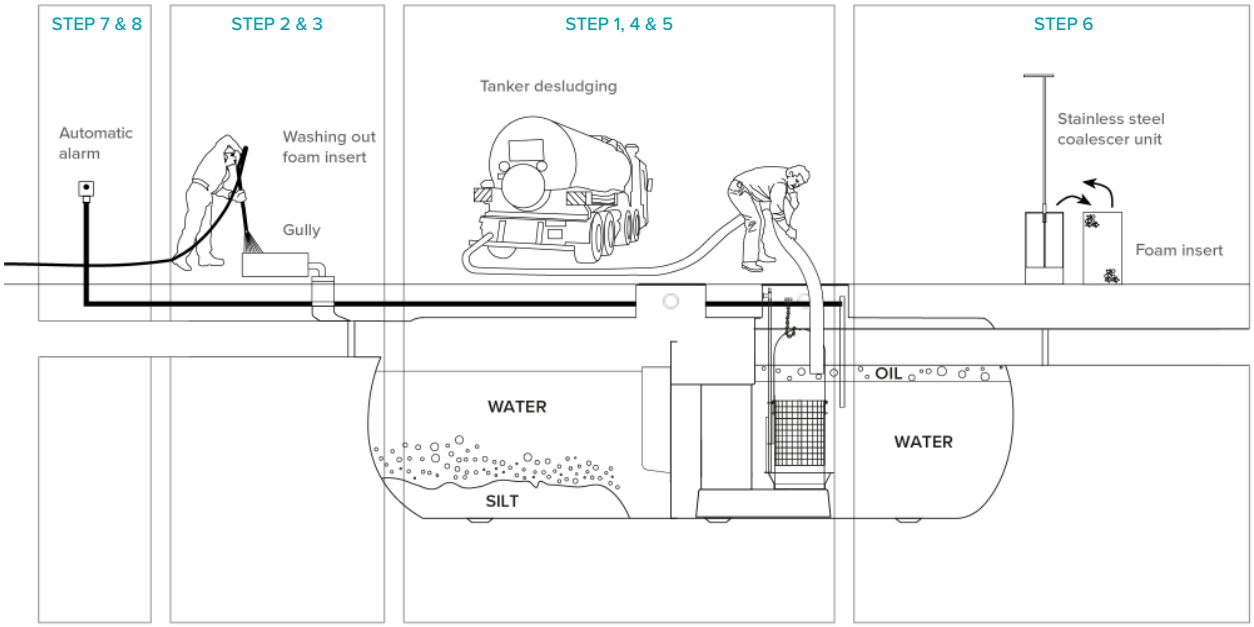
This provides access for the inspection, the removal and reinsertion of the coalescer units and the removal of hydrocarbons and silt. The SPEL automatic oil alarm/monitoring system probe is generally situated in a probe protection tube in this access shaft (see section on alarms).

This is an example, exact number and location of access shafts will depend on exact model chosen.

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SPEL Stormceptor® Class 1 Bypass Separator

Maintenance



Important Note: When emptying, ensure both chambers are emptied equally starting with the silt retention chamber and then the coalescer chamber and back again until empty.

STEP 1 Sucking out oil/fuel	Suck off as much retained oil from both chambers of the SPEL Stormceptor® as possible. This prevents oil coating the surface of the coalescer if this is removed first.
STEP 2 Coalescer Unit	Using the lifting handle, chain or wire rope, lift the coalescer unit out of the tank and place upstream of the SPEL Stormceptor®.
STEP 3 Cleaning Foam Insert	Remove foam insert and wash with normal water pressure ensuring the dirty water runs into the SPEL Stormceptor®.
STEP 4 Sucking out silt	For Intermediate Maintenance, the use of a tanker with a rigid suction pipe can suck out the silt from the base of the system, without the need to empty the complete unit. *Note: For Intermediate Maintenance, go to Step 6.*
STEP 5 Sucking out complete contents (if necessary)	For a Full Maintenance (at least once every 5 years, as recommended by EA, SEPA and NRW) the complete contents will need to be emptied and a structural and component check conducted. *Note: SPEL Recommend the replacement of coalescer unit(s) at all Full Maintenance intervals.*
STEP 6 Re-insert coalescer unit	Re-insert the foam insert into the stainless steel coalescer basket and re-insert the coalescer unit into the SPEL Stormceptor®. Re-position the lifting handle, chain or wire rope.
STEP 7 SPEL automatic alarm monitoring system	The SPEL automatic alarm/monitoring system probe should be lifted out of the probe protection tube, wiped clean and re-inserted. The system should now be reset according to instructions. See Section 8 (Alarms) in the SPEL Data Manual.
STEP 8 Test SPEL automatic alarm	To test an alarm is working, ensure the previous step has been carried out. Following this, an oil or silt alarm should sound when clean and dry and in contact with air, therefore, holding it in the air should set off the alarm on the control panel. For high level liquid alarms, putting them in water should set off the alarm.

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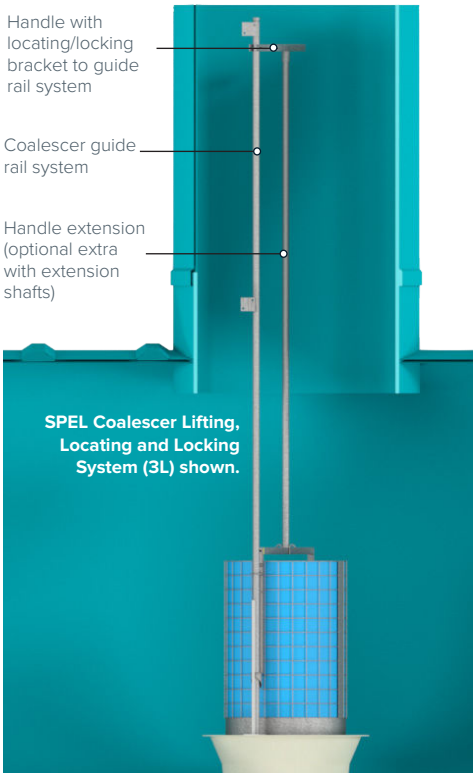
SPEL Coalescer System

Important: ensure all coalescers are correctly seated in the coalescer cone following maintenance. The SPEL Coalescer Guide Rail or 3L System helps ensure correct seating.

SPEL Coalescer

Normal servicing of the smaller SPEL separators frequently requires emptying the unit completely providing access for the coalescer units to be taken out, cleaned and returned and guided accurately to their seating positions. However larger SPEL separators may only require the hydrocarbon pollutants and silt to be removed.

In order to limit the servicing to sucking off the fuel/oil from the top and the silt from the bottom guide rails are required to ensure coalescer units are replaced into their correct positions.



SPEL Coalescer Lifting, Locating and Locking System (3L) shown.



SPEL Coalescer Lifting, Locating and Locking System (3L)

The SPEL 3L System has all the benefits of the below SPEL Guide Rail System and includes a locking mechanism and rigid lifting handle, this locks the coalescer in position and makes for easier lifting and locating.



SPEL Coalescer Guide Rail Systems

SPEL Guide Rail Systems are optional but strongly recommended for all tanks with deeper inverts or larger than 300 Series (1.8m dia).



SPEL Coalescer System without Guide Rails

Optional lifting chains available for ease of maintenance.

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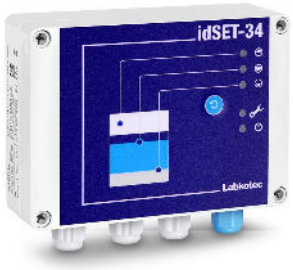
Automatic Alarms/Monitoring Systems

Alarm systems are available for all SPEL separators. These include probes for oil, silt and high level. There are also a range of control panels including solar power, more detail on our alarm systems can be found in Section 8.

Maintenance procedure

The SPEL automatic alarm/monitoring system will automatically warn you when the treatment system requires emptying. Where a SPEL automatic alarm/monitoring system is not fitted, SPEL separators should be checked at three, six or twelve-monthly intervals depending on site conditions, to determine the depth of retained pollutants and silt in both chambers. When the depth of the oil/fuel retained has reached the predetermined design level, in accordance with BS EN 858-1, it should be emptied.

Control Panels





idOil Solar with beacon light

Mains Powered Separator Alarms

For silt, oil and high level detection, compatible with the below alarm probes.

Solar Alarms

Available with optional flashing beacon, and GMS/SMS communication, also compatible with the below alarm probes.

Alarm Probes



idOil-OIL oil probe

Detects oil and indicates when the separator's oil storage is full.

This probe is required in order for a separator to comply with BS EN 858.



idOil-SLU silt probe

Monitors the silt layer in the separator and indicates when the silt layer has reached its maximum level.



idOil-LiQ high liquid level probe

Indicates when the liquid level in the separator rises excessively e.g. in an outlet blockage situation.

Kiosks for externally mounted alarm/control panels are available. See Section 8 of our Data Manual for further detail.

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25 YEAR TANK SHELL WARRANTY

SPEL Life in Water

25 YEAR TANK SHELL WARRANTY

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Warranty

SPEL Underground Tank Shells

We warrant that our SPEL Tankstor® and Separator underground tank shells, as identified by the serial number, if installed strictly in accordance with the company's relevant installation procedure as detailed in the SPEL Data Manual, Section 7, Installation Guidance and verified with an 'as built' installation drawing prepared by a qualified design consultant or an approved person and stage photographs to show the methods adopted from start to completion having in mind particularly:- ground conditions, invert depth, water table depth in winter, external loading, type and quality of backfill material, will

1. providing our published specifications and installation requirements are fully met the shell laminate integrity will last for a period of twenty-five years following date of original delivery/ collection.

2. not fail for a period of twenty-five years from the delivery/collection date due to external corrosion; and

3. not fail for a period of twenty-five years from the delivery/collection date due to internal corrosion provided the tank is solely used for:-

Rainwater storage

Potable water at ambient temperatures

Fuel/oil contaminated surface rainwater

Domestic sewage

For other applications the life expectancy will be determined by the contents, the operating conditions and the resin system/reinforcement specification used.

Our liability under this warranty is set out in SPEL General Conditions of Sale available on request. In brief they shall be limited to, at our option,

(1) repair of the defective tank
(2) delivery of a replacement tank to the original site or
(3) refund of the original purchase price.

We shall not be liable for any labour or other installation costs, indirect or consequential loss, damage or other damages in connection with such tanks.

Accessory warranties do not extend beyond the warranty period by our suppliers. This applies to such items as access covers and frames, monitoring equipment, Bauer type connections for emptying, pumping equipment or any accessories as defined in the company's official order acknowledgement/invoice.

The foregoing constitutes our exclusive obligation and we make no express or implied warranties, or any warranty of merchantability or fitness for any particular purpose whatsoever, except as stated.

01743 445 200 | info@spelproducts.co.uk
SPEL Products, Lancaster Road, Shrewsbury, Shropshire SY1 3NQ

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Maintenance Log

Site Visit and Maintenance Carried Out

Company		**Address**	
Model Number		**Asset Number/Location**	
Serial Number		**Installation Date**	

Date	Visual Check	Oil Probe Clean/ Check	Silt Probe Clean/ Check	Control Panel Check/Test	Tank Empty	Coalescer Check/ Clean	Coalescer Replacement	Structural Check
Tick all that apply								

Comments/Observations

Date of Next Service:

Date	Visual Check	Oil Probe Clean/ Check	Silt Probe Clean/ Check	Control Panel Check/Test	Tank Empty	Coalescer Check/ Clean	Coalescer Replacement	Structural Check
Tick all that apply								

Comments/Observations

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Comments/Observations

Date of Next Service:

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Comments/Observations

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Tick all that apply								

Comments/Observations

Date of Next Service:

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Operation & Maintenance

With SPEL Products

A guide that outlines the best practices, ensuring your SPEL system is achieving the best results for longer.

SPEL Life in Water

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