Project Ref: T_23_2721
Report Ref: T2721_Drainage Strategy Rev C

Mauna Kea Ltd,

Land South of Bryn Lane,

Wrexham Industrial Park,

Wrexham

Drainage Strategy

Tier Consult Ltd
Unit 5 Office Village,
Sandpiper Court,
Chester Business Park,
Chester CH4 9QZ
01244 684 900

Registered Company No. 04638546

1.0 Introduction

1.1 Tier Consult have been appointed by Mauna Kea Limited, to prepare a drainage strategy proposal for the proposed development at Land South of Bryn Lane, Wrexham Industrial Park.

1.2 The report aims to provide an outline of the proposed drainage strategy, taking account of the requirements of the Planning Policy Wales (12th Edition).

2.0 Site Description and Development Proposal

2.1 The site is located on Bryn Lane in Wrexham Industrial Park, Wrexham. The approximate National Grid Reference for the centre of the site is SJ384507 with coordinates Easting: 338465, Northing: 350772 at postcode LL13 9RX.

2.2 The proposed development is 3.72 ha with a max impermeable area of 2.41 ha.

2.3 A topographic survey (Appendix A) has been undertaken by Powers Land Surveyors which indicates that the site predominantly falls from north to south with site levels varying from circa 34.180m to 27.487m. A watercourse runs along the southern boundary of the development.

2.4 The soilscapes mapping details the site conditions to be slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. Information from the British Geological Survey Map indicates that the geological sequence below the site comprises mudstone, sandstone and conglomerate.

3.0 Existing Drainage

3.1 The development land is greenfield site located in a highly developed Wrexham Industrial Estate with an existing watercourse to the southern and eastern boundaries of the site. It is understood that these watercourses converge via culverts in the south-eastern area of the site and flow east into the neighbouring land. From revieing surrounding watercourses, it is believed that this then runs east and joins the River Dee.

4.0 Surface Water Drainage

4.1 The Wales Planning Policy and Schedule 3 of the Flood and Water Management Act 2010 prescribe a hierarchal approach to surface water discharge. In order of preference, surface water should be discharged via:

a) Infiltration systems / soakaways
b) To a watercourse / surface water body
c) To a sewer or other formal drainage system

4.2 Infiltration/Soakaways

4.2.1 The ground infiltration testing has not been carried out on the site at this stage, however from the desktop study reviewing the BGS and soilscapes mapping the ground conditions defined do not suggest that infiltration is achievable.

4.3 Discharges to Watercourse

4.3.1 There is an existing watercourse along the southern and eastern boundaries of the site, however any connection to these watercourses are subject to agreement with WCBC to discharge flows from the development.

4.4 Discharges to Sewer

4.4.1 There is a possibility of a highway drain located to the north of the development on Bryn Lane. However, this has not been explored due to the topography of the site, which predominantly falls from north to south.

4.4.2 The Dwr Cymru Welsh Water (DCWW) public sewer records indicate the presence of a combined sewer located to the south of the development which drains to Five fords Wastewater Treatment Works (WwTW), via Wrexham Industrial Estate Sewerage Pumping Station.

5.0 Proposed Surface Water Drainage Strategy

5.1 Following the guidance within planning guidance the outfall would be to the existing watercourse within the land. As this is subject to agreement by WCBC, a discharge into the combined public sewer may have to be considered. However, in accordance with the hierarchy mentioned in the Schedule 3 of the Flood and Water Management Act 2010, discharge to a combined sewer shall only be made as a last resort once all other options have been explored and fully exhausted.

5.2 The surface water drainage system for the site is proposed to convey flows via gravity system to each respective outfall option at greenfield QBAR rate.

5.3 The storm water drainage system is to be designed in accordance with the requirements of the *Wales Planning Policy* and *Schedule 3 of the Flood and Water Management Act 2010,* to ensure that flood risk is not increased, either on or off site, for all storm events up to and including the 1 in 100 year + 40% climate change events.

5.4 The development area equates to 3.72 ha. The greenfield QBAR rate (Appendix B) for the development area equates to 1.3 l/s based on the site area above. As such it is proposed to restrict peak surface water flows to 1.3 l/s off site.

5.5 Surface water runoff from roofs, private drives and any adoptable highways, will drain via a piped network and an open swale to an attenuation facility which will provide attenuation storage (approximately 2200m^3) for all flows up to and including the 1 in 100-year event plus 40% for climatic change. Refer to appendix C.

5.6 SuDS features, such as permeable paving and swales, will be incorporated into the surface water drainage proposals to aid in the mitigation requirements for water quality prior to discharging to the wider natural surface water drainage network.

5.7 In addition to the SuDS features mentioned above, the proposals also include a petrol/ oil interceptor with an enhanced silt retention providing greater pollution mitigation indices.

5.8 Other SuDS features have been considered, however due to the limitations of the site, they are deemed not suitable. Ponds were considered to be included in the Strategic Ecology Network, but the depths that could be achieved in the limited area was prohibitive. Ponds were also considered for attenuation; however, a priority was given to wildlife ponds as there is a need for ecological improvement in this area. These ponds could not be considered in the drainage strategy.

5.9 WCBC Local Development Plan Policy SP9 is a factor in our drainage strategy which requires ecology and employment uses on site.

6.0 Proposed Foul Drainage Strategy

6.1 The foul flows from the development are proposed to connect to the existing public combined sewer that traverses the southern extents of the site.

6.2 From previous discussions with DCWW on another project within the industrial estate, the feedback is that there is no capacity within the existing sewer network to accept any flows from any future development and there is no intention to invest and upgrade the infrastructure within their current management plan.

6.3 Following the developer enquiry response, it has now been confirmed that the existing sewer network lacks the capacity to accommodate any additional foul flows from the proposed developments.

6.4 Modelling was undertaken by DCWW and a range of solutions were presented. However, the viability of these solutions is being questioned and would require agreement from the developer as a contribution is being sought.

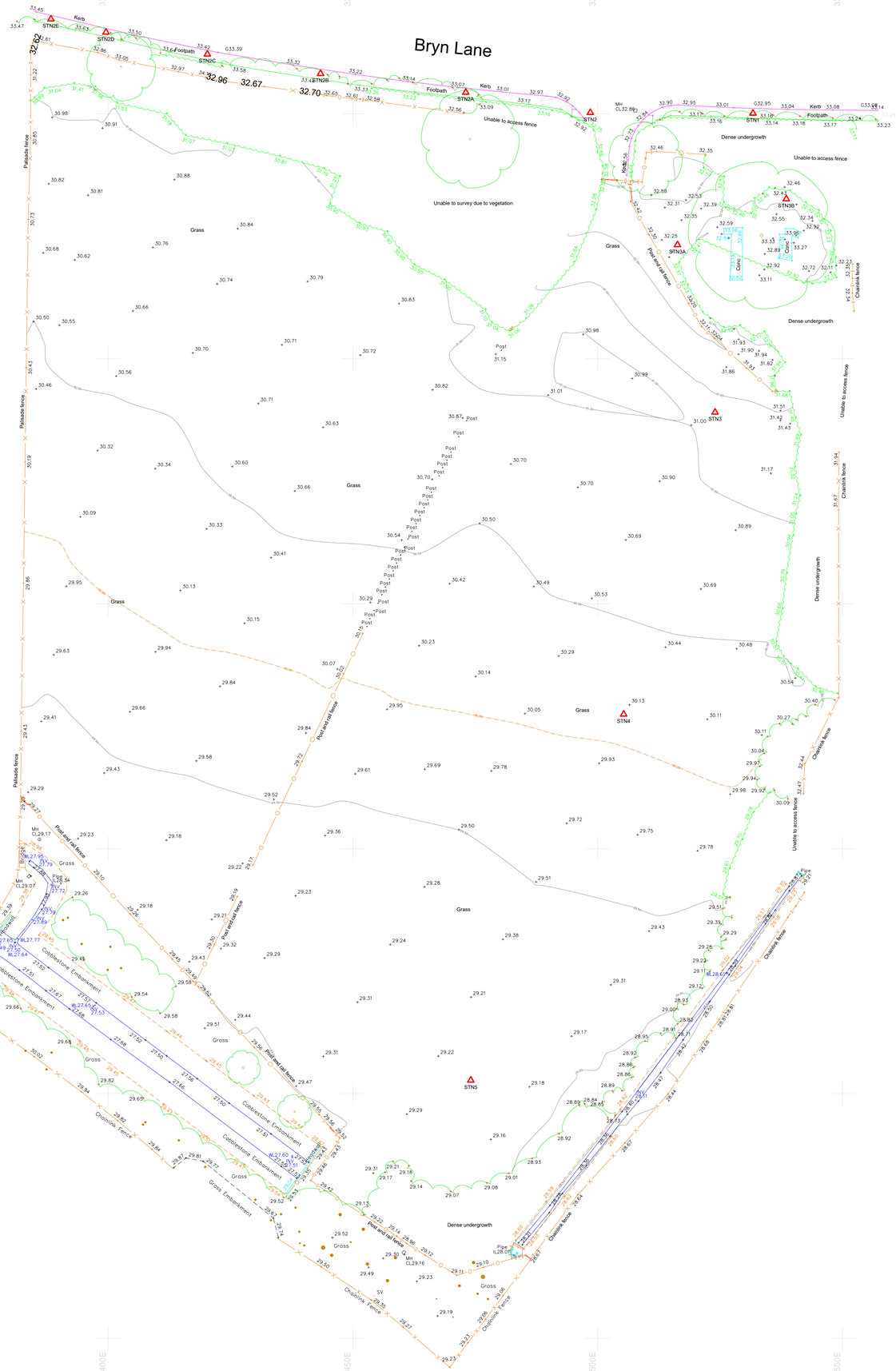
6.5 Onsite foul water treatment has been considered; however, it's believed that NRW would need to agree to the proposal and considering there is a sewer on site. It is understood that this would not be a viable solution as discharging treated foul flows to watercourse does not take priority over discharging to sewer where feasible.

6.6 The client is currently in discussions with DCWW regarding the potential for upgrades to the local sewer network, with the aim of accommodating the foul flows form the proposed development.

Proposed drainage layout is pertained in Appendix C.

Appendix A

Topographic Survey



Survey Grid and Datum

The derived coordinate system used for this survey is related to Ordnance Survey national grid using Smartnet RTK (OSTN15 Transformation), orientated to north with a scale factor of 1.000.

The derived level datum used for this survey is related to Ordnance Survey (OSGM15 Geoid Model) using Smartnet RTK.

To avoid discrepancies any coordinated data used in conjunction with this survey must be derived directly from this control data.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

Legend

Top/Bottom of bank
Building
Channel
Concrete slab
Cleadward fence
Chainlink fence
Concrete post & panel fence
Iron railing fence
Palisade fence
Post & Panel fence
Post & rail fence
Post and Wire Fence
Hedge
Invert
Kerb line (bottom)
Kerb line (top)
Overhead Power lines
MBA
Switchbox
Steel
Tree spread
Verge
Wall
Bin — Bin
Bollard — Bol
Cable tv — CATV
Electric cover — Elec
Electricity pole — EP
Earth rod — Earth
Fire hydrant — FH
Gulley — G
Gas cover — GAS
Inspection cover — IC
Lamp post — LP
Manhole — MH
Marker post — Marker
OSBM — OSBM
Rodding eye — RE
Road sign — RS
Sign post — SP
Stump — Stump
Stone Valve — SV
Telegraph Pole — TP
Trees — TRL
Traffic lights
Trial pit — Trial pit P1
Tree Trunk
Water cover — W
Bus Stop
BT — BT rectangle 3 pts
Bus stop

Notes

The contractor must ensure that adequates checks on building dimensions, levels, features are completed prior to commencing any construction works.

Any errors or discrepancies must be notified to Powers UK Ltd immediately.

The accuracy of the digital data is the same as the plotting scale implies.

All dimensions are in metres unless otherwise stated.

Topographical Surveys

Any surveyed boundary features may not be representative of the legal boundary of the site

All reasonable effort has been made to survey features and detail that are unobstructed/visible during at the time of survey

Grouped trees have been shown as a tree spread, individual trees are drawn to scale showing a bole diameter taken at approximately 1.5m above GL and an average spread

Measured Building Surveys

All measurements to internal wall are taken at approximately 1.5m above floor level and assumed to be vertical

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Do not scale from this drawing.

Station Listing

SURVEY STATIONS

Name	Easting	Northing	Height
STN1	338531.706	350850.133	33.144
STN2	338498.488	350850.267	32.854
STN3	338523.966	350789.093	31.324
STN3A	338516.289	350823.273	32.328
STN3B	338538.514	350832.633	32.540
STN4	338505.298	350727.442	30.045
STN5	338474.088	350652.710	29.129
STN2A	338473.049	350854.393	33.225
STN2B	338443.397	350858.231	33.431
STN2C	338420.272	350862.198	33.598
STN2D	338399.566	350866.675	33.679
STN2E	338388.334	350869.364	33.641

Layout Key

(1)

Rev	Date	Description	Check
A	21/10/24	Added brook to south of site	JL

powers
Integrated Survey Partner
Meridian House, 58-60 Hillside Road, Frodsham, Cheshire WA6 6AG
Tel: 01928 734473
Email: surveyors@powersuk.com
www.powersuk.com

Client: CBRE

Site: Bryn Lane, Wrexham, LL13 9XW

Title: Topographical Survey

Survey by	DW	Drawn by	JW
Check by	GM	Date	03/11/23
Scale [A1 Sheet]	1:500	Project No.	FP6441
Status	FINAL		
Drawing No.	FP6441-T-01	Revision	Rev A

Appendix B

Greenfield Run-off Calculation

Project:	Date:		
Land South of Bryn Lane Wrexham	04/10/2024		
	Designed by: ellie.grimsley	Checked by:	Approved By:
Report Title: UK and Ireland Rural Runoff Calculator	Company Address: Unit 5, Office Village Sandpiper Court, Chester Business Park Chester, CH4 9QZ		

ICP SUDS / IH 124

Details

Method	ICP SUDS
Area (ha)	3.27
SAAR (mm)	767.0
Soil	0.1
Region	Region 9
Urban	0
Return Period (years)	2

Results

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 2 (years) (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 9	0.6	0.6	0.6	0.5	1.1	1.3

Appendix C

Drainage Layouts

Legend

- PROPOSED SURFACE WATER DRAINAGE (TYPICALLY 100Ø FROM RWP AND 150Ø FROM GULLY UNO.)
- PROPOSED SURFACE WATER PRECAST CONCRETE MANHOLE CHAMBER.
- RWP — PROPOSED RAINWATER DOWNSPOUT (ASSUMED).
- PROPOSED FOUL DRAINAGE (TYPICALLY 100Ø UNO.)
- PROPOSED FOUL PRECAST CONCRETE MANHOLE CHAMBER.
- PROPOSED FOUL POLYPROPYLENE INSPECTOIN CHAMBER.
- FO — PROPOSED FOUL OUTLET (ASSUMED).
- PROPOSED CELLULAR ATTENUATION STORAGE SYSTEM.
- PROPOSED TANKED PERMEABLE PARKING BAY.
- SU — PROPOSED DRAINAGE CHANNEL AND SUMP OUTLET WITH A RODDABLE AIR TRAP.

Notes

1. THE WORKS SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING SPECIFICATION.
2. THE LOCATION LINE & LEVEL OF ALL KNOWN EXISTING DRAINAGE PIPEWORK INDICATED ON THE DRAWINGS ARE APPROXIMATE AND FOR GUIDANCE PURPOSES ONLY.
3. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXACT LINE AND LEVEL, BY WAY OF HAND EXCAVATED TRIAL PITS, PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION WORKS ON SITE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND MAINTAIN THE STRUCTURAL INTEGRITY OF ALL ABOVE AND BELOW GROUND SERVICE INSTALLATIONS.
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5. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR DEALING WITH AND DISPOSING OF GROUND/SURFACE WATER ENCOUNTERED DURING EXCAVATIONS
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8. UPON COMPLETION OF THE WORKS THE CONTRACTOR SHALL PROVIDE AS BUILT SETTING OUT CO-ORDINATE AND LEVEL INFORMATION.
9. PIPEWORK WITH LESS THAN 750mm OF COVER IN TRAFFICKED AREAS TO BE CONCRETE ENCASED. (BEDDING CLASS Z)
10. PIPEWORK WITH MORE THAN 750mm OF COVER TO HAVE CLASS S GRANULAR BED AND SURROUND.
11. POLYPROPYLENE INSPECTION CHAMBERS OF 500Ø > 1.2m DEEP TO BE FITTED WITH A REDUCED ACCESS FITTING.
12. ALL SOIL AND VENT PIPES TO HAVE A LOW LEVEL ACCESS PLATES.
13. FOR 3 TO 4 STORY BUILDINGS - FOUL REST BEND TO BE A MINIMUM OF -450mm DEEP.
14. FOR 5 STORY BUILDINGS AND ABOVE - FOUL REST BEND TO BE A MINIMUM OF -750mm DEEP.
15. FOR 6 STOREY BUILDINGS AND ABOVE - GROUND FLOOR APPLIANCES TO DISCHARGE TO THEIR OWN STACKS.
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S1 CL 31.212 IL 29.084 1200Ø PCC
S2 CL 31.095 IL 29.064 1200Ø PCC
S3 CL 30.868 IL 29.010 1200Ø PCC
S4 CL 30.816 IL 28.751 1500Ø PCC
S5 CL 30.718 IL 28.065 1200Ø PCC
S10 CL 30.976 IL 30.064 1200Ø PCC
S12 CL 31.809 IL 28.967 1500Ø PCC
S13 CL 30.822 IL 28.471 1500Ø PCC
S14 CL 30.620 IL 28.450 1500Ø PCC
F1 CL 30.940 IL 29.790 500Ø PPIC
F2 CL 30.875 IL 29.605 500Ø PPIC
F3 CL 30.857 IL 29.361 500Ø PPIC
F4 CL 30.920 IL 29.095 1200Ø PCC

3750Ø @ 1:300 (1.001 L=36.090m)
3750Ø @ 1:300 (1.002 L=45.692m)
3750Ø @ 1:150 (2.000 L=13.289m)
3750Ø @ 1:300 (4.000 L=18.388m)
3750Ø @ 1:150 (5.000 L=30.932m)
6000Ø @ 1:300 (1.003 L=102.106m)
6000Ø @ 1:300 (4.002 L=6.233m)
6000Ø @ 1:300 (4.003 L=97.540m)
150Ø @ 1:100

PROPOSED PRIVATE FOUL PUMP STATION TO PUMP, A PEAK FLOW RATE OF TBC LITRES PER SECOND (OCCUPANCY NUMBERS).
CL 31.303
IL TBC (Main Out)
IL 29.269 (Incoming)
IL TBC (Base)

PROPOSED 0.9m DEEP SWALE TO ACHIEVE A VOLUME OF 13.826m³. 100 YEAR EVENT +40% FOR CLIMATIC CHANGE. SLOPE SIDES TO BE AT A GRADIENT OF 1:3. LONG. SLOPE TO BE AT A GRADIENT OF 1:500. DISCHARGE RATE 0.4l/s. SWALE FINISH/ VEGETATION TO BE ADVISED BY LANDSCAPER.
Top of Swale - 30.903
Base of Swale - 30.003

ONE WAY
DROP OFF POINT
LINEAR DRAINAGE CHANNEL
RE
RG
RWP
PPM
FO
FFL: 30.940m
Mtg Room & Offices
Canteen
Plant Rm
T-Point
Server
Store
Lock
Kitchenette
Pow.Rm
Car Parking - 48 standard Spaces - 6m x 2.4m

PRELIMINARY

Rev	Date	By	Description	Appd
P2	15-11-2024	ESG	Updated to Suit Levels	WL
P1	04-11-2024	ESG	Preliminary Issue	WL

Revisions

Status: PRELIMINARY

Tier Consult Ltd.
Unit 5 Office Village
Sandpiper Court
Chester Business Park
Chester | CH4 9QZ
t: 01244 684900

Client: NET WORLD SPORTS

Project: LAND SOUTH BRYN LANE, WREXHAM

Title: FOUL AND SURFACE WATER DRAINAGE LAYOUT - SHEET 1

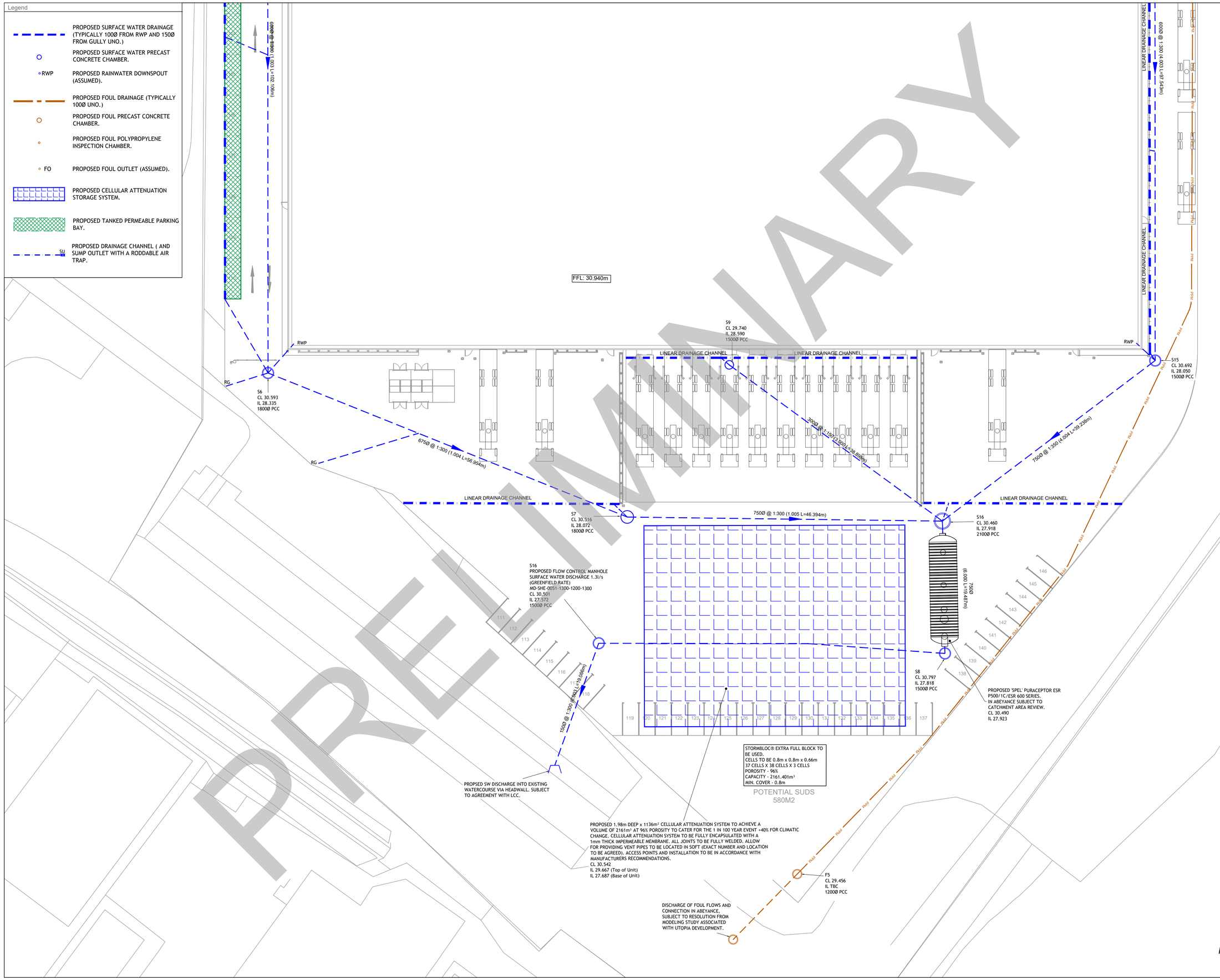
Scale	Drawn	Revision
1:250@A1	ESG	P2
Date: Nov'24	Checked: WL	

Drawing Ref : Project|Originator|Volume|Level|Type|Role|Number

2721-TCG-XX-XX-DR-C-5501

Legend

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PRELIMINARY

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Revisions

Status

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Tier Consult Ltd.
Unit 5 Office Village
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Client

NET WORLD SPORTS

Project

LAND SOUTH BRYN LANE, WREXHAM

Title

FOUL AND SURFACE WATER DRAINAGE LAYOUT - SHEET 2

Scale	Drawn	Revision
1:250@A1	ESG	P2
Date	Checked	
Nov'24	WL	

Drawing Ref :
Project|Originator|Volume|Level|Type|Role|Number

2721-TCG-XX-XX-DR-C-5502

Appendix D

Correspondence with DCWW on Foul Discharge

Outlook

PPA0008968: New commercial units on vacant land, Bryn Lane South

From Jake MacMillan <Jake.MacMillan@dwrcymru.com>
Date Wed 10/16/2024 2:37 PM
To Ellie Grimsley <Ellie.Grimsley@tieruk.com>

2 attachments (449 KB)
PPA0008968.pdf; PPA0008968 sewer plan.pdf;

Hi Ellie,

Please see the attached response to your pre planning application. I trust you will be aware of the capacity issues in the vicinity of this site, which is reflected in our response. I note however that you have an ongoing HMA with ourselves (land north of Bryn lane), and as such I can advise that it is possible to request that this site is included in any solutions that may progress to a detailed design stage, as part of a requisition application, which would negate the need to complete a HMA for this site alone.

I trust the above makes sense however if you have any questions please don't hesitate to get in touch.

Best regards,

Jake MacMillan
Development Planning Officer | Developer Services
Dŵr Cymru Welsh Water

T: 0800 917 2652 | E: 45xxx | M: +442922784445
W: dwrcymru.com
A: PO Box 3146, Cardiff, CF30 0EH
E: developer.services@dwrcymru.com

If we've gone the extra mile to provide you with excellent service, let us know. You can nominate an individual or team for a Diolch award through our website. https://www.dwrcymru.com/en/Diolch-Awards.aspx

_____ Dwr Cymru Welsh Water is firmly committed to water conservation and promoting water efficiency. Please log on to our website www.dwrcymru.com/waterefficiency to find out how you can become water wise. Mae Dwr Cymru Welsh Water wedi ymrwymo i warchod adnoddau dwr a hyrwyddo defnydd dwr effeithiol. Mae cyngor i' ch helpu i ddefnyddio dwr yn ddoeth yn www.dwrcymru.com/waterefficiency

****
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Dŵr Cymru
Welsh Water

PPA0008968 Sewer Plan

N
W E
S

LEGEND(Representative of most common features)

Waste network:

- Foul chamber
- Surface water chamber
- Combined chamber
- Combined sewer overflow (C O)
- Special purpose chamber (SPC)
- Treatment works
- Pumping station
- Outfall
- Lamphole (LH)
- Storm Overflow
- Rising main
- Gravity sewer
- Private sewer
- Private sewer subject to Sect. 104 adoption agreement (S 104)
- Private Sewer Transfer
- Lateral Drain
- Inspection Chamber

NB: Sewer symbol colour indicates the type.

RED - Combined
GREEN - Surface Water
BROWN - Foul
Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Dŵr Cymru Cyfyngedig ('the Company') gives this information as to the position of its underground apparatus by way of general guidance only and on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The onus of locating apparatus before carrying out any excavations rests entirely on you. The information which is supplied by the Company, is done so in accordance with statutory requirements of sections 198 and 199 of the Water Industry Act 1991 which is based upon the best Information available and, in particular, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or disposal main and any associated apparatus laid before 1 September 1989, or, if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of this information is entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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Miss Ellie Grimsley
Tier Consult
Unit 5 Office Village
Sandpiper Court
Chester Business Park
Cheshire
CH4 9QZ

Date: 16/10/2024
Our Ref: PPA0008968

Dear Miss Grimsley

Grid Ref: 338466 350752
Site Address: Bryn Lane Holt, Holt Wrexham LL13 9US
Development: New commercial units on vacant land

I refer to your pre-planning enquiry received relating to the above site, seeking our views on the capacity of our network of assets and infrastructure to accommodate your proposed development. Having reviewed the details submitted I can provide the following comments which should be taken into account within any future planning application for the development.

APPRAISAL

Firstly, we note that the proposal relates to a proposed warehouse employing 41 staff, and acknowledge that the site comprises of a potential windfall development with no allocated status in the Local Development Plan (LDP). Accordingly, whilst it does not appear an assessment has been previously undertaken of the public sewerage and watermains systems, we offer the following comments as part of our appraisal of this development.

Public Sewerage Network

The proposed development site is located in the immediate vicinity of a predominantly combined public sewerage system which drains to Five Fords Wastewater Treatment Works (WwTW), via Wrexham Industrial Estate Sewerage Pumping Station (SPS).

glas
Glas Cymru Cyfyngedig

Welsh Water is owned by Glas Cymru – a 'not-for-profit' company.
Mae Dŵr Cymru yn eiddo i Glas Cymru – cwmni 'nid-er-elw'.

We welcome correspondence in Welsh and English

Dŵr Cymru Cyf, a limited company registered in Wales no 2366777. Registered office: Pentwyn Road, Nelson, Treharris, Mid Glamorgan CF46 6LY

Rydym yn croesawu gohebiaeth yn y Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn Nelson, Treharris, Morgannwg Ganol CF46 6LY.

You are also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The presence of such assets may affect the proposal. In order to assist you may contact Dwr Cymru Welsh Water on 0800 085 3968 to establish the location and status of the apparatus in and around your site. Please be mindful that under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

Surface Water Drainage

As of 7th January 2019, this proposed development is subject to Schedule 3 of the Flood and Water Management Act 2010. The development therefore requires approval of Sustainable Drainage Systems (SuDS) features, in accordance with the 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems'. As highlighted in these standards, the developer is required to explore and fully exhaust all surface water drainage options in accordance with a hierarchy which states that discharge to a combined sewer shall only be made as a last resort. Disposal should be made through the hierarchical approach, preferring infiltration and, where infiltration is not possible, disposal to a surface water drainage body in liaison with the Land Drainage Authority and/or Natural Resources Wales.

It is therefore recommended that the developer consult with Wrexham County Council, as the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features. Please note, DCWW is a statutory consultee to the SAB application process and will provide comments to any SuDS proposals by response to SAB consultation. Please refer to further detailed advice relating to surface water management included in our attached Advice & Guidance note.

In addition, please note that no highway or land drainage run-off will be permitted to discharge directly or indirectly into the public sewerage system.

Foul Water Drainage – Sewerage Network

We have considered the impact of foul flows generated by the proposed development and concluded it is unlikely that sufficient capacity exists to accommodate your development without causing detriment to the existing services we provide to our customers, or in regard to the protection of the environment. There are no planned reinforcement works within Dwr Cymru Welsh Water's Capital Investment Programme and therefore, at this stage, we are unable to provide you with a point of adequacy on the network.

In light of the above our recommendation is that you instruct us to undertake a Hydraulic Modelling Assessment (HMA) which is at the developer's expense and will examine the impact of the introduction of flows from your development upon the performance of the existing network. Where required and appropriate, the HMA will then identify solutions and points of communication to ensure that your site can be accommodated within the system. For the developer to obtain a quotation for the HMA, we will require a fee of £250 + VAT. Please note that we will seek to control the outcomes of the HMA via appropriate planning conditions. However, in the absence of known solutions to accommodate your site we will not be able to support your development through the planning process. We therefore recommend that the HMA is undertaken in advance of a planning application being submitted, in order to avoid any subsequent delays. Further information on Hydraulic Modelling Assessments as well as any implications on the planning process is provided in the attached Advice & Guidance note.

Alternatively, given that the site is located in the vicinity of a combined sewer, the developer may wish to investigate and explore any opportunities to remove surface water flows from the existing public sewerage system which may provide sufficient compensation for the foul flows generated by the proposed development. Should the developer wish to explore this option, we recommend that any scheme/strategy is provided, preferably in advance of a planning application being submitted, in order for us to assess whether suitable as a solution to accommodate foul flows from the proposed development into the public sewerage system.

You may need to apply to Dwr Cymru Welsh Water for any connection to the public sewer under Section 106 of the Water industry Act 1991. However, if the connection to the public sewer network is either via a lateral drain (i.e. a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Foul Sewers and Lateral Drains, and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of www.dwrcymru.com.

Foul Water Drainage – Sewage Treatment

The proposed development site is located in the catchment of a public sewerage system which drains to Five Fords Wastewater Treatment Works (WwTW) and ultimately discharges to a river Special Area of Conservation (SAC). We would advise that this WwTW has a phosphorus consent limit and is currently compliant with the 95% quartile for its flow passed forward (FPF) performance, at the time of this consultation. Accordingly, we would advise there is currently suitable hydraulic capacity in the public sewerage system and downstream WwTW to accommodate foul water flows from the development subject of this application.

I trust the above information is helpful and will assist you in forming water and drainage strategies that should accompany any future planning application. I also attach copies of our water and sewer extract plans for the area, and a copy of our Planning Guidance Note which provides further information on our approach to the planning process, making connections to our systems and ensuring any existing public assets or infrastructure located within new development sites are protected.

Please note that our response is based on the information provided in your enquiry and should the information change we reserve the right to make a new representation. Should you have any queries or wish to discuss any aspect of our response please do not hesitate to contact our dedicated team of planning officers, either on 0800 917 2652 or via email at **developer.services@dwrcymru.com**

Please quote our reference number in all communications and correspondence.

Yours faithfully,

Rhys Evans
Planning Liaison Manager
Developer Services

***Please Note** that demands upon the water and sewerage systems change continually; consequently the information given above should be regarded as reliable for a maximum period of 12 months from the date of this letter.*