

CC2970

YGG Tregesles

Drainage Strategy Technical Note

Document Control Table

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Checked	N/A	Revision	P01
Approved	L. Mitchell	Suitability	S3 – For Review & Comment

Revision History

Status	Revision	Date	Description	Checked by	Approved by
S2	P01	08/05/26	First Issue		L. Mitchell



Introduction

Cambria Consulting Ltd have been appointed by Knox & Wells on behalf of Neath Port Talbot County Borough Council (NPTCBC) (hereafter referred to as the 'Client'), to prepare a drainage strategy to support the planning application for the proposed redevelopment of Ysgol Gynradd Gymraeg (YGG) Tregeles.

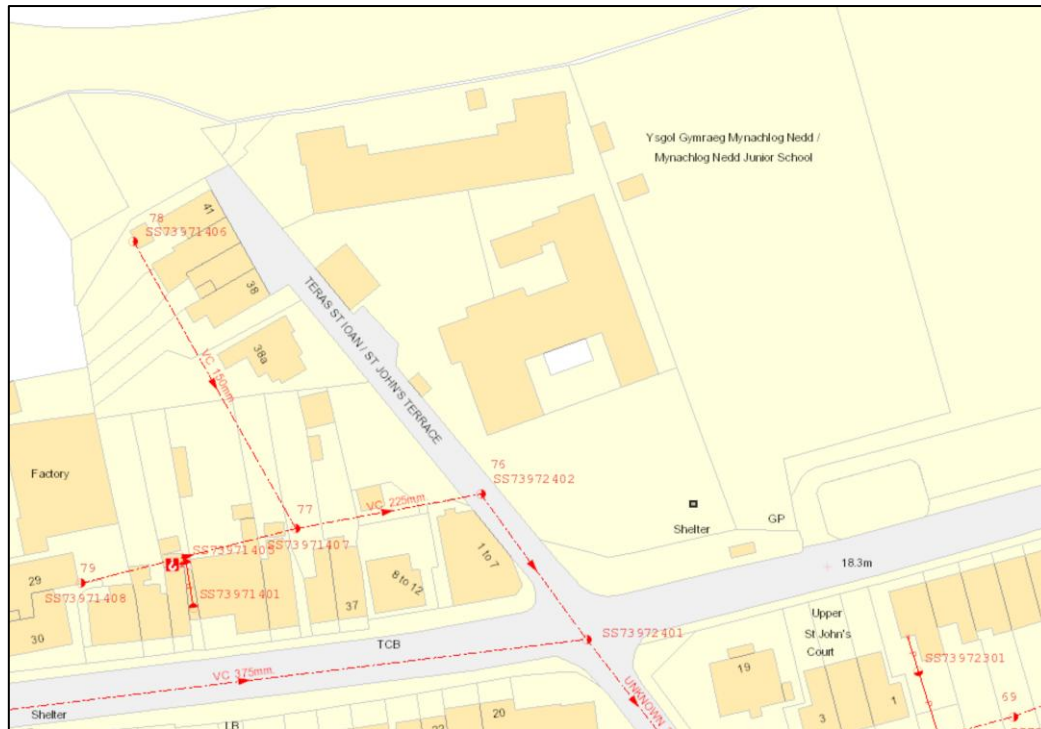
Existing Drainage

Drainage investigation, utility and CCTV survey has shown that the existing school site is largely served by a combined sewerage system which in turn discharges to the 225mm diameter DCWW combined system located in the access lane.

A separate, surface water system has also been identified in the access lane which receives a small catchment of the existing school's surface water run-off. This is not a DCWW adopted network and is assumed to be under the ownership of NPTCBC. The drainage investigation undertaken as part of the CCTV survey has dye tested and proven the outfall to watercourse - River Neath.



Extract of CCTV Survey Report Plan



Extract of DCWW Public Sewer Records

The school have reported that the existing pitch / field to the east is often unusable during times of extreme / prolonged rainfall. As such there are aspirations to improve land drainage provision to improve functionality.

Proposed Foul Drainage

The proposals involve the upgrading of facilities only with no increase in student numbers / foul loading to be generated by the redevelopment. On this basis, the nutrient loadings of pre and post development are considered neutral.

No hot food preparation is proposed to the new building and as such there is no requirement for grease treatment anticipated as part of the above / below ground drainage provision.

It is proposed to make connection to the existing school combined drainage system and re-use the existing off-site connections to the DCWW combined network. Subsequently, there are no section agreements anticipated to be required as part of these works.

Proposed Surface Water Drainage & SUDS

In October 2018, Welsh Government published the 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining Surface Water Drainage Systems'. This standard is now mandatory for new developments with either a construction area greater than 100m² or more than 1 dwelling.

The principles that underpin the design of surface water management schemes to meet the standards area as follows:

SuDS schemes should aim to:

- ▶ Manage water on or close to the surface and as close to the source of the runoff as possible.



- ▶ Treat rainfall as a valuable natural resource
- ▶ Ensure pollution is prevented at source, rather than relying on the drainage system to treat or intercept it.
- ▶ Manage rainfall to help protect people from increased flood risk, and the environment from morphological and associated ecological damage resulting from changes in flow rates, patterns and sediment movement caused by the development.
- ▶ Take account of likely future pressures on flood risk, the environment and water resources such as climate change and urban creep.
- ▶ Use the SuDS Management Train, using drainage components in series across a site to achieve a robust surface water management system (rather than using a single “end of pipe” feature, such as a pond, to serve the whole development).
- ▶ Maximise the delivery of benefits for amenity and biodiversity.
- ▶ Seek to make the best use of available land through multifunctional usage of public spaces and the public realm.
- ▶ Perform safely, reliably and effectively over the design life of the development taking into account the need for reasonable levels of maintenance.
- ▶ Avoid the need for pumping where possible.
- ▶ Be affordable, taking into account both construction and long-term maintenance costs and the additional environmental and social benefits afforded by the system

Standard S1 - Surface Water Runoff Destination

This standard reviews the disposal routes for surface water run-off. The destinations are split into 5 levels with Level 1 being the most preferential and level 5 being the least preferred and only used in exceptional circumstances where all higher level disposal methods have been discounted / eliminated.

Priority Level 1: Surface water runoff is collected for use;

Rainwater harvesting is not being incorporated into the proposals on the basis of cost viability plus no perceived supply issues in this area and is therefore considered to meet the exception criteria as per G1.4. This has been agreed through SAB Pre-App consultation (reference SP2026/0002).

Priority Level 2: Surface water runoff is infiltrated to ground;

Soakaway testing has been undertaken to BRE Digest 365 as part of site investigation undertaken by Integral Geotechnique (reference 14560/AG/26/SI). This has proven the ground conditions do not support infiltration and there is a shallow groundwater reported which further precludes the use of infiltration / soakaways. Passive infiltration will therefore not be considered and all SuDS features will be lined to provide a sealed system.

Priority Level 3: Surface water runoff is discharged to a surface water body;

No nearby watercourse(s) offer a viable direct connection point however, the CCTV survey has proven an existing surface water system serving part of the school and access road outfalls to watercourse – River Neath.



Priority Level 4: Surface water runoff is discharged to a surface water sewer; highway drain or other drainage;

As above – the existing dedicated surface water system already receives flows from the school and is the preferred disposal method for the proposed development's surface water sewer.

This network is not shown on DCWW public sewer records and is therefore anticipated to be a NPTCBC asset.

Priority Level 5: Discharge to a Combined Sewer

The majority of the existing school site drains to the DCWW combined system. The proposed redevelopment creates betterment in reducing loadings conveyed to the combined network and is considered a more sustainable approach.

Standard S2 - Surface Water Runoff Control

The existing site freely discharges at an unrestricted rate.

The existing networks have been modelled based on drainage investigation, utility survey & CCTV drainage survey to provide an existing baseline of discharge rates. Site specific greenfield discharge rates have also been generated to represent the contribution in the area of the playing field to the east using the FEH / REFH2 adjustment method. Full InfoDrainage Model & Outputs have been made available and are summarised below;

		Discharge Rates (l/s)				
		Catchment 1 - Surface Water System	Catchment 2 - Combined System	Catchment 3 - Greenfield	TOTAL	30% Betterment
Return Period	Q2	12.3	15.7	0.92	28.92	20.24
	Q5	16	19.4	1.26	36.66	25.66
	Q30	24.5	28.3	1.86	54.66	38.26
	Q100	29.8	32.4	2.30	64.50	45.15
	QBAR (approx Q2.3)	12.67	16.07	0.95	29.69	20.78

The design standards require a minimum 30% betterment for redevelopment of brownfield sites. On this basis, we present a proposed development restricted discharge rate of 20l/s which equates to greater than 30% betterment on QBAR rates.

The surface water drainage system has been sized to cater for the 1 in 100 year storm event with a +40% allowance for climate change.

The school have also reported that the existing pitch / field to the east is often unusable during times of extreme / prolonged rainfall. It is therefore proposed to provide land drainage provision to improve functionality. This area and the proposed temporary garden classroom will be attenuated to appropriate greenfield rates and a separate connection made to the same surface water system as the main works. Greenfield Rates have been calculated for this area as follows;

Greenfield Rates - Playing Field Area			
Development Contributing Area (m ²)	1427	Q1	1.09
		Q2	1.23
		Q5	1.68
		Q30	2.49
		Q100	3.07



The design achieves a maximum discharge rate of 1.4l/s in the Q100+40% climate change storm event.

The surface water drainage system has been sized to cater for the 1 in 100 year storm event with a +40% allowance for climate change.

Urban creep is not considered appropriate in this instance given any future extensions would be regulated through the planning process.

Overflows will be provided to each feature to cater for exceedance / infrastructure failure.

Standard S3 – Water Quality

SUDS features / components have been located in pockets across the site responding 'at source' wherever possible. The system has been designed to operate sequentially, in a SUDS management / treatment train, in order to treat the surface water runoff discharging from the site.

The proposals include a partial green / bio-solar roof, raingarden / bioretention features, raised planters and permeable paving.

The Simple Index Approach has been adopted to ensure sufficient treatment measures are met along with interception criteria and the retention of the first 5mm of rainfall is met.

Standard S4 & S5 – Amenity & Biodiversity

A variety of 'soft' green SUDs features are to be integrated at surface level into the external landscaping proposals, to provide attractive amenity spaces, promoting dual functionality. Reference should be made to landscape architect design information.

Standard S6 - Design of drainage for Construction, Operation and Maintenance and Structural Integrity

All SUDS features have been designed and constructed in accordance with CIRIA C753 The SUDS Manual and C768 Guidance on the Construction of SUDS.

Suitable maintenance access to all drainage features will be provided.

The surface water drainage proposals have been subject to SAB Pre-App consultation (reference SP2026/0002) and remain subject to Full SAB Approval which is intended to run in parallel with Planning Approval.





- NOTES**
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) AND DIMENSIONS IN METERS ABOVE ORDNANCE DATUM (m AOD), UNLESS OTHERWISE NOTED.
 - THE DETAILS SHOWN ON THIS DRAWING HAVE BEEN PRODUCED FOR RIBA STAGE 3, REMAIN SUBJECT TO SAB APPROVAL AND ARE NOT FOR CONSTRUCTION.
 - THE TOPOGRAPHICAL & UTILITY SURVEY INFORMATION SHOWN IS BASED ON AZIMUTH LAND SURVEYS LIMITED DRAWING 'KW4968-01' DATE: MARCH 2026.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CAMBRIA DRAWING REFERENCE: CC2970-CAM-XX-XX-DR-C-0520-Drainage Details
 - CANOPY DRAINAGE REQUIREMENTS TBC
 - FOUL AS PER CONSILIUM DRAWINGS REV P01

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CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE. ONLY FIGURED DIMENSIONS ARE TO BE WORKED FROM. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO CAMBRIA CONSULTING LIMITED BEFORE PROCEEDING.

THE CONTRACTOR IS TO REFER TO THE SPECIFICATION, FULL SCHEDULE OF RESIDUAL RISKS IN THE CONTRACT DOCUMENTATION AND ALSO TO INFORMATION FROM OTHER DESIGNERS, IN PARTICULAR THE M&E CONSULTANT REGARDING EXISTING LIVE SERVICES.

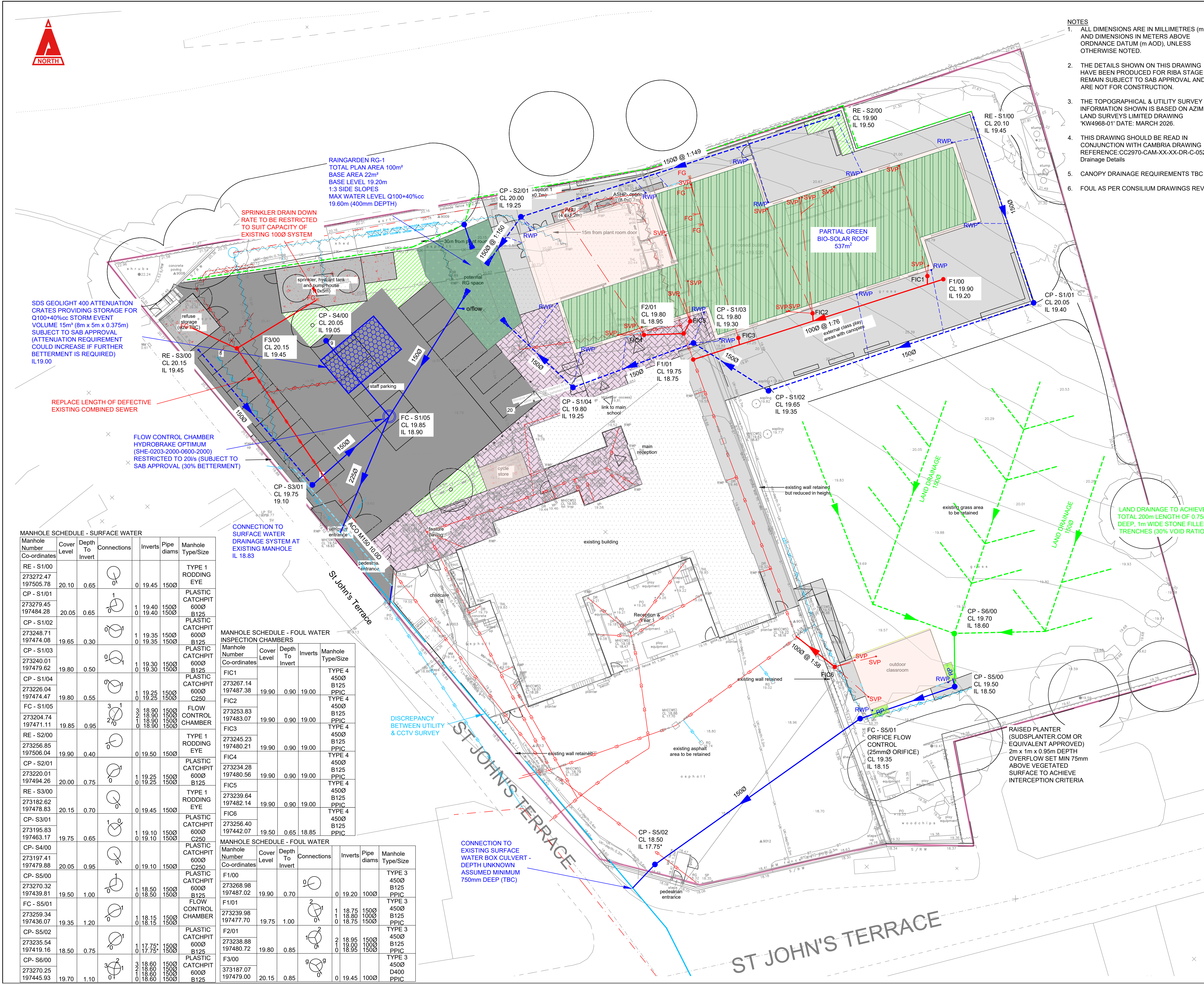
 THIS SYMBOL IS USED TO HIGHLIGHT INSTANCES OF RISK WITHIN THE CONSTRUCTION PROCESS. ALWAYS CHECK FOR LATER REVISIONS OF THIS DRAWING.

- KEY**
- PROPOSED SURFACE WATER
 - PROPOSED FOUL SEWER
 - PROPOSED LAND / FILTER DRAIN
- SUDS:**
- GREEN ROOF
 - RAISED PLANTER
 - RAINGARDEN
 - ATTENUATION
 - PERMEABLE BLOCK
 - PERMEABLE TARMAC
 - RESURFACING ONLY - SAB EXEMPT
- EXISTING DRAINAGE TO BE MADE REDUNDANT
- EXISTING SURFACE WATER DRAINAGE
- EXISTING FOUL WATER DRAINAGE
- RWP RAINWATER DOWNPIPE
- ACO SWALE INLET / OUTLET
- THRESHOLD / LINEAR DRAIN
- SVP INTERNAL FOUL CONNECTION
- FG PROPOSED FOUL GULLY

MANHOLE SCHEDULE - SURFACE WATER						
Manhole Number	Cover Level	Depth To Invert	Connections	Inverts	Pipe diams	Manhole Type/Size
RE - S1/00						TYPE 1 RODDING EYE
273272.47	20.10	0.65	0	19.45	1500	
197505.78						
CP - S1/01						PLASTIC CATCHPIT 6000 B125
273279.45	20.05	0.65	1	19.40	1500	
197484.28						
CP - S1/02						PLASTIC CATCHPIT 6000 B125
273248.71	19.65	0.30	1	19.35	1500	
197474.08						
CP - S1/03						PLASTIC CATCHPIT 6000 B125
273240.01	19.80	0.50	1	19.30	1500	
197479.62						
CP - S1/04						PLASTIC CATCHPIT 6000 B125
273226.04	19.80	0.55	1	19.25	1500	
197474.47						
FC - S1/05						FLOW CONTROL CHAMBER
273204.74	19.85	0.95	3	18.90	1500	
197471.11						
RE - S2/00						TYPE 1 RODDING EYE
273256.85	19.90	0.40	0	19.50	1500	
197506.04						
CP - S2/01						PLASTIC CATCHPIT 6000 B125
273220.01	20.00	0.75	1	19.25	1500	
197494.26						
RE - S3/00						TYPE 1 RODDING EYE
273182.62	20.15	0.70	0	19.45	1500	
197478.83						
CP - S3/01						PLASTIC CATCHPIT 6000 B125
273195.83	19.75	0.65	1	19.10	1500	
197463.17						
CP - S4/00						PLASTIC CATCHPIT 6000 B125
273197.41	20.05	0.95	0	19.10	1500	
197479.88						
CP - S5/00						PLASTIC CATCHPIT 6000 B125
273270.32	19.50	1.00	1	18.50	1500	
197439.81						
FC - S5/01						FLOW CONTROL CHAMBER
273259.34	19.35	1.20	1	18.15	1500	
197436.07						
CP - S5/02						PLASTIC CATCHPIT 6000 B125
273235.54	18.50	0.75	1	17.75	1500	
197419.16						
CP - S6/00						PLASTIC CATCHPIT 6000 B125
273270.25	19.70	1.10	3	18.60	1500	
197445.93						

MANHOLE SCHEDULE - FOUL WATER INSPECTION CHAMBERS				
Manhole Number	Cover Level	Depth To Invert	Inverts	Manhole Type/Size
FIC1				TYPE 4 4500 B125 PPIC
273267.14	19.90	0.90	19.00	
197487.38				
FIC2				TYPE 4 4500 B125 PPIC
273253.83	19.90	0.90	19.00	
197483.07				
FIC3				TYPE 4 4500 B125 PPIC
273245.23	19.90	0.90	19.00	
197480.21				
FIC4				TYPE 4 4500 B125 PPIC
273234.28	19.90	0.90	19.00	
197480.56				
FIC5				TYPE 4 4500 B125 PPIC
273239.64	19.90	0.90	19.00	
197482.14				
FIC6				TYPE 4 4500 B125 PPIC
273256.40	19.50	0.65	18.85	
197442.07				

MANHOLE SCHEDULE - FOUL WATER						
Manhole Number	Cover Level	Depth To Invert	Connections	Inverts	Pipe diams	Manhole Type/Size
F1/00						TYPE 3 4500 B125 PPIC
273268.98	19.90	0.70	0	19.20	1000	
197487.02						
F1/01						TYPE 3 4500 B125 PPIC
273239.98	19.75	1.00	1	18.75	1500	
197477.70						
F2/01						TYPE 3 4500 B125 PPIC
273238.88	19.80	0.85	2	18.95	1500	
197480.72						
F3/00						TYPE 3 4500 B125 PPIC
373187.07	20.15	0.85	0	19.45	1000	
197479.00						



P04	PLANNING ISSUE	GJ	LM	LM
			08/05/26	
P03	RIBA STAGE 3 ISSUE - FOR COSTING	GJ	LM	LM
			24/04/26	
P02	SAB PRE-APP	GJ	LM	LM
			26/03/26	
P01	FIRST ISSUE - RIBA 2	LM	-	LM
			13/03/26	
Rev.	Description	By	Chk	App

Client:
KNOX & WELLS

Project:
YGG TREGELES

Drawing Title:
PROPOSED DRAINAGE LAYOUT

Drawing No.
CC2970 CAM XX XX DR C 0500

Project	Originator	Function	Special	Form	Disc	Number
Status:	S1 PRELIMINARY	Scale @A1:	1:200	Rev:	P04	

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