

DESIGNERS CDM NOTE - RESIDUAL RISKS IDENTIFIED

The design Engineer(s) have analysed this design as the scheme has been developed. In order to identify if there are any significant residual risk hazards (i.e. unusual, unexpected, abnormal or difficult).

Residual risks **HAVE** been identified and are therefore shown on this drawing. These risks have not been possible to remove by design.

This statement assumes that a competent Contractor with the appropriate qualified staff will be employed for the works, and that they will be familiar with site wide construction risks and hazards that they can reasonably be expected to encounter as part of their work.

- CDM RESIDUAL RISK ITEM**
Drainage pipes, manhole rings covers and fittings.
Risk of Manual handling injury.
- CDM RESIDUAL RISK ITEM**
Contact with waste water when making drainage connections.
Risk of infection from Weils disease etc.
- CDM RESIDUAL RISK ITEM**
Above Ground activities.
Possibility of objects falling from operations at high level onto persons working or passing below.
- CDM RESIDUAL RISK ITEM**
Works within confined spaces.

BURIED UTILITIES RISK NOTE

- Buried utilities are present on and in the vicinity of the site.
- The Contractor must satisfy themselves that they have seen utility returns for the area and that appropriate Risk Assessment Method Statement (RAMS) are in place and implemented to ensure that buried and/or overhead services are located prior to any works taking place.
- Any RAMS shall address safe procedures for protection and working in the proximity of services.

- NOTES**
- All dimensions and levels are in metres unless otherwise noted
 - This drawing is to be read in conjunction with the relevant Architect's/Engineer's drawings, specifications and CDM documentation
 - This drawing has been produced electronically and may have been photo reduced or enlarged when copied. Work to figured dimensions only (DO NOT SCALE - EXCEPT FOR PLANNING PURPOSES). All dimensions to be checked on site. Any errors or omissions to be reported to the engineer immediately.
 - This drawing contains coloured lines / information that may not be clear if reproduced in black and white.
 - Digital copies of this plan can only be considered accurate if supplied directly by Infrastruct CS Ltd.

Construction Note

It is essential that new drainage associated with the development is laid from the outfall(s) into the site. This is essential to avoid unforeseen obstructions where encountered (such as services). If the drainage is laid from the site out to the outfall it can result in significant abortive works to relay and overcome such obstructions.

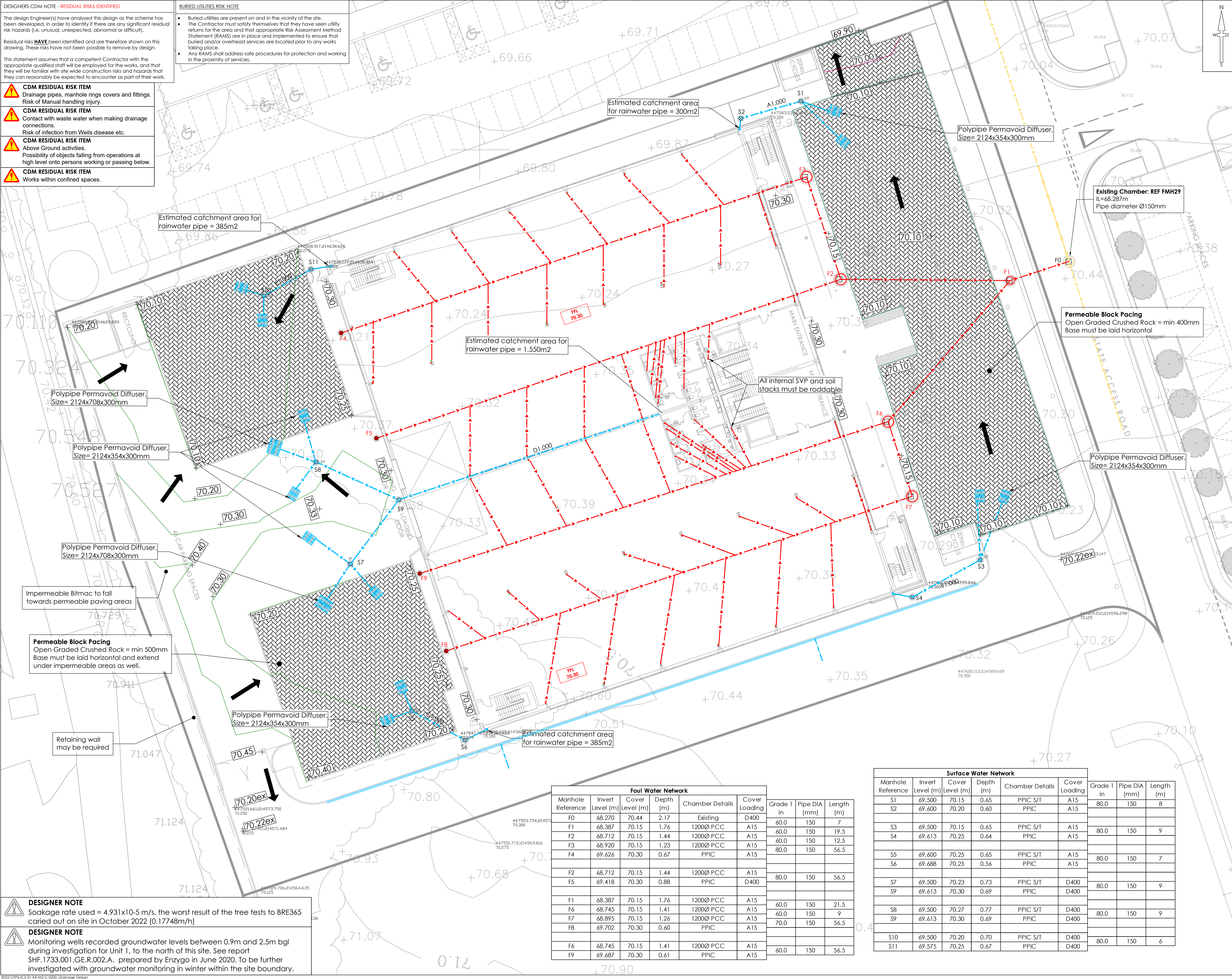
Location of Public Sewers have been taken from record drawings which should be fully substantiated by the contractor prior to commencing works on site

All manholes covers located within carriageways shall have no slip covers to prevent motorcycles/cycles losing control

Manhole schedules - Invert level shown related to the deepest pipe within the chamber

- Drainage Key**
- Sewers**
- Red dashed line: Foul water drain (private/non adoptable)
 - Blue dashed line: Surface water drain (private/non adoptable)
 - Yellow dashed line: Existing foul water sewer (Adapted)
- Chamber Key**
- FW/SW**
- Red circle: Mini access chamber (mac) - 300mmØ
 - Blue circle: PPIC - 475mmØ*
 - Yellow circle: P.C.C. units/brick*
 - Circle with 'S': Manhole
Depth: 1.25m to 1.5m*
Depth: 1.5m to 3.0m*

- * General note
(Refer to standard details & longitudinal sections for chamber sizes. Size may need to increase dependant on number of incoming pipes/size of incoming pipes)
- Soil vent pipe/soil stack
 - Silt Trap (ST) with removable silt bucket
 - Manhole reference number
 - RWP cellular discharge/collection unit (DU) (Permavoid or similar)
 - Finished Floor Level (FFL) (XX.XX)
 - Block paving - permeable
 - Flood exceedance routing
 - Impervious barrier to stop lateral movement of water
 - Baffle to prevent rapid through flow of water through permeable paving



Manhole Reference	Invert Level (m)	Cover Level (m)	Depth (m)	Chamber Details	Cover Loading	Grade 1 in	Pipe DIA (mm)	Length (m)
F0	68.270	70.44	2.17	Existing	D400	60.0	150	7
F1	68.387	70.15	1.76	1200Ø PCC	A15	60.0	150	19.5
F2	68.712	70.15	1.44	1200Ø PCC	A15	60.0	150	12.5
F3	68.920	70.15	1.23	1200Ø PCC	A15	80.0	150	56.5
F4	69.626	70.30	0.67	PPIC	A15			
F2	68.712	70.15	1.44	1200Ø PCC	A15	80.0	150	56.5
F5	69.418	70.30	0.88	PPIC	D400			
F1	68.387	70.15	1.76	1200Ø PCC	A15	60.0	150	21.5
F6	68.745	70.15	1.41	1200Ø PCC	A15	60.0	150	9
F7	68.895	70.15	1.26	1200Ø PCC	A15	70.0	150	56.5
F8	69.702	70.30	0.60	PPIC	A15			
F6	68.745	70.15	1.41	1200Ø PCC	A15	60.0	150	56.5
F9	69.687	70.30	0.61	PPIC	A15			

Manhole Reference	Invert Level (m)	Cover Level (m)	Depth (m)	Chamber Details	Cover Loading	Grade 1 in	Pipe DIA (mm)	Length (m)
S1	69.500	70.15	0.65	PPIC S/T	A15	80.0	150	8
S2	69.600	70.20	0.60	PPIC	A15			
S3	69.500	70.15	0.65	PPIC S/T	A15	80.0	150	9
S4	69.613	70.25	0.64	PPIC	A15			
S5	69.600	70.25	0.65	PPIC S/T	A15	80.0	150	7
S6	69.688	70.25	0.56	PPIC	A15			
S7	69.500	70.23	0.73	PPIC S/T	D400	80.0	150	9
S9	69.613	70.30	0.69	PPIC	D400			
S8	69.500	70.27	0.77	PPIC S/T	D400	80.0	150	9
S9	69.613	70.30	0.69	PPIC	D400			
S10	69.500	70.20	0.70	PPIC S/T	D400	80.0	150	6
S11	69.575	70.25	0.67	PPIC	D400			

DESIGNER NOTE
Soakage rate used = 4.931x10⁻⁵ m/s, the worst result of the tree tests to BRE365 carried out on site in October 2022 (0.17748m/h)

DESIGNER NOTE
Monitoring wells recorded groundwater levels between 0.9m and 2.5m bgl during investigation for Unit 1, to the north of this site. See report SHF.1733.001.GE.R.002.A. prepared by Enzygo in June 2020. To be further investigated with groundwater monitoring in winter within the site boundary.

P02	MBD	RJW	Pipe numbering added. Reference to new soakage tests added	17/10/22		
P01	RSI	MBD	Initial issue	16/08/22		
REV	DRAWN	CHECK	REVISION COMMENTS	ISSUE DATE		
DRAWING TITLE				SHEET NO.		
Drainage Design				1/1		
PROJECT						
Oxford Technology Park, Unit 6 (A & B)						
CLIENT						
SCALE @ A1						
1:200						
PROJECT NUMBER						
5052						
STATUS						
PHASE						
ISSUE PURPOSE						
INFORMATION						
PROJECT	ORIGIN	LEVEL	TYPE	ROLE	NO.	REVISION
OTP6	ICS	01	XX	DR	C	0200 P02

3052 OFFICE-01-XX-M2-C-0200_Drainage Design