

Former Working Men's Club, Flint

Drainage Strategy

April 2026

Project Information	
Project:	Former Working Men's Club, Flint
Report Title:	Drainage Strategy
Client:	Enfys Developments Ltd
Instruction:	The instruction to undertake this Drainage Strategy was received from Luke Morris of Wales and West Housing acting on behalf of the Client.
File Ref:	16445-Drainage Strategy-02

Approval Record	
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Document History		
Revision	Date	Comment
01	20/08/2025	First issue
02	28/04/2026	Second issue – updated to include latest plans

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Introduction

Waterco has been instructed to prepare a Drainage Strategy in respect of a proposed residential development at the former Working Men's Club, Woodfield Avenue, Flint, CH6 5JQ.

The aim of this Drainage Strategy is to identify water management measures, including Sustainable Drainage Systems (SuDS), to provide surface water runoff reduction and treatment. This report has been prepared in accordance with the Welsh Government 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems' (2018) – herein referred to as 'the Statutory Standards for SuDS'.

Existing Conditions

The site covers an area of approximately 2,435m² and is located at National Grid Reference (NGR): 324587, 372394. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed April 2026) shows that the site comprises previously developed land (the remnant slab and car park of the former social club). The site is bordered by residential properties to the north-east, Woodfield Avenue to the south-east, and public open space (Pen Goch Hill) to the south-west and north-west. Access to the site is currently provided from Woodfield Avenue.

Local Topography

A topographical survey has been undertaken by Cheshire Surveys Ltd in March 2025. The topographical survey shows that the site slopes from approximately 33.71 metres Above Ordnance Datum (m AOD) in the west to 31.75m AOD in the east (at the access point off Woodfield Avenue). The south-western and north-western boundaries of the site form earth banks with levels up to 36m AOD.

Topographical data has also been derived from a 1m resolution Natural Resources Wales (NRW) composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). The LiDAR data generally corroborates the topographical survey.

Topographical information is included as Appendix B.

Ground Conditions

Published Geology

The British Geological Survey (BGS) online mapping (1:50,000 scale) shows that the site is underlain by superficial deposits of Devensian Till, generally comprising Diamicton. The superficial deposits are underlain by the Etruria Formation consisting of mudstone, sandstone and conglomerate, and the Pennine Lower Coal Measures Formation consisting of mudstone, siltstone and sandstone.

The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a site-specific basis.

The closest historical BGS borehole record (BGS reference: SJ27SW25) is located approximately 550m north of the site (NGR: 324370, 372860) and is included in Appendix C together with a borehole location plan. The borehole record identifies:

- Fill material from ground level to 3.05m below ground level (m.bgl).
- Soft grey/brown organic silty sandy clay with coal from 3.05m.bgl to 3.81m.bgl.
- Very stiff grey clayey shale with hard shale inclusions changing to hard grey shale from 3.81m.bgl to 5.87m.bgl.
- Coal from 5.87m.bgl to 6.02m.bgl
- Very stiff grey clayey shale changing to firm grey shale from 6.02m.bgl to 7.42m.bgl.

Groundwater was struck at 5.87m.bgl.

Hydrogeology

According to NRW's Aquifer Designation data, obtained from the BGS GeoIndex online mapping (accessed April 2026), the Devensian Till is classified as a Secondary Undifferentiated Aquifer. Secondary Undifferentiated Aquifers are assigned in '*cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type*'.

The bedrock geology is classified as Secondary A Aquifer. Secondary A Aquifers are '*permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers*'.

NRW's 'Source Protection Zones' data (accessed April 2026) indicates that the site is not located within a Groundwater Source Protection Zone.

Ground Investigations – Infiltration Testing

Waterco have undertaken infiltration testing in accordance with the BRE 365 specification in April 2025. Full details of the infiltration testing is included in the Waterco Infiltration Test Report (report reference: 16445-Infiltration Test Report-01).

Two trial pits were excavated by Castlemead Group Limited under supervision from Waterco. The trial pit locations were selected based on the topography, existing services (avoiding the public combined sewer which crosses the site), accessibility and health and safety requirements. The trial pits were excavated to a minimum depth of 2.45m.

The fall in water level within both trial pits was too slow for infiltration rates to be calculated. This is due to the impermeable clay geology. A water strike was recorded in trial pit 2 at 1.5m.bgl. The groundwater level in trial pit 2 was measured at 2.4m.bgl five minutes after excavating the pit.

Due to the impermeable nature of the underlying geology and groundwater encountered, infiltration drainage techniques are not considered to be feasible.

Local Drainage

Public sewer records have been obtained from Dwr Cymru Welsh Water (DCWW) and are included in Appendix D. The DCWW sewer records show that there is a 225mm public combined sewer crossing the site flowing south-east. There is also a 150mm public combined sewer located within the site which connects into the 225mm public combined sewer. The 150mm public combined sewer likely served the now demolished working men's club.

The DCWW sewer records also identify an 825mm public surface water sewer, reducing in size to 375mm, approximately 90m north-west of the site flowing north-east.

A CCTV drainage survey was carried out on the 24th April 2025 by TT Drainage and Plumbing. The manhole cards from TT Drainage and Plumbing and a trace markup by Waterco are included in Appendix E. The two public combined manhole chambers (C2 and C3) located on the 225mm public combined sewer within the site were recorded to have invert depths of 3.32m and 3.52m respectively. The 150mm public combined sewer was confirmed to be defunct and full of debris.

An inspection chamber (SJ24725499) on the 825mm public surface water sewer approximately 90m north-west of the site (within the grounds of Ysgol Pen Coch) was identified to have a depth of 2.88m. The chamber appeared to be a flow control chamber. The pipe size reduces to 375mm downstream of the flow control chamber. The 375mm pipe crosses beneath a public footpath downstream of the school.

Development Proposals

The proposed development is for residential accommodation (apartments) with an associated access road and parking. Proposed development plans are included in Appendix F.

The proposed development will introduce hardstanding areas in the form of the building, parking areas and access road. Hardstanding will comprise approximately 1,950m² or 80% of the total site area. The remaining permeable, soft landscaped areas will occupy 485m² or 20% of the total site area. Hardstanding areas have been measured from a PDF copy of the 'Proposed – Detailed Site Plan' (drawing no. WAF-HOH-XX-00-DR-A-1201-P09) by Hughes O'Hanlon Architects.

Policy Context

The Flintshire County Council Local Development Plan 2015-2030 (adopted January 2023) contains the following policy relating to drainage:

'Development Management Policies - Creating Sustainable Places and Communities (PC3: Design)

All new development should:

g. incorporate Sustainable Urban Drainage Schemes to bring about multiple benefits as an integral part of the development.'

Consultation

A pre-development enquiry request was submitted to DCWW in March 2025. In their response (Appendix D), DCWW have stated that:

'Asset Protection

This site is crossed by public sewers and within the immediate vicinity of a water main with their approximate position being marked on the attached Statutory Public Sewer Record. In accordance with the Water Industry Act 1991, Dwr Cymru Welsh Water requires access to its apparatus at all times in order to carry out maintenance and repairs. No part of any building will be permitted within the protection zone of the public sewers measured 3 metres either side of the centreline. Please note, the distance specified for this protection zone is indicative and based on industry standard guidelines. However, the depth of the asset will need to be verified on site which may infer a greater protection zone. For completeness, we recommend the developer refer to their title deeds to confirm if there are any covenants or restrictions associated with the asset(s) crossing the proposed development site.'

Foul Drainage

We have considered the impact of foul flows generated by the proposed development and concluded that flows can be accommodated within the public sewerage system. We advise that the flows should be connected to the foul sewer at manhole SJ24726302 located to the south east. Should a planning application be submitted for this development we will seek to control this point of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.

Foul Water Drainage – Sewage Treatment

No problems are envisaged with the Waste Water Treatment Works for the treatment of domestic discharges from this site.

Potable Water Supply

A water supply can be made available to service this proposed development. Initial indications are that a connection can be made from the '3inch' diameter watermain in '324632,372359' location. The cost of providing new on-site watermains can be calculated upon the receipt of detailed site layout plans which should be sent to the above address.'

The proposed site layout makes an allowance for the 3m easement from the 225mm public combined sewer. As described above, the 150mm public combined sewer was surveyed and confirmed to be defunct and full of debris. The 150mm public combined sewer will therefore be abandoned as part of the development.

DCWW were asked to confirm if it would be acceptable to abandon the 150mm public combined sewer. In their response (Appendix D), DCWW stated *'we would need it to be proven via investigation that it is no longer in use, and if so then we may be able to conduct a deed of release to de-vest the sewer.....suggest the best port of call would be to phone it in as a blockage so that our operations team can visit and determine whether the sewer needs to be unblocked and to then allow further investigation to prove its function'*.

DCWW were also asked to confirm if it would be acceptable to discharge surface water to the public surface water located approximately 90m north-west of the site. In their response (Appendix D), DCWW stated *'Based on the information provided, and the fact the development does not propose to communicate surface water flows into the combined sewer, I would anticipate the principle of forming a connection into the surface water sewer would be acceptable but we're seeking further information on its condition'*. DCWW have since stated that *'our network operations team have fed back and in principle we would be happy for your own suitably qualified contractor to undertake a connection into the 375mm SW sewer, subject to detail for your mode of connection'*.

Surface Water Management

The proposed development will include approximately 1,950m² of hardstanding in the form of the apartment building, car parking and access road.

The increase in hardstanding area will result in an increase in surface water runoff rates and volumes. In order to ensure the proposed development will not increase flood risk elsewhere, and to comply with the Statutory standards for SuDS, surface water discharge from the site will be controlled.

Discharge Method

Standard S1 of the Statutory Standards for SuDS sets out the following hierarchy of drainage options:

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

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

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

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

Priority Level 5: Surface water runoff is discharged to a combined sewer.

Priority Level 1: Surface water runoff collected for use

In line with section G1.4 of the Statutory Standards for SuDS, rainwater harvesting is not proposed for this site as:

1. There is no foreseeable need to harvest water at the site as DCWW water resources and drought management plans do not identify potential stresses on mains water supplies;
2. The use of rainwater harvesting is not a viable/ cost-effective part of the solution for managing surface water runoff on the site, taking account of the potential water supply benefits of such a system.

With regards to point 2 above, section G1.6 of the Statutory Standards for SuDS states that; in most cases, rainwater harvesting alone will not be adequate to deal with the site drainage and provision will be required for an overflow to a Level 2 or lower priority runoff destination. As downstream provision of attenuation storage will be required to accommodate for rainwater harvesting system overflows, rainwater harvesting is not considered a cost-effective solution for managing surface water runoff.

Water butts will be installed on rainwater downpipes for external water re-use (watering of garden areas).

Priority Level 2: Surface water runoff is infiltrated to ground

As described above, infiltration tests have been carried out by Waterco in April 2025. The infiltration test results show that due to the impermeable nature of the underlying geology, infiltration techniques are not feasible for this site.

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

The nearest watercourse is Swinchiard Brook which is located over 500m west of the site and separated from the site by third party, urbanised land. A connection to a watercourse is therefore not a feasible option.

Priority Level 4: Discharge to a surface water sewer or highway drain

A connection to the public surface water sewer system is the next consideration. There is a 375mm public surface water sewer located approximately 90m north-west of the site. The public surface water sewer is situated at approximately 28.5m AOD and is approximately 3.25m below the lowest site level. As confirmed by a survey, the sewer is approximately 2.88m deep in this location, placing its invert at approximately 6.13m below site levels. As such, a gravity connection can be achieved.

A connection to the public surface water sewer would require crossing through Flintshire County Council owned land (Pen Goch Hill open space). DCWW have been consulted (Appendix D) and have confirmed that a connection to the public surface water sewer is acceptable in principle.

A connection to the public surface water sewer 90m north-west of the site (where the sewer is located in Flintshire County Council owned land) is proposed. Discharge will be made at a limited discharge rate.

Discharge Rate

In order to establish the proposed limited discharge rate, the existing greenfield runoff rates have been estimated using the Revitalised Flood Hydrograph Model (ReFH2) method. FEH22 rainfall data has been

obtained from the Flood Estimate Handbook (FEH) web service and used for the ReFH2 analysis. A summary of the greenfield runoff rates for a range of events is provided as Appendix G. The existing 1 in 1 year greenfield runoff rate for the 0.2435ha site is 0.9 l/s.

A discharge rate of 2 l/s is proposed for the development to minimise the risk of drainage system blockage.

Attenuation Storage

In order to achieve a discharge rate of 2 l/s, attenuation storage will be required. An attenuation storage estimate has been undertaken using MicroDrainage and is included in Appendix H. An estimated storage volume of 154m³ will be required to accommodate the 1 in 100 year plus 30% Climate Change (CC) event. The storage estimate is based on a discharge rate of 2 l/s, storage within a tank structure, an impermeable drainage area of 1,950m², a design head of 2m and hydro-brake flow control.

The attenuation storage estimate is provided for indicative purposes only and will be verified at the detailed design stage.

Proposed Drainage System

Attenuation storage will be provided in the form of an underground attenuation tank located beneath the car park and landscaped area in the north-western extent of the site. A 27m long x 3m wide x 2m deep geo-cellular attenuation tank with a 95% void ratio will provide 153.9m³ of storage, which together with storage in upstream chambers and pipework is sufficient to accommodate the 1 in 100 year plus 30% CC event. The storage tank will be placed a minimum of 3m from the public combined sewer which crosses the site.

A rain garden will also be proposed in the landscaped area above the attenuation tank to provide amenity and biodiversity benefits. Gullies from the western extent of the access road could drain into the raingarden. A gully within the raingarden (raised slightly above the raingarden base as to protect against siltation) will discharge flow from the raingarden to the attenuation tank.

Concept Surface Water Drainage Scheme

Surface water runoff will be discharged to the 375mm public surface water sewer 90m north-west of the site at a limited discharge rate of 2 l/s. Surface water runoff up to the 1 in 100 year plus 30% CC event will be attenuated on site. A total attenuation volume of 153.9m³ will be required to achieve the discharge rate and will be provided in the form of an underground attenuation tank located beneath the car park and landscaped area in the north-western extent of the site. The storage tank will be placed a minimum of 3m from the public combined sewer which crosses the site.

A concept drainage sketch is provided as Appendix I.

Exceedance Event

Storage will be provided for the 1 in 100 year plus 30% CC event. Storm events in excess of the 1 in 100 year plus 30% CC event should be permitted to produce temporary shallow depth flooding within the car park and access road. Finished floor levels should be set at a minimum of 150mm above surrounding ground levels ensuring exceedance flooding will not affect the building.

Surface Water Treatment

The Statutory Standards for SuDS sets out the following guidance for surface water treatment:

S3 - Surface water quality management

Treatment for surface water runoff should be provided to prevent negative impacts on the receiving water quality and/or protect downstream drainage systems, including sewers.

In accordance with the CIRIA C753 publication 'The SuDS Manual' (2015), residential roofs have a 'very low' pollution hazard level, with low traffic roads and residential car parking classified as having a 'low' pollution hazard level. Table 1 shows the pollution hazard indices for each land use.

Table 1 – Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05
Low Traffic Roads	Low	0.5	0.4	0.4

Table extract taken from the CIRIA C753 publication 'The SuDS Manual' – Table 26.2

* Indices values range from 0-1.

Runoff from roof and roads will be directed to an attenuation tank. Sufficient treatment will be provided in the form of a proprietary treatment system such as the SDS Aqua-swirl located downstream of the attenuation tank. Table 2 shows that a proprietary treatment system such as the SDS Aqua-swirl provides sufficient treatment.

Table 2 – SuDS Mitigation Indices

Type of SuDS	Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydrocarbons
SDS Aqua-swirl	0.8	0.5	0.7

Table extract taken from the CIRIA C753 publication 'The SuDS Manual' – Table 26.3

Amenity

The Statutory Standards for SuDS provide the following guidance in relation to Standard S4 – Amenity:

'The design of the surface water management system should maximise amenity benefits.'

The proposed development will include a rain garden which will maximise the amenity value of the proposed drainage system.

Biodiversity

The Statutory Standards for SuDS provide the following guidance in relation to Standard S5 – Biodiversity:

'The design of the surface water management system should maximise biodiversity benefits.'

The proposed rain garden will maximise the biodiversity value of the proposed drainage system.

Construction, Operation and Maintenance

Standard S6 of the Statutory Standards for SuDS states:

S6 – Design of drainage for Construction, Operation and Maintenance

- 1) All elements of the surface water drainage system should be designed so that they can be constructed easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).
- 2) All elements of the surface water drainage system should be designed to ensure maintenance and operation can be undertaken (by the relevant responsible body) easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).
- 3) The surface water drainage system should be designed to ensure structural integrity of all elements under anticipated loading conditions over the design life of the development site, taking into account the requirement for reasonable levels of maintenance.

All drainage systems will be readily accessible for maintenance access.

Maintenance of the drainage system will be the responsibility of the site owner (Wales and West Housing Association).

Maintenance schedules for an attenuation tank, flow control chamber and bioretention system (applicable to the rain garden) are included in Appendix J.

Other Considerations

The proposed flow control chamber located on the proposed surface water drainage system (discharging surface water from the site to the public surface water sewer) will have an approximate invert level of 29.745m AOD. Public combined manhole SJ24725402 (on site) has an invert level of 28.97m AOD. The proposed surface water drain can therefore cross above the 225mm public combined sewer.

Foul Drainage

A pre-development enquiry request was submitted to DCWW in March 2025 with respect to connecting development foul flows to the public sewer. A response is included in Appendix D. DCWW have stated that:

'We have considered the impact of foul flows generated by the proposed development and concluded that flows can be accommodated within the public sewerage system. We advise that the flows should be connected to the foul sewer at manhole SJ24726302 located to the south east. Should a planning application be submitted for this development we will seek to control this point of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted...'

No problems are envisaged with the Waste Water Treatment Works for the treatment of domestic discharges from this site'.

It is therefore proposed to discharge foul flows to the 225mm public combined sewer which crosses the site. It is noted that manhole SJ24726301 is located within the site boundary, on the same 225mm public combined sewer as downstream manhole SJ24726302. Public foul manhole SJ24726301 has an invert level of 28.81m AOD and is 3.32m deep. A gravity connection can therefore be achieved.

Conclusions

The proposed development is for an apartment building, car park and access road.

The proposed development will include hardstanding area in the form of the building, car park and access road. In order to comply with the Statutory standards for SuDS, flow control will be used and attenuation provided on site to accommodate storm events up to and including the 1 in 100 year plus 30% climate change event.

All methods of surface water discharge have been assessed. Infiltration techniques are not feasible and there are no watercourses in the vicinity of the site. Discharge to the 375mm public surface water sewer located approximately 90m north-west of the site is the only alternative option. Discharge will be made at a limited runoff rate of 2 l/s to minimise the risk of blockage.

Attenuation storage will be required on site in order to restrict surface water discharge to 2 l/s. Attenuation can be provided within an underground attenuation tank located beneath the car park in the north-western extent of the site. The storage tank will be placed a minimum of 3m from the public combined sewer which crosses the site.

Treatment of surface water will be provided by a proprietary treatment system located downstream of the attenuation tank. The site owner will be responsible for the maintenance of the drainage system.

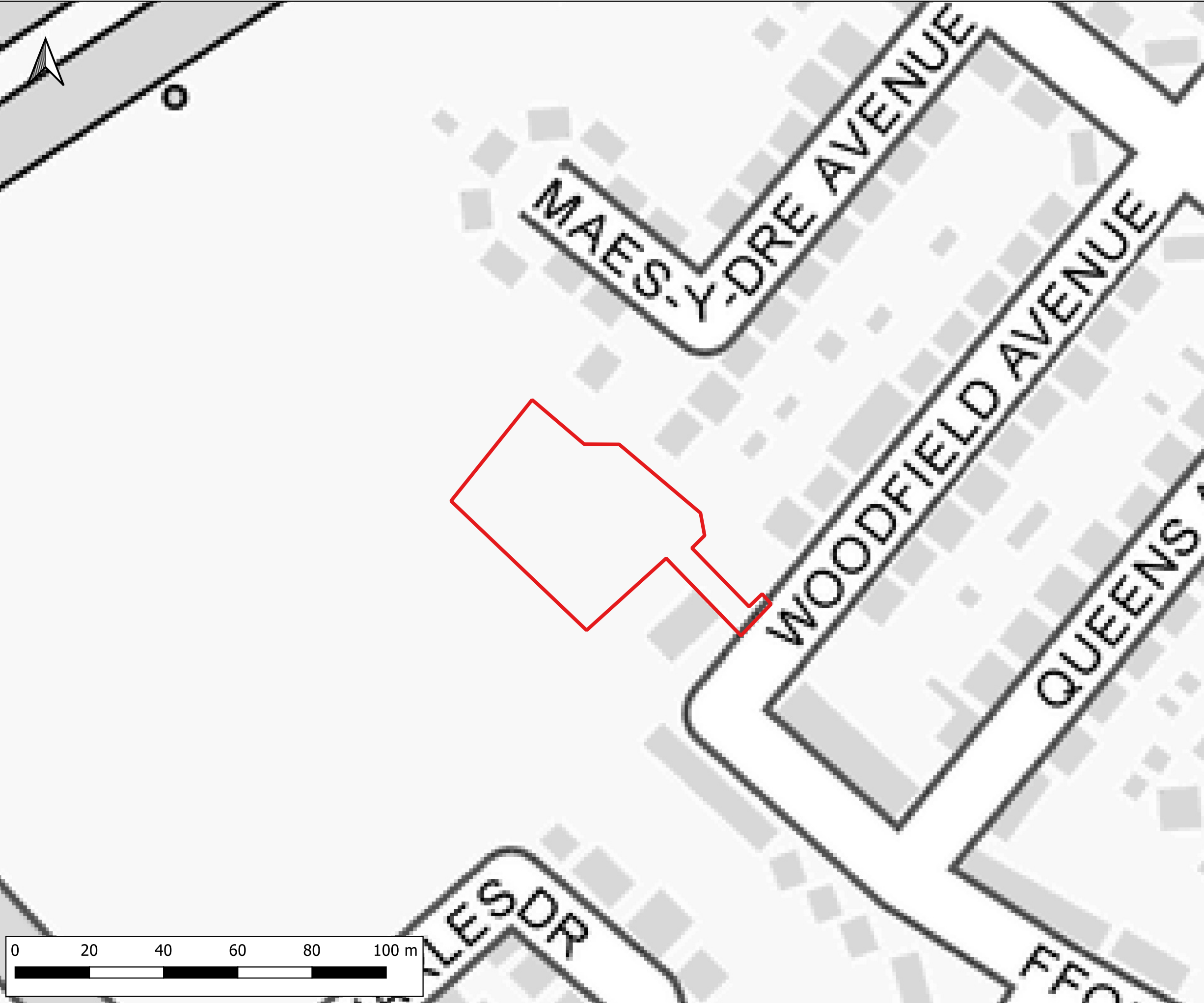
DCWW have confirmed that foul flows can discharge to 225mm public combined sewer which crosses the site. A gravity connection can be achieved.

A Concept Designer's Risk Assessment (cDRA) has been prepared to inform future designers of any identified hazards associated with the scheme. The cDRA has been included in Appendix K.

Recommendations

1. Submit this Drainage Strategy to the Planning Authority in support of the Planning Application.
2. Verify the attenuation volumes included in this report when undertaking detailed drainage design.

Appendix A Location & Aerial Plan



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

CLIENT:

Enfys Developments Ltd

www.waterco.co.uk

SCHEME:

Former Working Men's Club, Flint

PLOT TITLE:

Location Plan

PLOT STATUS:		FINAL		DATE:	28-04-2026			
DRAWN:	JP	CHECKED:	AW	APPROVED:	NJ	PLOT SCALE AT A3:	1:1000	
PLOT NAME:					16445_Location_Plan		REVISION:	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

CLIENT:

Enfys Developments Ltd

www.waterco.co.uk

SCHEME:

Former Working Men's Club, Flint

PLOT TITLE:

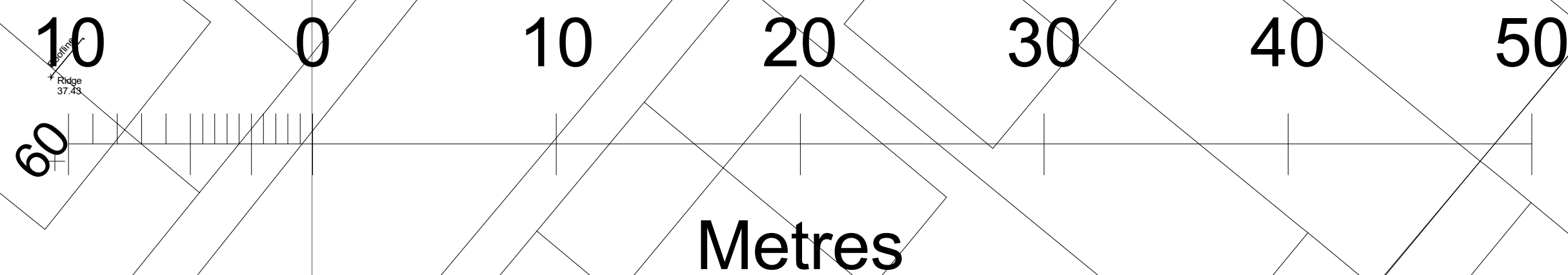
Aerial Plan

PLOT STATUS:		DATE:	
FINAL		28-04-2026	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
JP	AW	NJ	1:1000

PLOT NAME:	REVISION:
16445_Aerial_Plan	-

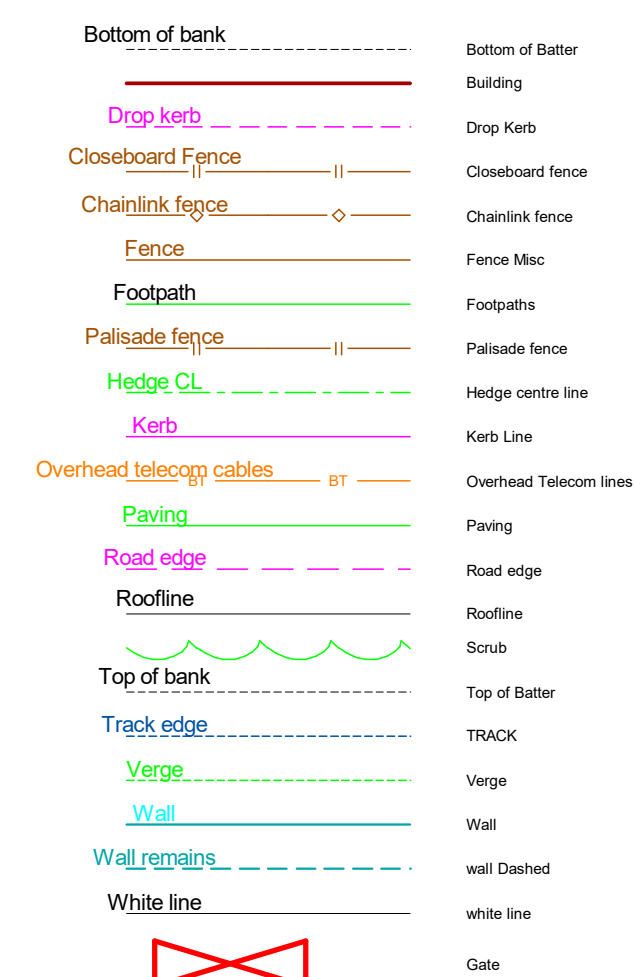
Appendix B Topographical Information



Metres

Topographical Surveys - Measured Building Surveys - 3D Laser Scanning - Check Surveys
Monitoring Surveys - Deformation Surveys - Volumetric Surveys - Levelling - Setting Out

All efforts have been made to survey all utility services within the boundary of the survey. We can not guarantee that we have been able to locate everything and further investigation will be required to establish full extents of services.



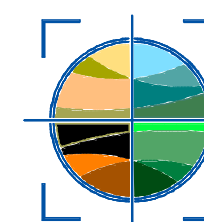
Drawing Contains OS data. 169 Crown Copyright
& database rights 2025 100019980 (12 month licence)

SURVEY STATIONS			
Name	Easting	Northing	Height
A1	324641.079	372354.348	30.889
A1A	324639.127	372352.140	31.256
A1B	324657.474	372374.167	29.360
A2	324611.669	372377.492	32.677
A2A	324627.638	372376.797	31.655
A3	324584.364	372397.530	32.750
A4	324542.930	372388.226	32.752

Notes:
This survey is to a local grid orientated to OS grid. Position is only true at one point to OS coordinates
Horizontal and vertical control established using SmartNet GPS Network and OSGB36(15) coordinate System

- Topographical Surveys
- Measured Building Surveys
- 3D Laser Scanning
- Deformation Surveys
- Floor Level Surveys

Topographical Surveys		Residential Setting out
Measured Building Surveys		Volumetric Surveys
3D Laser Scanning		Commercial Setting out
Deformation Surveys		3D Ground Modelling
Floor Level Surveys		Monitoring



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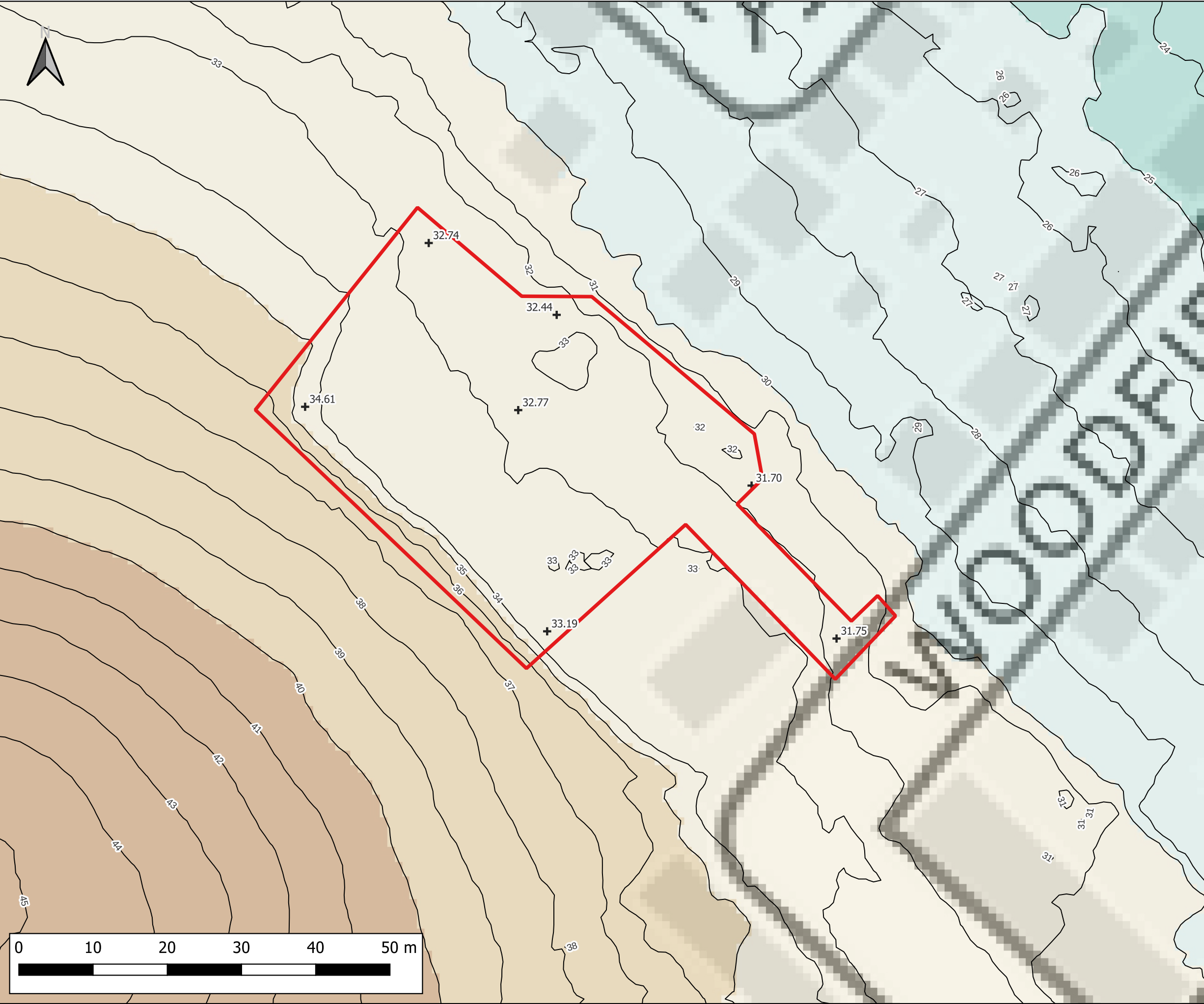
Unit 2, Barrowmore Enterprise Estate, Gt Barrow, Chester CH3 7JS
Email : info@cheshiresurveys.co.uk Tel: 01829 741859 / Mob: 077 7474 1397
Web: Cheshiresurveys.co.uk, Find Us on: Facebook Twitter & LinkedIn

Client Enfys Developments Ltd

Location	Former Flint's WMC, Flint
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Description
Topographical Survey

	Client	Cntrct	N4ce	Mdl	Sheet	Rev.
Drg. No.:	0703	4967	01	01	01	*
Date:	06/03/2025		Scale: 1:200		@A1	
Surveyed By: GF			Drawn By:GF			



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site boundary
- 1m contour
- Site Levels (m AOD)

Ground Elevations (m AOD)

- <= 25.0
- 25.0 - 30.0
- 30.0 - 35.0
- 35.0 - 40.0
- > 40.0

CLIENT:

Enfys Developments Ltd

www.waterco.co.uk

SCHEME:

Former Working Men's Club, Flint

PLOT TITLE:

LiDAR Plan
1m Resolution
Data from Natural Resources Wales

PLOT STATUS:			FINAL	DATE:	28-04-2026
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:		
JP	AW	NJ	1:500		
PLOT NAME:				REVISION:	
16445_LiDAR_Plan				-	

Appendix C BGS Borehole Record and Location Plan



SJ27SW/25

SOIL SURVEYS LTD.
MANCHESTER.

BJREN

2487 7296

EXPLORATORY BORING RECORD

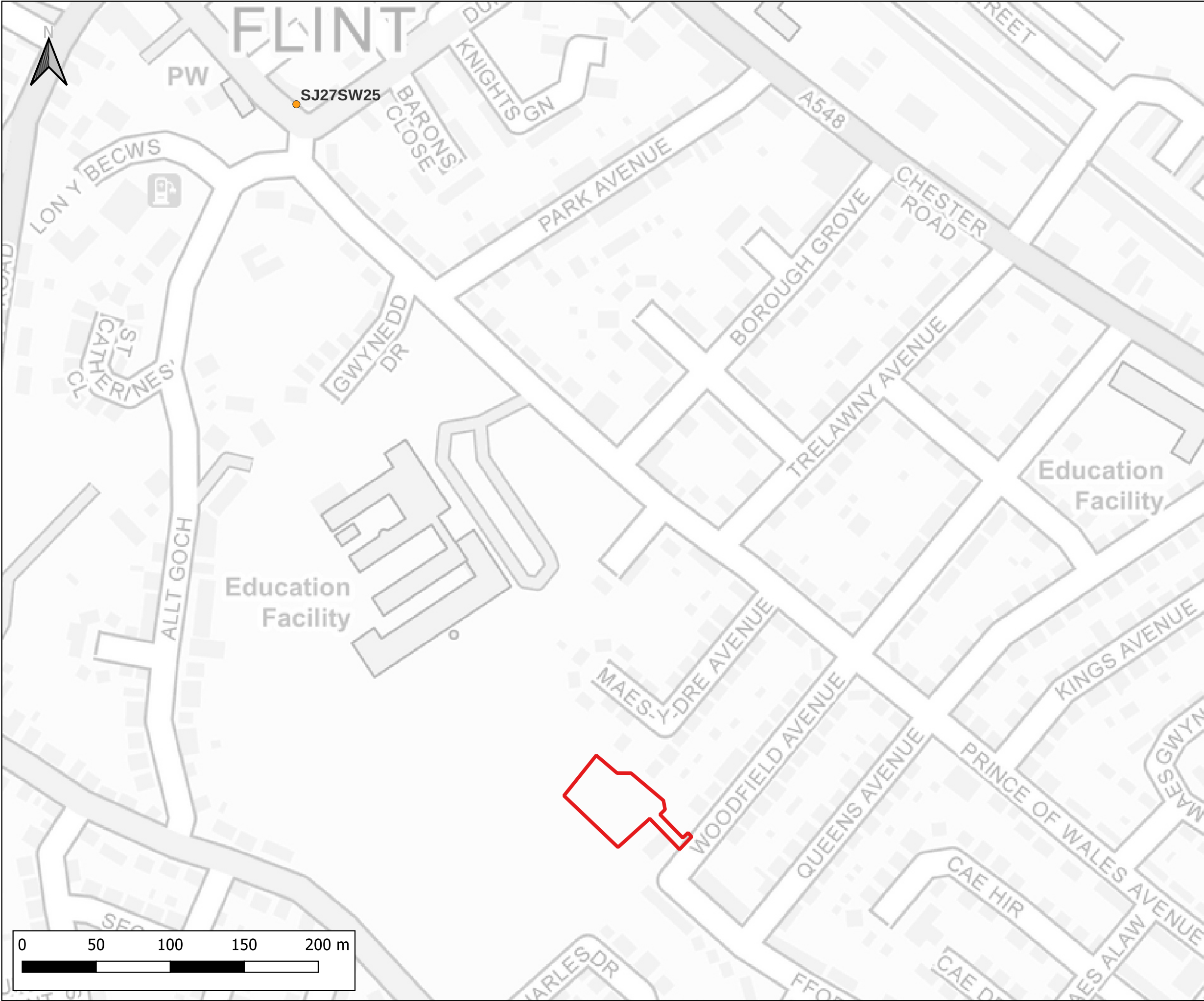
SITE		Flint		Ref.	
Boring Method		Shell		Ground Level	
DATE	DIA. OF CASING & DEPTH BELOW S.L.	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW S.L.	STRATA	NO. OF SAMPLES
				APPROX. SCALE FT. TO ONE INCH	
25.10.68	8" 0.20	Nil		Soil, bones, etc (Fill material)	1
			2'05		2
			10'0"		3
					4
					5
					6
					7
					8
				Soft grey/brown organic silty sandy clay with coal and shell inclusions (disturbed or possible fill material)	9
			3'81		10
			12'6		11
					12
					13
23.10.68	12" 3.29	Nil		Very stiff grey clayey shale with hard shale inclusions	14
24.10.68		Nil		changing to Hard grey shale	15
			5'87		16
			19'3"		17
			6'02	Coal	18
			19'9		19
				Very stiff grey clayey shale	20
				changing to	21
24.10.68	4'42	7'42	24'4	Firm grey shale	22
	14'6				23

Samples shown thus: Disturbed O. Undisturbed U. Standard Pen. Test X. Water

WATER SURFACE AT THE FOLLOWING DEPTHS	DEPTH OF CASING WHEN SEALED (IN S. - NOT SEALED)	ESTIMATED SEEPAGE	WATER ADDED AT FOLLOWING DEPTHS TO ASSIST BORING	WATER LEVEL IN CASING (WHEN BORING STOPPED)
				DATE
1. 19'3" 5.87	N.S.	Medium		25.10.68 2.59
2.				
3.				
4.				
5.				
6.				

REMARKS:

1. No initial penetration for S.P.T. sample No 12 and 13
- ii) Chiselling required in shale (4 hours)



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- BGS Borehole Location

CLIENT:

Enfys Developments Ltd

www.waterco.co.uk

SCHEME:

Former Working Men's Club, Flint

PLOT TITLE:

Historical BGS Borehole Location Plan
Data from British Geological Survey (BGS)

PLOT STATUS:			DATE:
FINAL			28-04-2026

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
JP	AW	NJ	1:2500

PLOT NAME:	REVISION:
16445_BGS_Borehole_Location_Plan	-

Appendix D DCWW Sewer Plan and Correspondence



LEGEND(Representative of most common features)

	Foul chamber		Outfall
	Surface water chamber		Lamp hole
	Combined chamber		Storm Overflow
	Combined sewer overflow		Rising main
	Special purpose chamber		Gravity sewer
	Treatment works		Private sewer
	Pumping station		Private sewer subject to Sect. 104 adoption agreement
NB: Sewer symbol colour indicates the type.			
RED	- Combined		Private Sewer Transfer
GREEN	- Surface Water		Lateral Drain
BROWN	- Foul		Inspection Chamber
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.

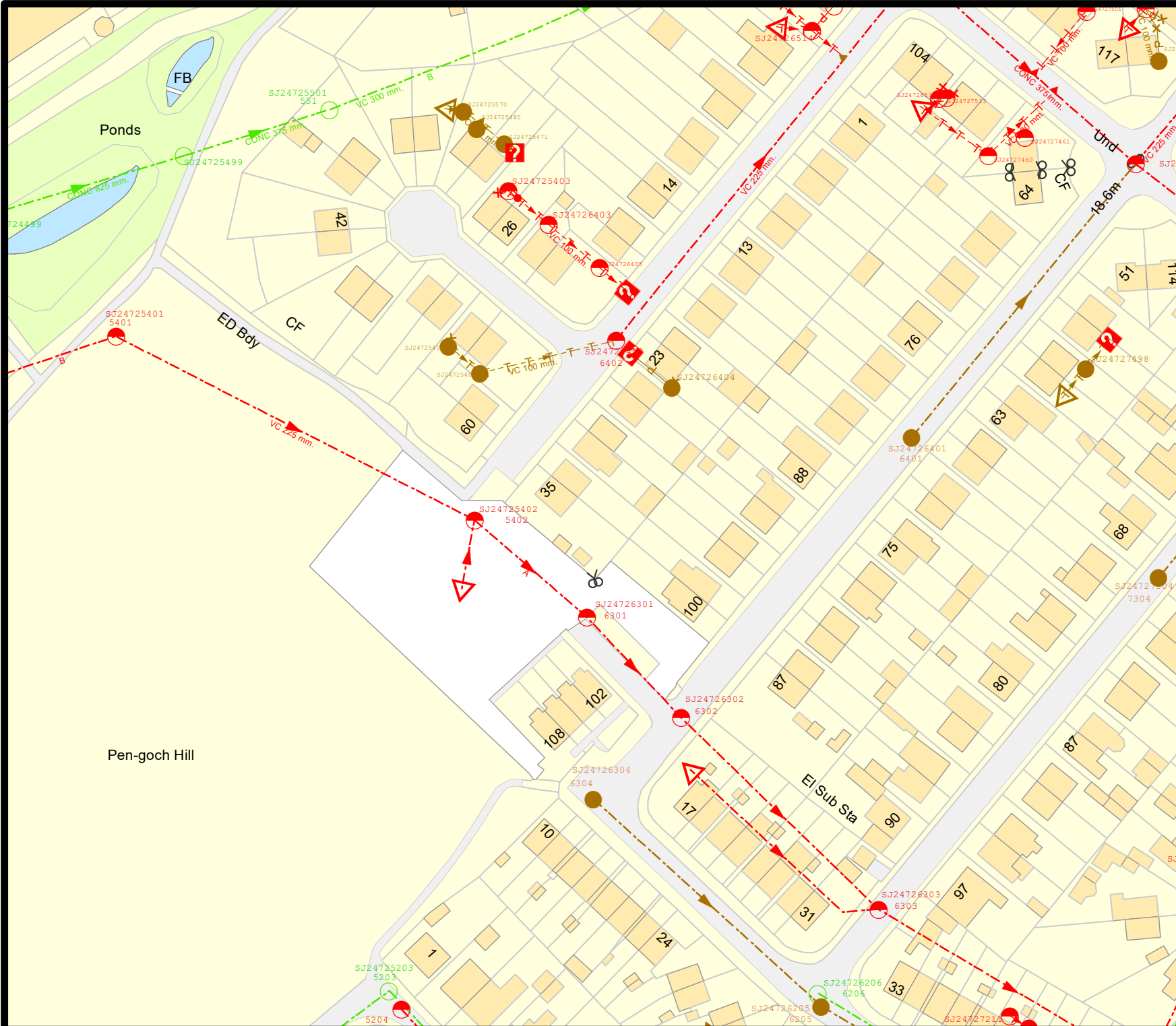
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Service pipes are not generally shown but their presence should be anticipated.

**EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.**

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Map Ref: 324618,372406
Map scale: 1:1200
Printed by: Helen Dartnell
Printed on: 01 Apr 2025



Mr Jack Pugh,
Waterco,
Ruthin,
Denbighshire,
LL15 1NJ

Date: 01/04/2025
Our Ref: PPA0009299

Dear Mr Pugh,

Grid Ref: 324589 372389

Site Address: Flint, Flintshire, CH6 5JQ

Development: Residential development of 18 units

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.

Firstly, we note that the proposal relates to a proposal to a proposed residential development comprising 18 residential units on part of a site known as 'Former Working Men's Club'.

We acknowledge that the site represents part of the allocated (Ref: housing commitment HC.17) housing within the Local Development Plan (LDP) for 11 units remaining for the site as of 2018.

We offer the following comments as part of our appraisal of this development.

ASSET PROTECTION

This site is crossed by public sewers and within the immediate vicinity of a water main with their approximate position being marked on the attached Statutory Public Sewer Record. In accordance with the Water Industry Act 1991, Dwr Cymru Welsh Water requires access to its apparatus at all times in order to carry out maintenance and repairs. No part of any building will be permitted within the protection zone of the public sewers measured 3 metres either side of the centreline. Please note, the distance specified for this protection zone is indicative and based on industry standard guidelines. However, the depth of the asset will need to be verified on site which may infer a greater protection zone. For completeness, we recommend the developer refer to their title deeds to confirm if there are any covenants or restrictions associated with the asset(s) crossing the proposed development site.

Accordingly, it is recommended that the developer contact our Plan and Protect team (PlanandProtect@dwrcymru.com) to carry out a survey to verify the location of this asset and establish its relationship to the proposed development. Our strong recommendation is that your site layout takes into account the location of the assets crossing the site and should be referred to in any master-planning exercises or site layout plans submitted as part of any subsequent planning application. Further information regarding Asset Protection is provided in the attached Advice & Guidance note.

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 preferring infiltration (PL2) and, where infiltration is not possible, disposal to a surface water body (PL3), in liaison with the Lead Local Flood Authority and/or Natural Resources Wales, or surface water sewer or highway drain (PL4) in liaison with the riparian owner and/or Local Highways Authority.

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 and our Developer Services website at <https://developers.dwrcymru.com/en/help-advice/regulation-to-be-aware-of/sustainable-drainage-systems>



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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.

In the absence of an accompanying surface water drainage strategy, it is recommended that the developer engage in consultation with Flintshire County Council, as the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features. Please be advised that due to capacity constraints with the downstream public sewerage network, under no circumstances would we allow surface water runoff highway run-off from the proposed development to communicate directly or indirectly with the public combined sewerage system. In addition, please note, no amount of highway or land drainage run-off is permitted to discharge directly or indirectly into the public sewerage system.

Furthermore, Planning Policy Wales (PPW) acknowledges that discharge of surface water to foul sewers is prohibited and highlights that any additional surface water from new developments should not be discharged to combined systems because of the risk of pollution when combined systems overflow (Para 6.6.3). Moreover, PPW recognises the challenges faced from rainfall intensity causing surface water flooding and diffuse pollution (Para 6.6.14) along with the importance of well-maintained sewerage networks (Para 6.6.15), particularly as a result of run-off from built surfaces and the sewage discharges from overloaded sewers (Para 6.6.16).

FOUL WATER DRAINAGE – SEWERAGE NETWORK

We have considered the impact of foul flows generated by the proposed development and concluded that flows can be accommodated within the public sewerage system. We advise that the flows should be connected to the foul sewer at manhole SJ24726302 located to the south east. Should a planning application be submitted for this development we will seek to control this point of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.

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



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We welcome correspondence in
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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.

FOUL WATER DRAINAGE – SEWAGE TREATMENT

No problems are envisaged with the Waste Water Treatment Works for the treatment of domestic discharges from this site.

POTABLE WATER SUPPLY

A water supply can be made available to service this proposed development. Initial indications are that a connection can be made from the '3inch' diameter watermain in '324632,372359' location. The cost of providing new on-site watermains can be calculated upon the receipt of detailed site layout plans which should be sent to the above address.

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.



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

Jack Pugh

From: Sion Jones <Sion.Jones@dwrcymru.com>
Sent: 23 June 2025 14:48
To: Jack Pugh
Cc: Adam Caldwell; Shan Wyn Jones
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE
Attachments: PPA0009299 - Sewer Plan.pdf; Location & Aerial Plan.pdf

Caution: This is an external email and may be malicious. Please take care when clicking links or opening attachments.

Hi Jack,

Thanks for your e-mail, which Adam has forwarded for my awareness and I'm aware @Shan Wyn Jones is in ongoing discussions with our colleagues in relation to the condition and status of the receiving sewer. Based on the information provided, and the fact the development does not propose to communicate surface water flows into the combined sewer, I would anticipate the principle of forming a connection into the surface water sewer would be acceptable but we're currently seeking further information on its condition. I'll ask Shan to update once we have further information on this and in anticipation of any future SAB application consultation.

Regards,

Siôn



Siôn Jones

Development Growth and Strategy Manager | Developer Services
Dŵr Cymru Welsh Water



W: dwrcymru.com



E: developer.services@dwrcymru.com



T: 0800 917 2652 | M: 07770856624



A: PO Box 3146, Cardiff, CF30 0EH



Before you print please think about the ENVIRONMENT

From: Jack Pugh
Sent: 29 May 2025 10:29
To: 'shanwyn.jones@dwrcymru.com' <shanwyn.jones@dwrcymru.com>
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE

Hi Shanwyn,

Just following up on the below. Please can you provide a response to the first email in this chain at your earliest convenience.

Many thanks,

Jack Pugh BSc (Hons)
Environmental Consultant



jack.pugh@waterco.co.uk



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Please consider the environment before printing this email.

From: Jason Buckley <Jason.Buckley@dwrcymru.com>
Sent: 13 May 2025 11:45
To: Jack Pugh <jack.pugh@waterco.co.uk>
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE

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Hi Jack,

No problem. I've sent your query over to our development control officer for Flintshire (shanwyn.jones@dwrcymru.com), as it's in their remit to comment on connections to public sewerage. If you don't hear back in due course please let me know and I can chase it up.

Regards,
Jason



Jason Buckley
Project Engineer | Developer Services
Dŵr Cymru Welsh Water



W: dwrcymru.com



E: developer.services@dwrcymru.com



T: 07557812828 / 0800 917 2652



A: PO Box 3146, Cardiff, CF30 0EH



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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](#)

From: Jack Pugh <jack.pugh@waterco.co.uk>
Sent: 13 May 2025 11:39
To: Jason Buckley <Jason.Buckley@dwrcymru.com>
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE

***** External Mail *****

Hi Jason,

Thank you for your reply, it's very helpful.

I would appreciate if you could also provide a response to (or forward on) the first email in this chain (dated 16th April at 14:05). I have attached a site location plan and the sewer records for reference.

Kind regards,

Jack Pugh BSc (Hons)
Environmental Consultant

 jack.pugh@waterco.co.uk



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 Please consider the environment before printing this email.

From: Jason Buckley <Jason.Buckley@dwrcymru.com>
Sent: 06 May 2025 09:12
To: Jack Pugh <jack.pugh@waterco.co.uk>
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE

Caution: This is an external email and may be malicious. Please take care when clicking links or opening attachments.

Hi Jack,

Hope you're well. Your below query has made it through to me as adoptions/diversions engineer for Flintshire.

Regarding the abandonment of the sewer, we would need it to be proven via investigation to confirm that it is no longer in use, and if so then we may be able to conduct a 'deed of release' to de-vest the sewer. There is a legal fee for this and I can find out an exact figure for you if needed.

I would suggest the best port of call would be to phone it in as a blockage (0800 085 3968) so that our operations team can visit and determine whether the sewer needs to be unblocked and to then allow further investigation to prove its function.

Hopefully this helps but let me know if you have any queries.

Regards,
Jason



Jason Buckley
Project Engineer | Developer Services
Dŵr Cymru Welsh Water



W: dwrcymru.com



E: developer.services@dwrcymru.com



T: 07557812828 / 0800 917 2652



A: PO Box 3146, Cardiff, CF30 0EH



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From: Jack Pugh <jack.pugh@waterco.co.uk>
Sent: 30 April 2025 16:26
To: Services Developer <developer.services@dwrcymru.com>
Subject: RE: 16445-Former Working Men's Club, Flint-DCWW PPE

***** External Mail *****

Dear Sir/Madam,

Further to the below email, a drainage survey has recently been undertaken, and the findings showed the 150mm combined sewer on site to be defunct and full of debris (see attachment). Please can you confirm if it would be acceptable to abandon this sewer?

Kind regards,

Jack Pugh BSc (Hons)
Environmental Consultant

 jack.pugh@waterco.co.uk



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 Please consider the environment before printing this email.

From: Jack Pugh
Sent: 16 April 2025 14:05
To: 'Services Developer' <developer.services@dwrcymru.com>
Subject: 16445-Former Working Men's Club, Flint-DCWW PPE

Dear Sir/Madam,

Further to receipt of pre-planning enquiry ref:PPA0009299, we have undertaken infiltration testing and can confirm that infiltration techniques will not be feasible due to the presence of clay and high groundwater. As there are no watercourses in the vicinity of the site, we are seeking to connect surface water to the public surface water sewer crossing the school grounds approximately 100m north-west of the site. Please can you advise if a connection to the surface water sewer is acceptable in principle and advise of any restrictions on flow rates.

In relation to foul flows, please could a connection be made to one of the chambers on the 225mm public combined sewer within the site (SJ24725402 / SJ24726301)? A recent CCTV confirmed the depth of the 225mm public combined sewer to be 3.52m. Please can you confirm if the protection zone remains 3m either side of the centre line.

Kind regards,

Jack Pugh BSc (Hons)
Environmental Consultant

 jack.pugh@waterco.co.uk



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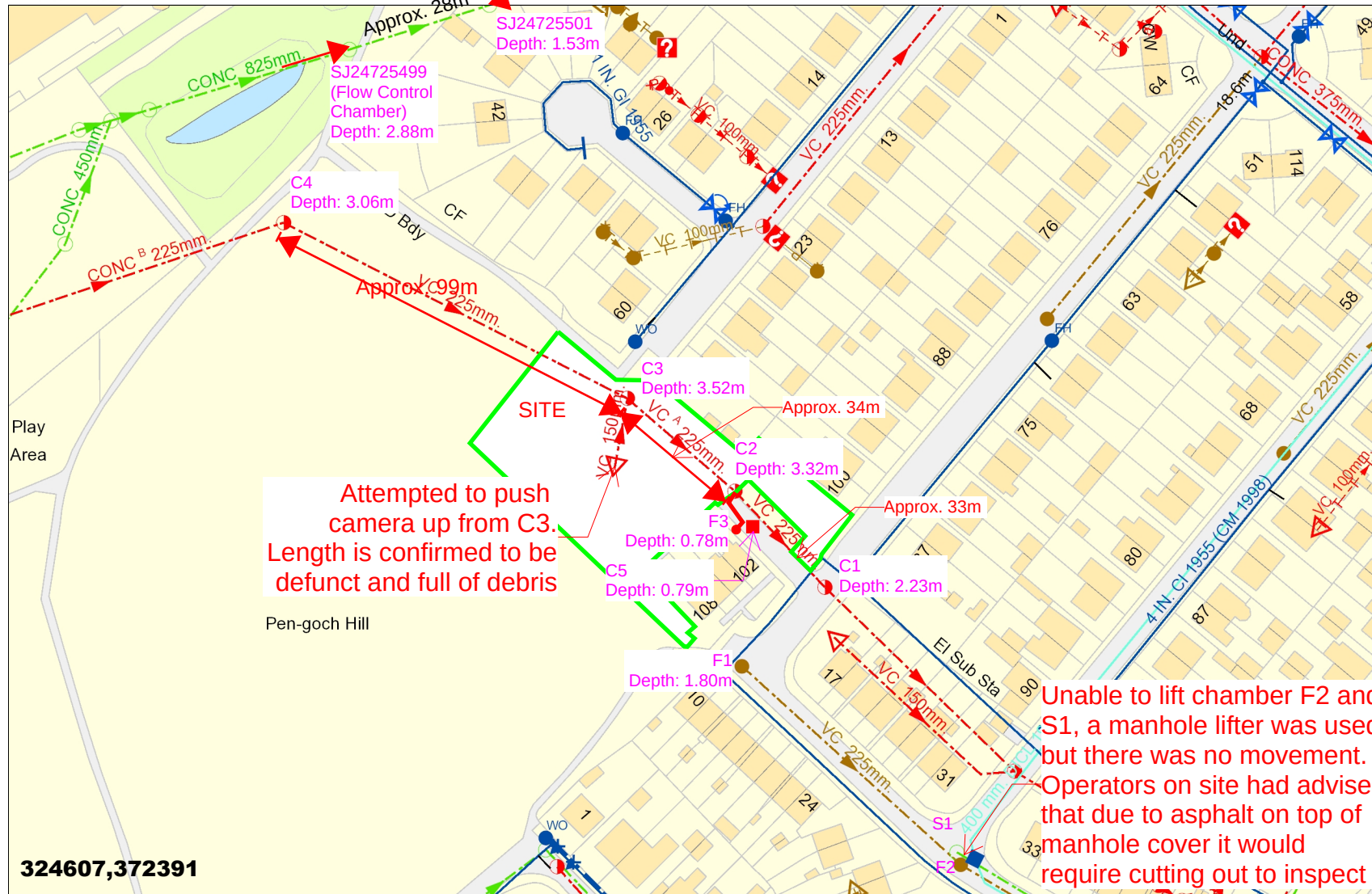
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Appendix E Drainage Survey



Dwr 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 and any onus of locating the apparatus before carrying out any excavations rests entirely on you. The information which is supplied hereby the company, is done so in accordance with statutory requirements of sections 198 and 199 of the water industry Act 1991 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 drain sewer or disposal main 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.

EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

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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



TT Drainage & Plumbing Services

Date: 26 /03/2025	Engineers Louix & Travis
Company/Client Datrys	
Site Address : Former working mans club Woodfield Avenue CH6 5DL	

Picture		
Name or Ref No of Manhole	C5	
Foul, Surface or Combined	Unknown	
Invert Level, Top 2 Bottom	79cm	
Width X Length	68 x 52	
Amount of connections	2	
Size of channel	100mm	
Material of Channel	Plastic	
Construction of Manhole	Concrete	
Area of Ground around MH	Tarmac	

Picture		
Name or Ref No of Manhole	C1	
Foul, Surface or Combined	Combined	
Invert Level, Top 2 Bottom	223cm	
Width X Length	57cm	
Amount of connections	0	
Size of channel	225mm	
Material of Channel	Clay	
Construction of Manhole	Concrete	
Area of Ground around MH	Tarmac	

Picture		
Name or Ref No of Manhole	F1	
Foul, Surface or Combined	Foul	
Invert Level, Top 2 Bottom	180cm	
Width X Length	57cm	
Amount of connections	0	
Size of channel	225mm	
Material of Channel	Clay	
Construction of Manhole	Concrete/brick	
Area of Ground around MH	tarmac	



TT Drainage & Plumbing Services

Date: 26 /03/2025	Engineers Louix & Travis
Company/Client Datrys	
Site Address : Former working mans club Woodfield Avenue CH6 5DL	

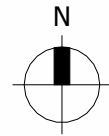
Picture		
Name or Ref No of Manhole	C3	
Foul, Surface or Combined	Combined	
Invert Level, Top 2 Bottom	352cm	
Width X Length	74 ²	
Amount of connections	1	
Size of channel	225mm	
Material of Channel	Clay	
Construction of Manhole	Concrete rings	
Area of Ground around MH	Mud/concrete	

Picture		
Name or Ref No of Manhole	C2	
Foul, Surface or Combined	Combined	
Invert Level, Top 2 Bottom	332mm	
Width X Length	67 x 80	
Amount of connections	1	
Size of channel	225	
Material of Channel	Clay	
Construction of Manhole	Concrete rings	
Area of Ground around MH	Concrete/mud	

Picture		
Name or Ref No of Manhole	C4	
Foul, Surface or Combined	Combined	
Invert Level, Top 2 Bottom	306	
Width X Length	66 x 78	
Amount of connections	0	
Size of channel	225mm	
Material of Channel	Clay	
Construction of Manhole	Concrete rings	
Area of Ground around MH	Concrete/mud	

Appendix F Proposed Development Plans

PROPOSED - DETAILED SITE PLAN
1 : 500



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P09	CYCLE STORE & SMOKE SHAFTS DJH DGH DGH	20/03/2026
P08	CEILING & TURNING CIRCLE AMEND DJH DGH DGH	19/03/2026
P07	RED LINE AND ROOF AMEND DJH DGH DGH	17/12/2025
P06	ROOF AMEND DJH DGH DGH	15/12/2025
P05	PRE-APP ISSUE DJH DGH DGH	26/06/2025
P04	REMOVAL OF TREES DJH DGH DGH	18/06/2025
P03	DESIGN DEVELOPMENT DJH DGH DGH	17/06/2025
P02	DESIGN DEVELOPMENT DJH DGH DGH	06/06/2025
P01	DEVELOPED DESIGN DJH DGH DGH	23/05/2025
REV	DESCRIPTION DRAWN BY CHECKED BY APPROVED BY	DATE

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
PROPOSED - DETAILED SITE PLAN

SCALE @ A3
1 : 500

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PROJECT No	DRAWING No	REVISION
PROJECT - ORIGINATOR - FUNC - LVL - FORM - DISCIPLINE - NUMBER		

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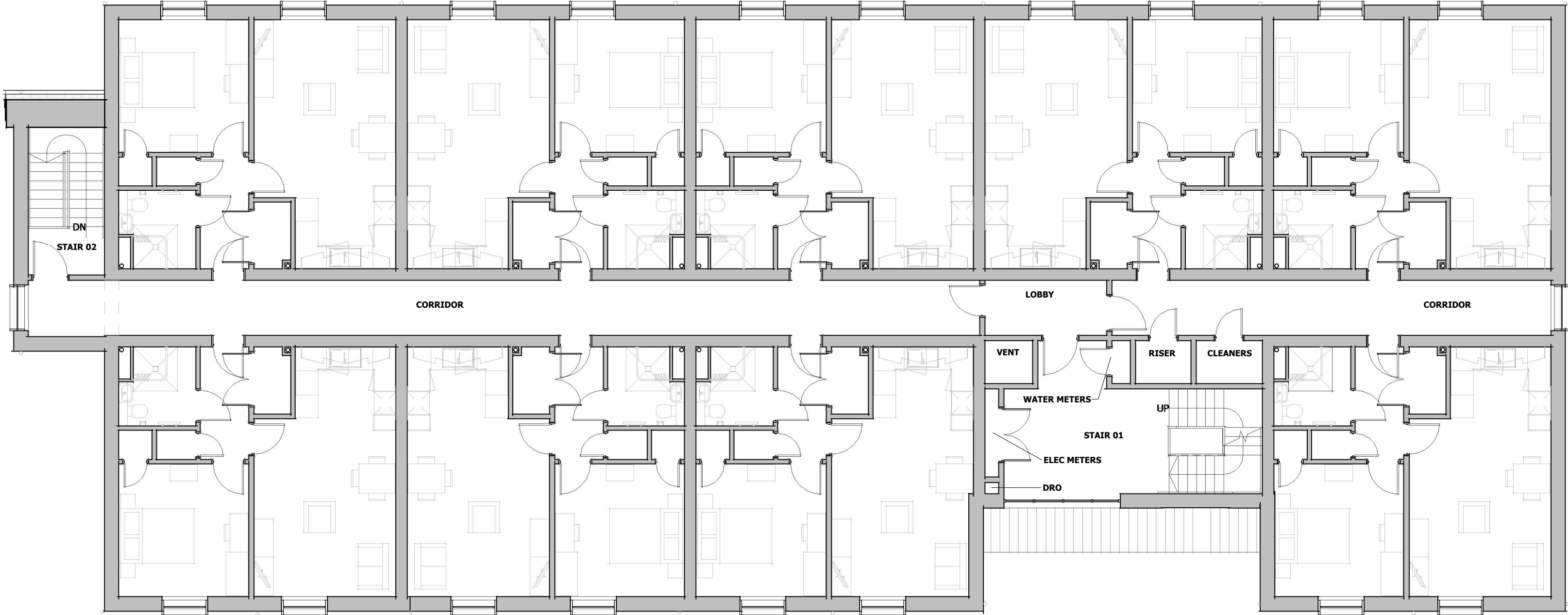
Registered Office: MGP, High Street, Gresford, LL12 8RF Reg. Co. No. 14943386

NOTES

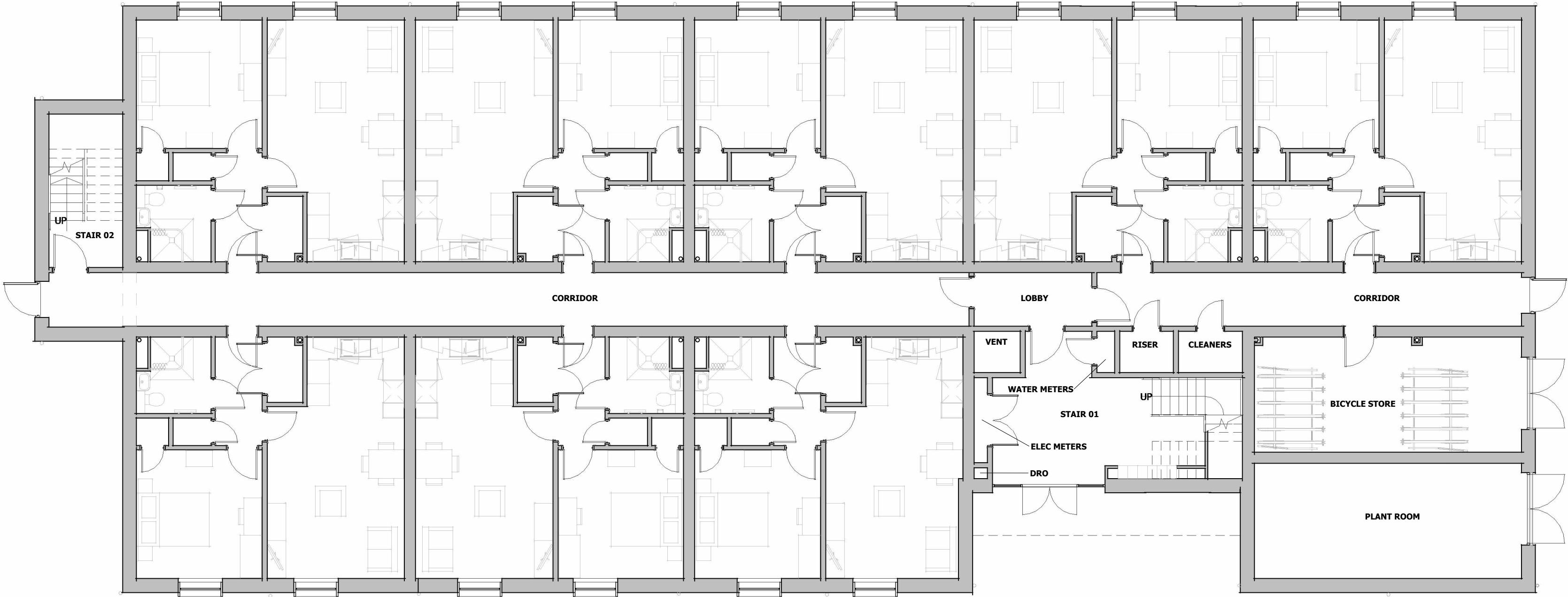
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PROPOSED - LEVEL 01
1 : 100



PROPOSED - LEVEL 00
1 : 100

P08	SMOKE SHAFT AMEND	DJH DGH DGH	20/03/2026
P07	CEILING & BIKE STORE AMEND	DJH DGH DGH	19/03/2026
P06	ROOF AMEND	DJH DGH DGH	15/12/2025
P05	PRE-APP DESIGN AMEND	DJH DGH DGH	12/09/2025
P04	PRE-APP ISSUE	DJH DGH DGH	26/06/2025
P03	DESIGN DEVELOPMENT	DJH DGH DGH	17/06/2025
P02	DESIGN DEVELOPMENT	DJH DGH DGH	06/06/2025
P01	DEVELOPED DESIGN	DJH DGH DGH	23/05/2025
REV	DESCRIPTION	DRAWN BY CHECKED BY APPROVED BY	DATE

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
PROPOSED PLANS

SCALE @ A2
1 : 100

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PROJECT No	DRAWING No	REVISION
PROJECT - ORIGINATOR - FUNCTION - LEVEL - FORM - DISCIPLINE - NUMBER		

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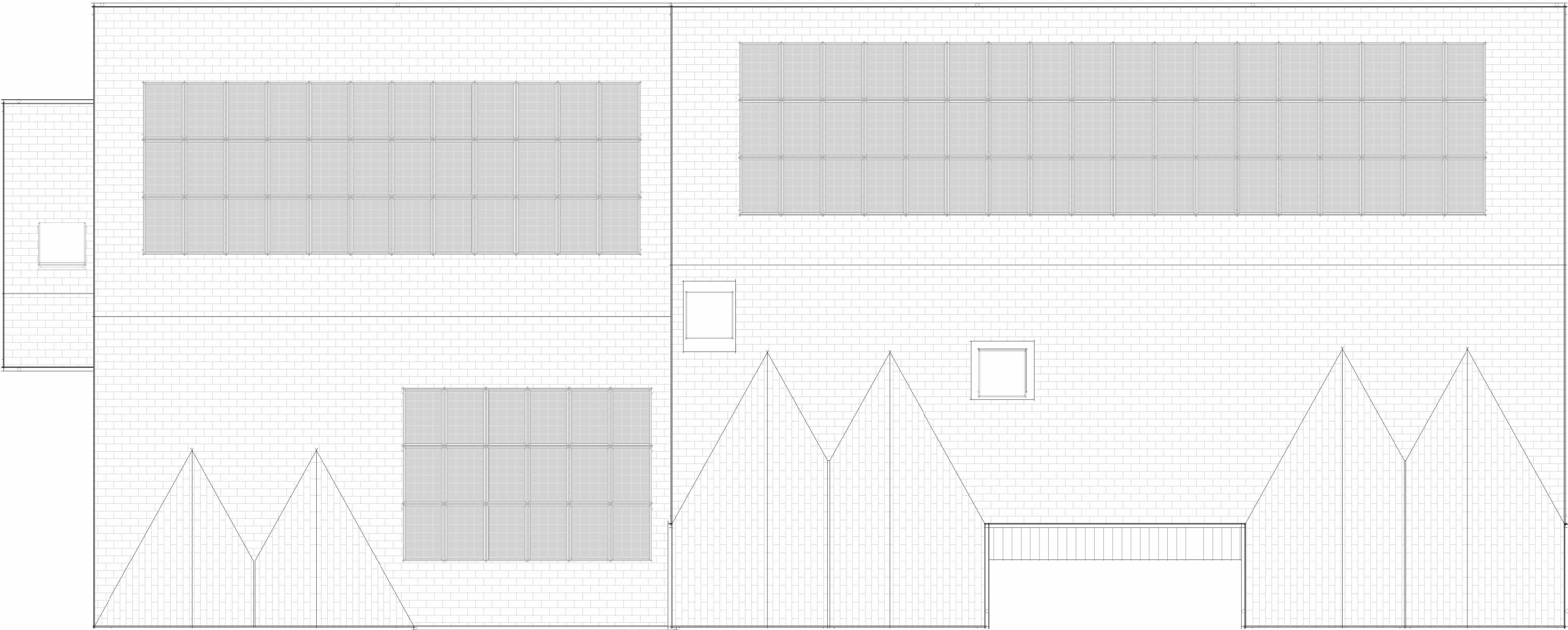


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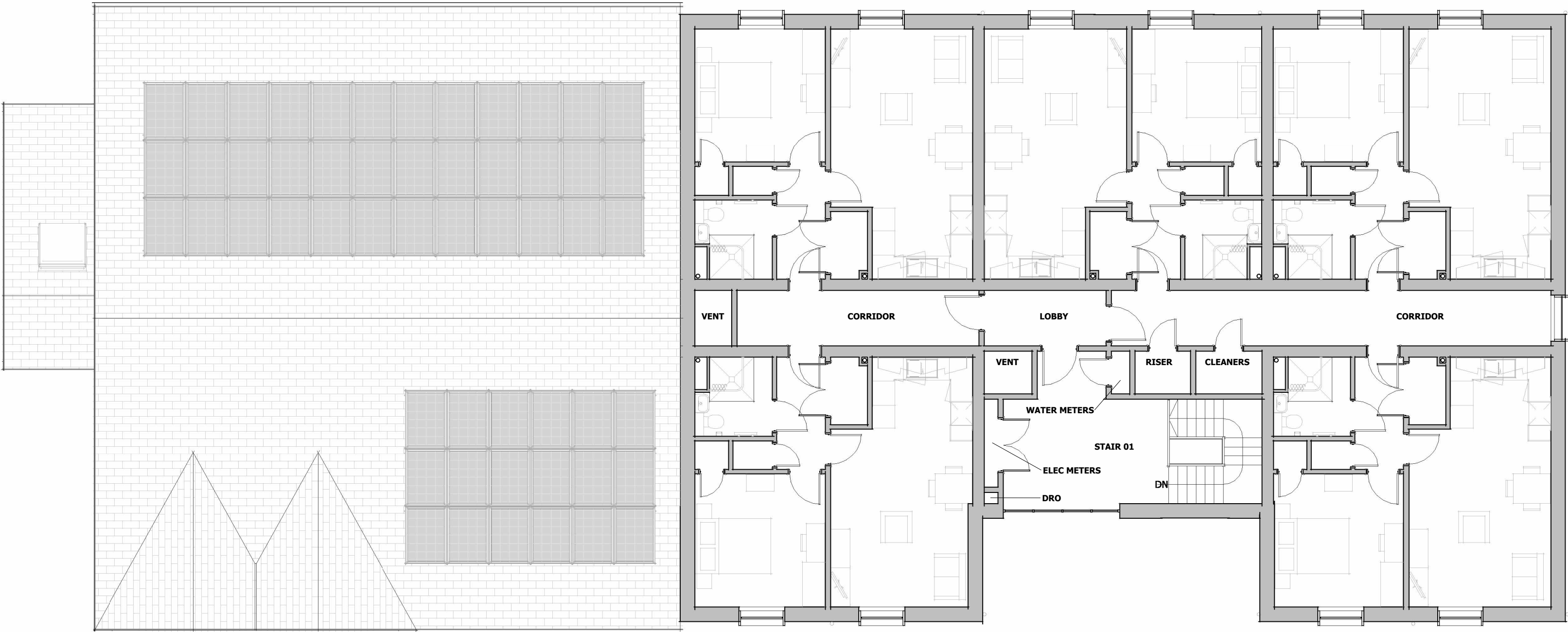


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PROPOSED - LEVEL R0
1 : 100



PROPOSED - LEVEL 02
1 : 100

P09	SMOKE SHAFT AMEND	DJH DGH DGH	20/03/2026
P08	CEILING & BIKE STORE AMEND	DJH DGH DGH	19/03/2026
P07	ROOF AMEND	DJH DGH DGH	17/12/2025
P06	ROOF AMEND	DJH DGH DGH	15/12/2025
P05	PRE-APP DESIGN AMEND	DJH DGH DGH	12/09/2025
P04	PRE-APP ISSUE	DJH DGH DGH	26/06/2025
P03	DESIGN DEVELOPMENT	DJH DGH DGH	17/06/2025
P02	DESIGN DEVELOPMENT	DJH DGH DGH	06/06/2025
P01	DEVELOPED DESIGN	DJH DGH DGH	23/05/2025
REV	DESCRIPTION	DRAWN BY CHECKED BY APPROVED BY	DATE

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
PROPOSED PLANS

SCALE @ A2
1 : 100

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PROJECT No	DRAWING No	REVISION
PROJECT - ORIGINATOR - FUNCTION - LEVEL - FORM - DISCIPLINE - NUMBER		

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PROPOSED - EAST ELEVATION
1 : 100



PROPOSED - WEST ELEVATION
1 : 100

P11	SMOKE SHAFT AMEND DJH DGH DGH	20/03/2026
P10	CEILING & BIKE STORE AMEND DJH DGH DGH	19/03/2026
P09	ROOF AMEND DJH DGH DGH	17/12/2025
P08	ROOF AMEND DJH DGH DGH	15/12/2025
P07	CLADDING AMEND DJH DGH DGH	01/10/2025
P06	ELEVATIONAL AMEND DJH DGH DGH	01/10/2025
P05	PRE-APP DESIGN AMEND DJH DGH DGH	12/09/2025
P04	PRE-APP ISSUE DJH DGH DGH	26/06/2025
P03	DESIGN DEVELOPMENT DJH DGH DGH	17/06/2025
P02	DESIGN DEVELOPMENT DJH DGH DGH	06/06/2025
P01	DEVELOPED DESIGN DJH DGH DGH	23/05/2025
REV	DESCRIPTION DRAWN BY CHECKED BY APPROVED BY	DATE

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
PROPOSED ELEVATIONS

SCALE @ A2
1 : 100

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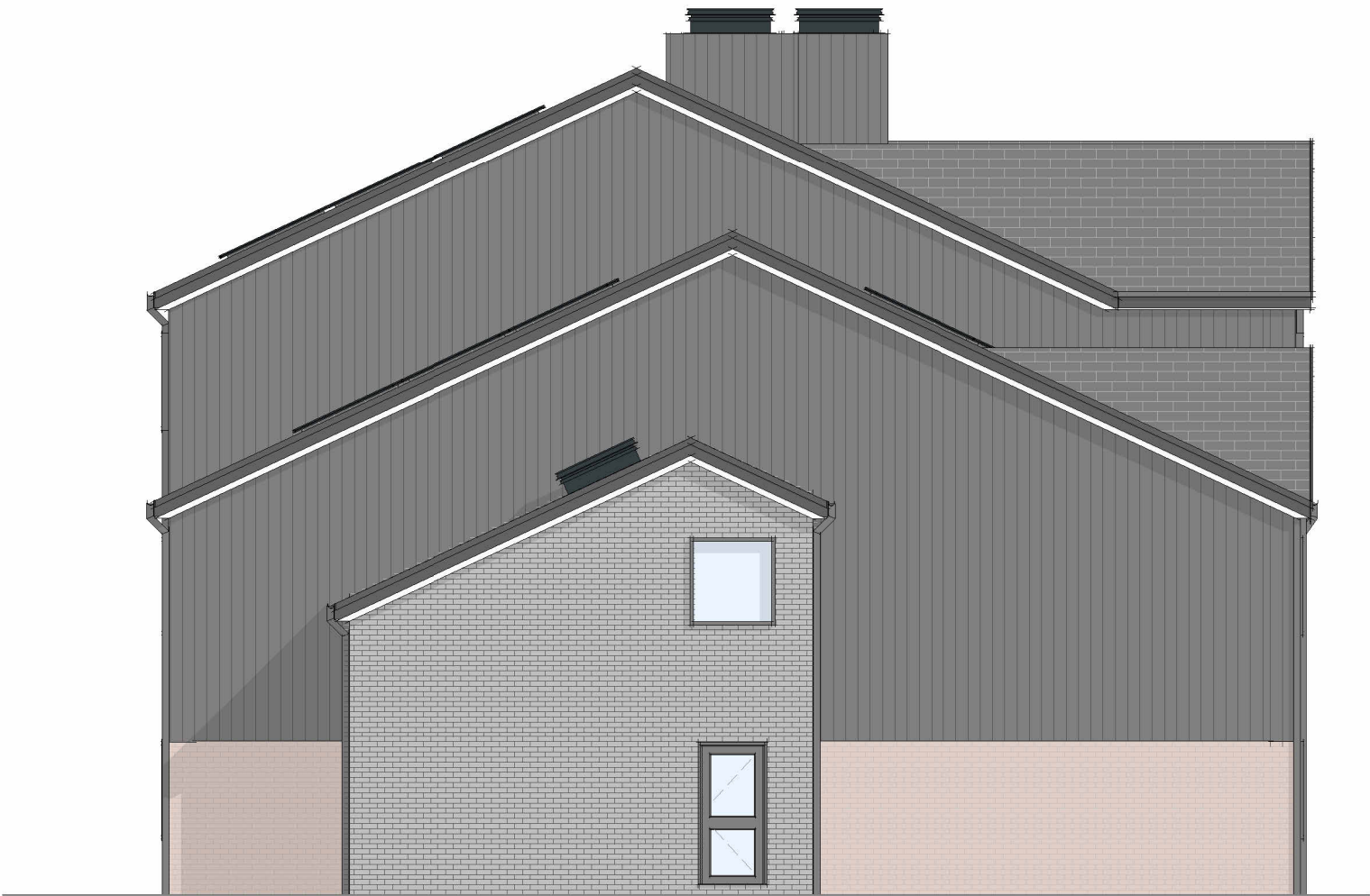
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PROPOSED - NORTH ELEVATION
1 : 100



PROPOSED - SOUTH ELEVATION
1 : 100

P10	SMOKE SHAFT AMEND	DJH	DGH	DGH	20/03/2026
P09	CEILING & BIKE STORE AMEND	DJH	DGH	DGH	19/03/2026
P08	ROOF AMEND	DJH	DGH	DGH	17/12/2025
P07	ROOF AMEND	DJH	DGH	DGH	15/12/2025
P06	CLADDING AMEND	DJH	DGH	DGH	01/10/2025
P05	ELEVATIONAL AMEND	DJH	DGH	DGH	01/10/2025
P04	PRE-APP DESIGN AMEND	DJH	DGH	DGH	12/09/2025
P03	PRE-APP ISSUE	DJH	DGH	DGH	26/06/2025
P02	DESIGN DEVELOPMENT	DJH	DGH	DGH	17/06/2025
P01	DESIGN DEVELOPMENT	DJH	DGH	DGH	06/06/2025

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
PROPOSED ELEVATIONS

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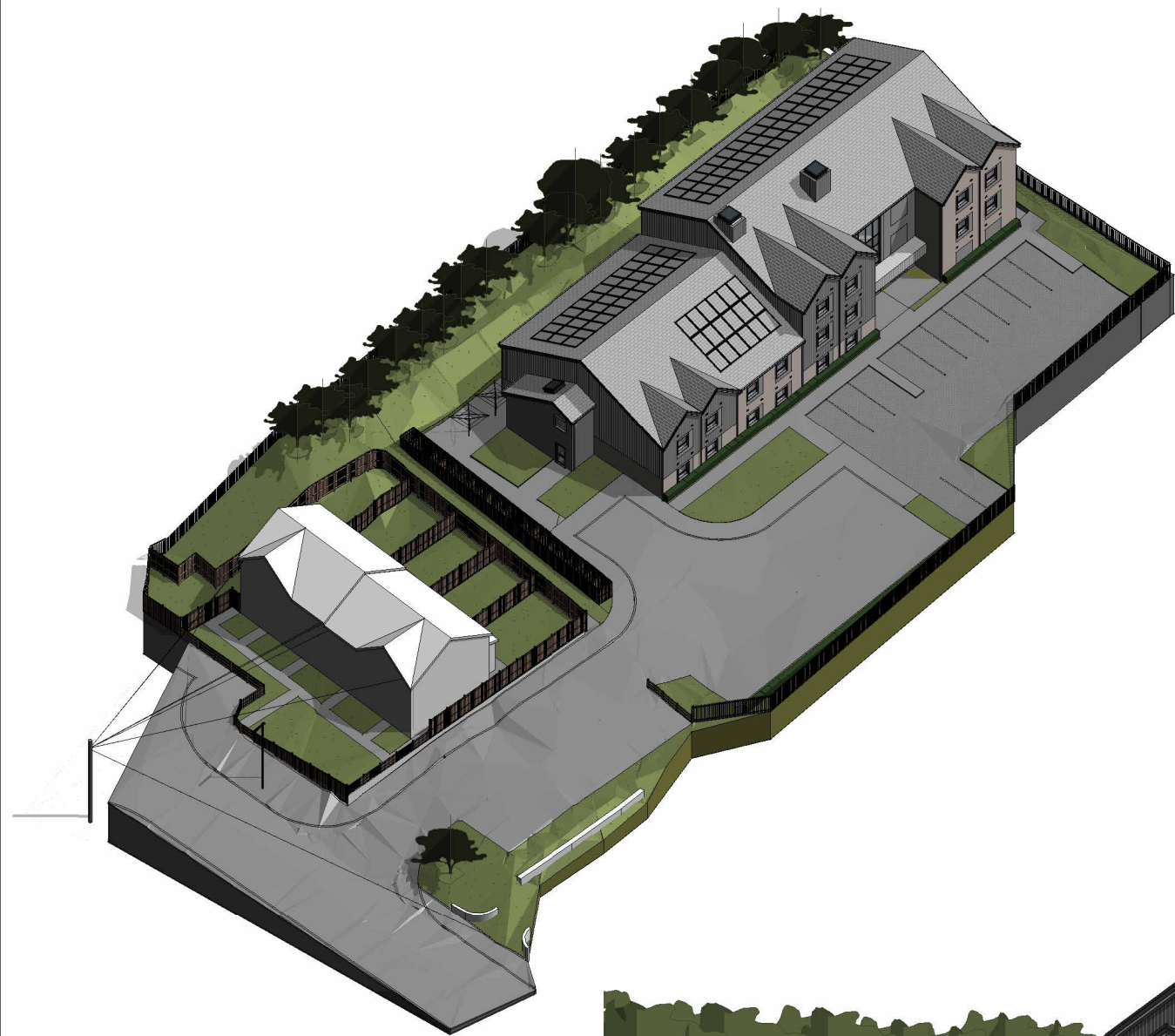


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P12	CYCLE STORE & SMOKE SHAFTS DJH DGH DGH	20/03/2026
P11	CEILING & TURNING CIRCLE AMEND DJH DGH DGH	19/03/2026
P10	RED LINE AND ROOF AMEND DJH DGH DGH	17/12/2025
P09	ROOF AMEND DJH DGH DGH	15/12/2025
P08	CLADDING AMEND DJH DGH DGH	01/10/2025
P07	ELEVATIONAL AMEND DJH DGH DGH	01/10/2025
P06	PRE-APP DESIGN AMEND DJH DGH DGH	12/09/2025
P05	PRE-APP ISSUE DJH DGH DGH	26/06/2025
P04	REMOVAL OF TREES DJH DGH DGH	18/06/2025
P03	DESIGN DEVELOPMENT DJH DGH DGH	17/06/2025
P02	DESIGN DEVELOPMENT DJH DGH DGH	06/06/2025
P01	DEVELOPED DESIGN DJH DGH DGH	23/05/2025
REV	DESCRIPTION DRAWN BY CHECKED BY APPROVED BY	DATE

PROJECT TITLE
WOODFIELD AVENUE, FLINT

CLIENT
ENFYS DEVELOPMENT

DRAWING TITLE
VISUALISATIONS

SCALE @ A3

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PROJECT - ORIGINATOR - FUNC - LVL - FORM - DISCIPLINE - NUMBER		

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Appendix G ReFH2 Greenfield Runoff Rates

DOCUMENT VERIFICATION RECORD	
Project:	16445-Former Working Men's Club, Flint
Client:	Enfys Developments Ltd
Report Title:	16445-Drainage Strategy-01
Date:	05/08/2025

DOCUMENT REVIEW & APPROVAL	
Author:	Jack Pugh BSc (Hons)
Checker:	Aled Williams BSc (Hons) MCIWEM C.WEM
Approver:	Nigel Jones BEng (Hons) CEng MICE

ReFH2 RUNOFF RATES*	
Return Period (Years)	As-rural Peak Flow (l/s)
1	0.9
2	1.0
5	1.4
10	1.7
30	2.2
50	2.4
75	2.7
100	2.8
200	3.2
1000	4.4

*Runoff Rates printed from the ReFH Flood Modelling software package

Appendix H MicroDrainage Storage Estimate

Waterco Ltd					Page 1	
Eden Court Lon Parcwr Business Park Denbighshire LL15 1NJ			Q100_30CC Former Working Men's Club Flint			
Date 04/08/2025			Designed by JP			
File Q100_30CC.SRCX			Checked by AW			
XP Solutions			Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+30%)						
Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min	Summer	8.861	0.861	1.4	68.8	0 K
30 min	Summer	9.146	1.146	1.6	91.7	0 K
60 min	Summer	9.453	1.453	1.7	116.3	0 K
120 min	Summer	9.676	1.676	1.8	134.1	0 K
180 min	Summer	9.789	1.789	1.9	143.1	Flood Risk
240 min	Summer	9.853	1.853	1.9	148.2	Flood Risk
360 min	Summer	9.905	1.905	2.0	152.4	Flood Risk
480 min	Summer	9.904	1.904	2.0	152.3	Flood Risk
600 min	Summer	9.874	1.874	1.9	149.9	Flood Risk
720 min	Summer	9.840	1.840	1.9	147.2	Flood Risk
960 min	Summer	9.767	1.767	1.9	141.3	Flood Risk
1440 min	Summer	9.626	1.626	1.8	130.1	0 K
2160 min	Summer	9.441	1.441	1.7	115.3	0 K
2880 min	Summer	9.293	1.293	1.6	103.5	0 K
4320 min	Summer	9.059	1.059	1.5	84.7	0 K
5760 min	Summer	8.884	0.884	1.4	70.7	0 K
7200 min	Summer	8.763	0.763	1.3	61.1	0 K
8640 min	Summer	8.673	0.673	1.3	53.9	0 K
10080 min	Summer	8.602	0.602	1.3	48.1	0 K
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min	Summer	143.333	0.0	69.8	16	
30 min	Summer	96.351	0.0	93.5	31	
60 min	Summer	62.118	0.0	121.1	62	
120 min	Summer	36.994	0.0	144.3	122	
180 min	Summer	27.136	0.0	158.7	182	
240 min	Summer	21.707	0.0	169.3	240	
360 min	Summer	15.762	0.0	184.4	360	
480 min	Summer	12.504	0.0	195.1	480	
600 min	Summer	10.419	0.0	203.2	572	
720 min	Summer	8.961	0.0	209.6	620	
960 min	Summer	7.040	0.0	219.4	742	
1440 min	Summer	4.983	0.0	231.3	1008	
2160 min	Summer	3.498	0.0	245.6	1424	
2880 min	Summer	2.722	0.0	254.7	1820	
4320 min	Summer	1.918	0.0	269.2	2636	
5760 min	Summer	1.511	0.0	282.7	3456	
7200 min	Summer	1.280	0.0	299.5	4248	
8640 min	Summer	1.133	0.0	318.1	5016	
10080 min	Summer	1.034	0.0	338.8	5760	
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Waterco Ltd				Page 2	
Eden Court Lon Parcwr Business Park Denbighshire LL15 1NJ		Q100_30CC Former Working Men's Club Flint			
Date 04/08/2025 File Q100_30CC.SRCX		Designed by JP Checked by AW			
XP Solutions		Source Control 2020.1.3			
Summary of Results for 100 year Return Period (+30%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	8.861	0.861	1.4	68.9	0 K
30 min Winter	9.147	1.147	1.6	91.7	0 K
60 min Winter	9.454	1.454	1.7	116.3	0 K
120 min Winter	9.680	1.680	1.8	134.4	0 K
180 min Winter	9.795	1.795	1.9	143.6	Flood Risk
240 min Winter	9.862	1.862	1.9	148.9	Flood Risk
360 min Winter	9.919	1.919	2.0	153.5	Flood Risk
480 min Winter	9.924	1.924	2.0	153.9	Flood Risk
600 min Winter	9.901	1.901	2.0	152.1	Flood Risk
720 min Winter	9.863	1.863	1.9	149.1	Flood Risk
960 min Winter	9.779	1.779	1.9	142.3	Flood Risk
1440 min Winter	9.619	1.619	1.8	129.5	0 K
2160 min Winter	9.390	1.390	1.7	111.2	0 K
2880 min Winter	9.199	1.199	1.6	95.9	0 K
4320 min Winter	8.894	0.894	1.4	71.5	0 K
5760 min Winter	8.654	0.654	1.3	52.3	0 K
7200 min Winter	8.394	0.394	1.3	31.6	0 K
8640 min Winter	8.248	0.248	1.3	19.8	0 K
10080 min Winter	8.175	0.175	1.3	14.0	0 K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Winter	143.333	0.0	69.8	16	
30 min Winter	96.351	0.0	93.5	31	
60 min Winter	62.118	0.0	121.1	62	
120 min Winter	36.994	0.0	144.3	120	
180 min Winter	27.136	0.0	158.7	178	
240 min Winter	21.707	0.0	169.3	236	
360 min Winter	15.762	0.0	184.4	350	
480 min Winter	12.504	0.0	195.1	462	
600 min Winter	10.419	0.0	203.2	570	
720 min Winter	8.961	0.0	209.6	672	
960 min Winter	7.040	0.0	219.3	760	
1440 min Winter	4.983	0.0	231.2	1066	
2160 min Winter	3.498	0.0	245.6	1516	
2880 min Winter	2.722	0.0	254.7	1960	
4320 min Winter	1.918	0.0	269.2	2812	
5760 min Winter	1.511	0.0	282.8	3680	
7200 min Winter	1.280	0.0	299.5	4328	
8640 min Winter	1.133	0.0	318.1	4920	
10080 min Winter	1.034	0.0	338.8	5456	
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Waterco Ltd		Page 3
Eden Court Lon Parcwr Business Park Denbighshire LL15 1NJ	Q100_30CC Former Working Men's Club Flint	
Date 04/08/2025 File Q100_30CC.SRCX	Designed by JP Checked by AW	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 324587 372394 SJ 24587 72394
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.195

Time (mins)	Area
From:	To: (ha)

0	1 0.195
---	---------

Waterco Ltd		Page 4
Eden Court Lon Parcwr Business Park Denbighshire LL15 1NJ	Q100_30CC Former Working Men's Club Flint	
Date 04/08/2025 File Q100_30CC.SRCX	Designed by JP Checked by AW	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 10.000

Tank or Pond Structure

Invert Level (m) 8.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	80.0	1.000	80.0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0057-2000-2000-2000
Design Head (m)	2.000
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	57
Invert Level (m)	7.995
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

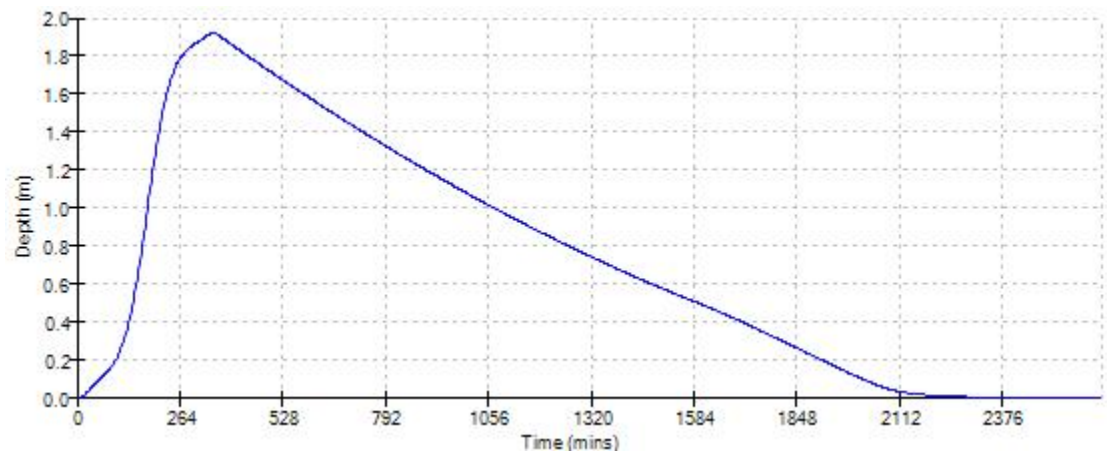
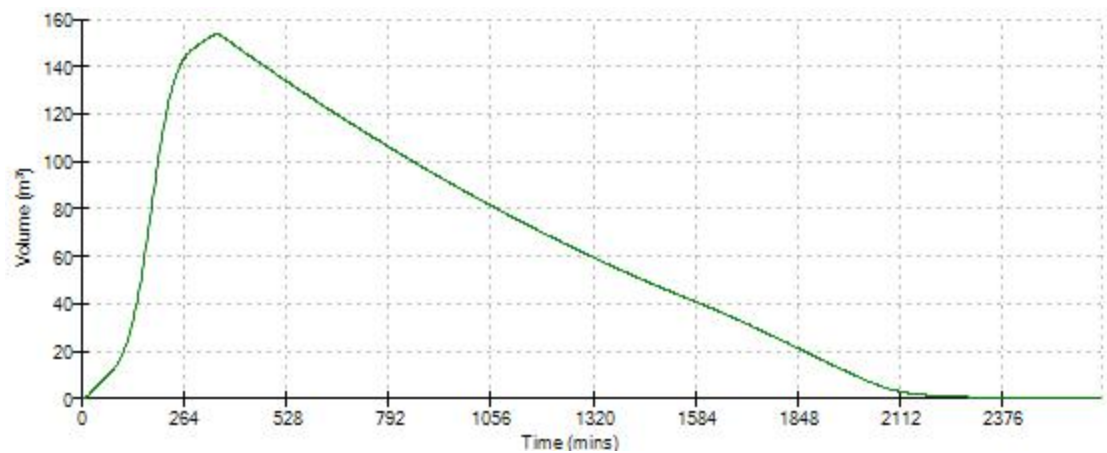
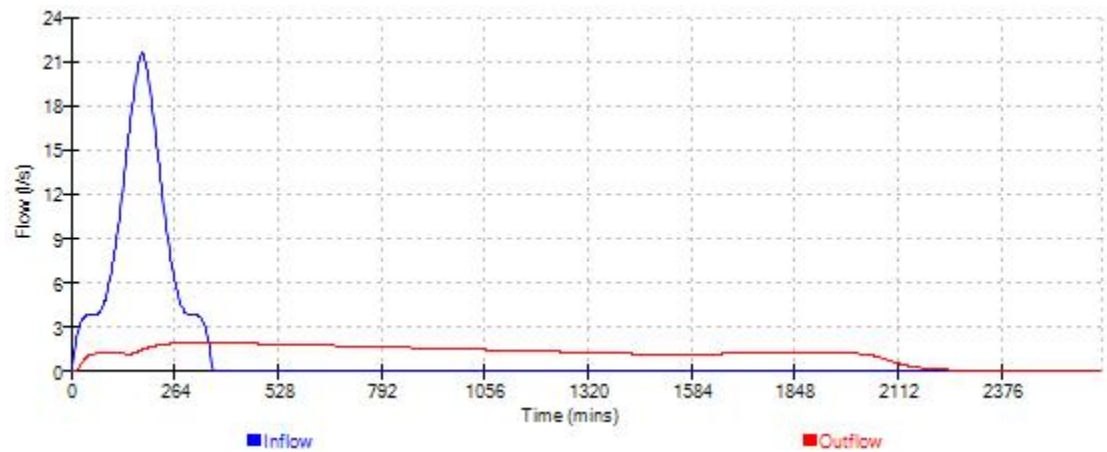
Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	2.0
Flush-Flo™	0.247	1.3
Kick-Flo®	0.506	1.1
Mean Flow over Head Range	-	1.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

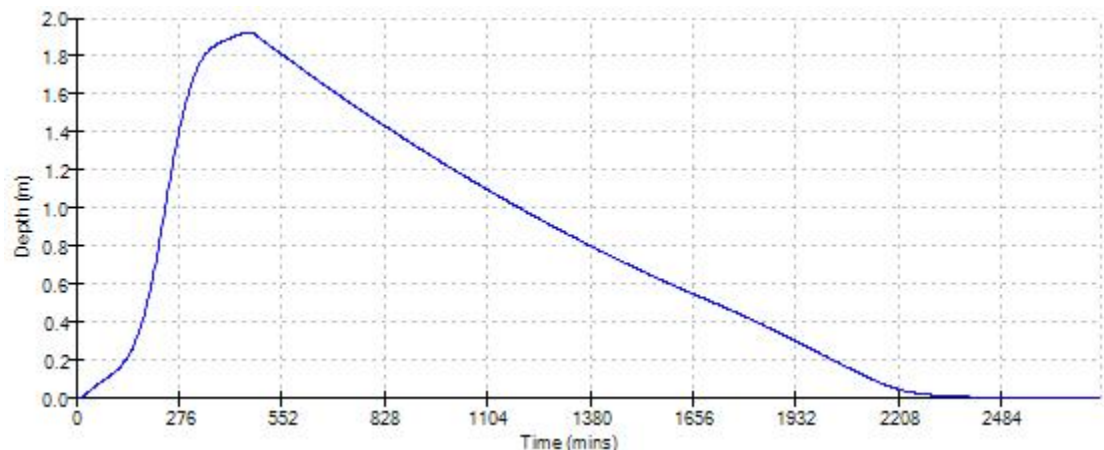
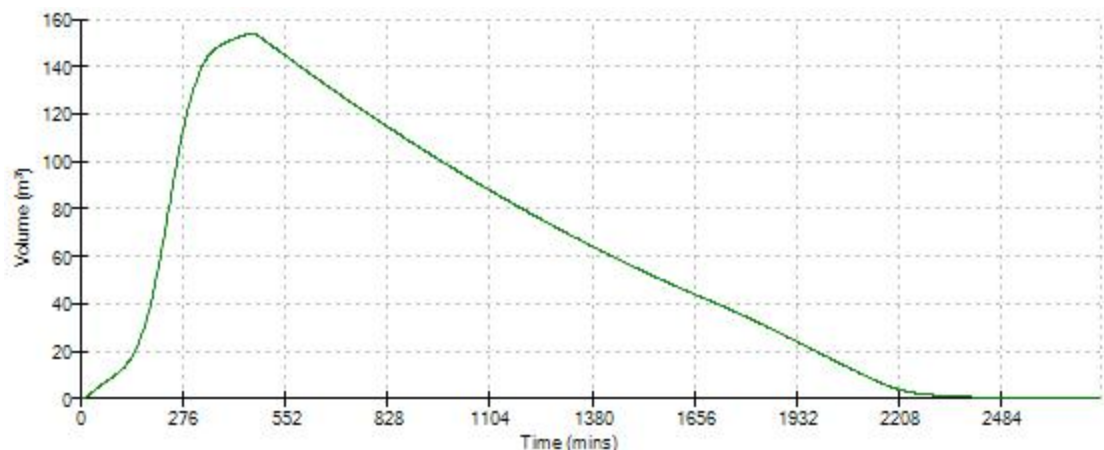
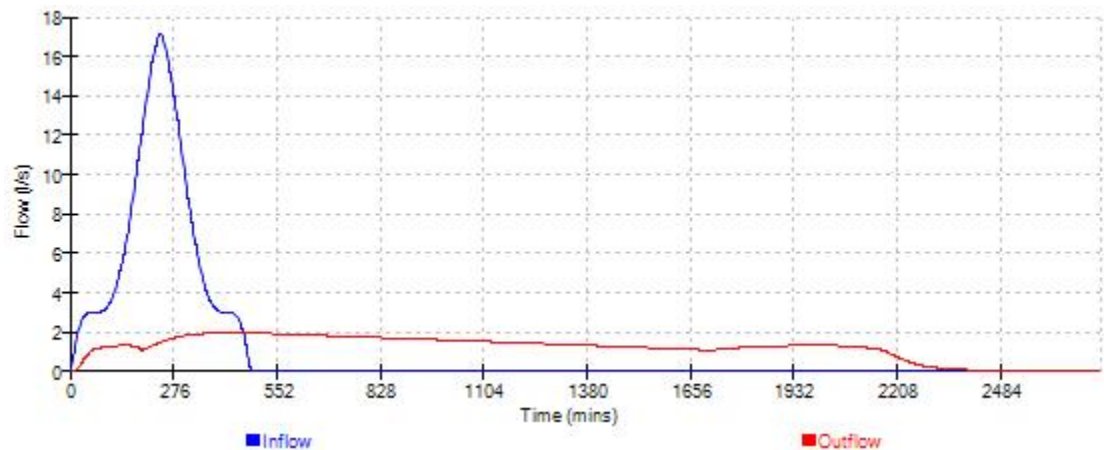
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.600	1.8	5.000	3.0
0.200	1.3	1.800	1.9	5.500	3.2
0.300	1.3	2.000	2.0	6.000	3.3
0.400	1.3	2.200	2.1	6.500	3.4
0.500	1.1	2.400	2.2	7.000	3.6
0.600	1.2	2.600	2.3	7.500	3.7
0.800	1.3	3.000	2.4	8.000	3.8
1.000	1.5	3.500	2.6	8.500	3.9
1.200	1.6	4.000	2.7	9.000	4.0
1.400	1.7	4.500	2.9	9.500	4.1

Waterco Ltd		Page 5
Eden Court	Q100_30CC	
Lon Parcwr Business Park	Former Working Men's Club	
Denbighshire LL15 1NJ	Flint	
Date 04/08/2025	Designed by JP	
File Q100_30CC.SRCX	Checked by AW	
XP Solutions	Source Control 2020.1.3	

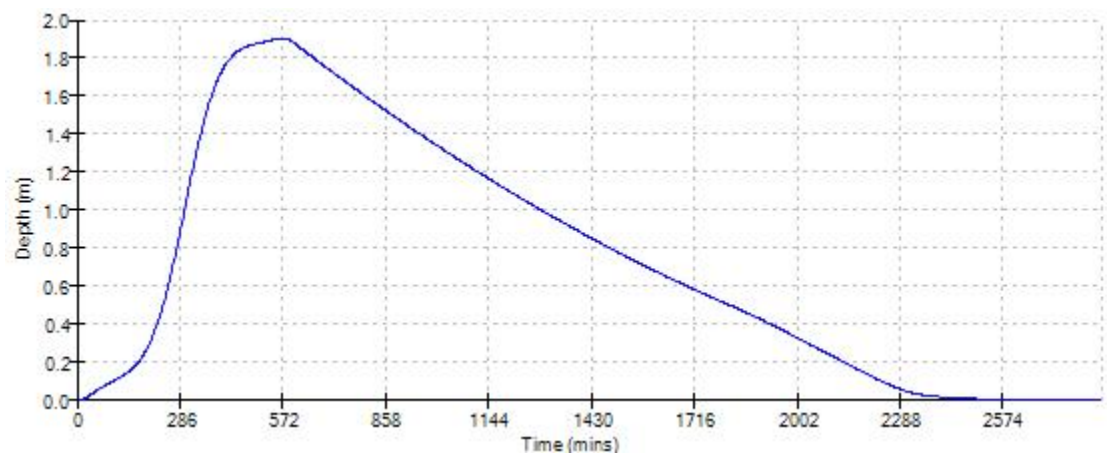
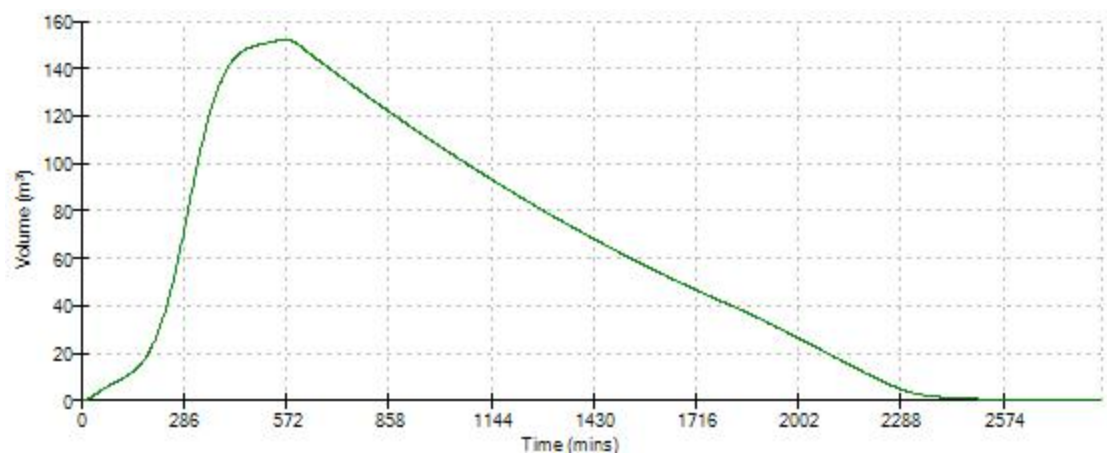
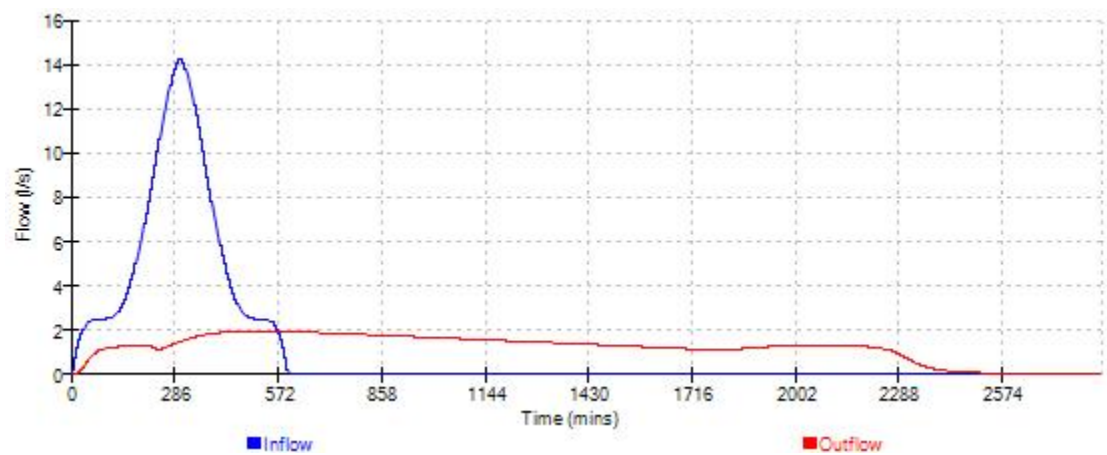
Event: 360 min Winter



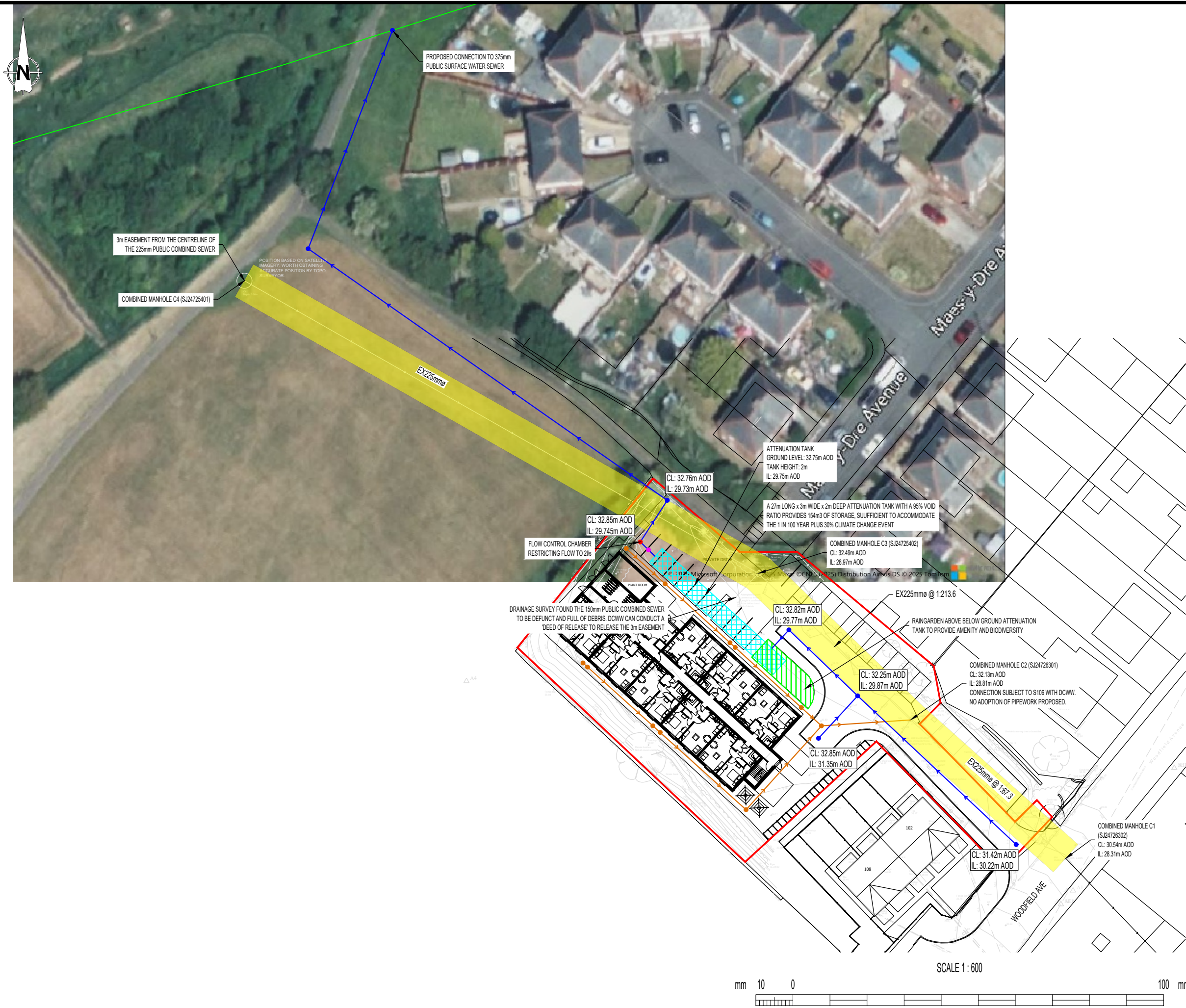
Event: 480 min Winter



Event: 600 min Winter



Appendix I Concept Drainage Sketch



- NOTES
- THIS SKETCH HAS NOT BEEN SUBJECT TO FORMAL CHECKS OR APPROVALS. ITS VALIDITY AND USE MUST THEREFORE BE LIMITED TO DISCUSSION AND INFORMATION PURPOSES ONLY.
 - ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS SHOWN OTHERWISE.
 - THIS DRAWING IS AN AMMENDMENT OF THE 'WAF-HOH-XX-XX-DR-A-1201-Detailed Site Plan' BY 'Hughes O'Hanlon Architects'. THIS DRAWING PROVIDES A CONCEPT ONLY AND IS NOT INTENDED FOR DETAILED DESIGN.

- KEY
- SITE BOUNDARY
 - PROPOSED ATTENUATION TANK
 - PROPOSED RAIN GARDEN
 - DCWW PUBLIC COMBINED SEWER
 - DCWW PUBLIC SURFACE WATER SEWER
 - PROPOSED SURFACE WATER SEWER
 - PROPOSED SURFACE WATER INSPECTION CHAMBER
 - PROPOSED FLOW CONTROL CHAMBER
 - PROPOSED SDS AQUA-SWIRL
 - PROPOSED PRIVATE NON-ADOPTED FOUL SEWER AND CHAMBER

REV02	27/04/2026	TURNING HEAD EXTENT ALTERED	LG	AC	NJ
REV01	06/10/2025	FIRST ISSUE	LG	AR	NJ
REV	DATE	DESCRIPTION	ORIG	CHK	APP

CLIENT

ENFYS DEVELOPMENTS Ltd

PRINCIPAL DESIGNER

Waterco

Waterco Ltd., Eden Court,
Lon Parcw Business Park, Ruthin LL15 1NJ

tel (+44) 1824 702220
www.waterco.co.uk

SCHEME

FORMER WORKING MEN'S CLUB, FLINT

TITLE

CONCEPT DRAINAGE SKETCH

ORIGINATOR	CHECKER	APPROVER
LG	AR	NJ

STATUS

FOR INFORMATION

SCALE / SHEET SIZE	REV
1:600 / A3	REV02

DRAWING NO.

16445_CONCEPT_DRAINAGE_SKETCH

Appendix J Maintenance Schedules

Operation and Maintenance Requirements for Bioretention Systems

Maintenance Schedule	Required Action	Typical Frequency
Regular inspections	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate to determine if maintenance is necessary)	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc. and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
Regular maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
Occasional maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
Remedial actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years

Ref. Table 18.3, CIRIA C753 'The SuDS Manual'

The maintenance requirements detailed above are to be undertaken by the site owner.

Name :

Position :

Date :

Signed on behalf of the site owner :

Operation and Maintenance Requirements for Flow Control Chambers and Devices

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. Take remedial action if required.	Monthly (at start, then half yearly)
	Debris removal from catchment surface	Monthly
	Visual inspection of flow control chamber to assess if system is draining down correctly and the orifice or flow control device is not blocked. Assess if there is any build up of silt in chamber sump.	Monthly (at start, then half yearly) & after large storm events
	Removal of accumulated silt from silt trap and catchpit sumps.	As required
Remedial actions	Repair/rehabilitation of inlets/outlets.	As required

The maintenance requirements detailed above are to be undertaken by the site owner.

Name :

Position :

Date :

Signed on behalf of the site owner :

Operation and Maintenance Requirements for Attenuation Storage Tanks

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Ref. Table 21.3, CIRIA C753 'The SuDS Manual'

The maintenance requirements detailed above are to be undertaken by the site owner.

Name :

Position :

Date :

Signed on behalf of the site owner :

Appendix K CDRA

Project: Former Working Men's Club, Flint
Client: Enfys Developments Ltd
Report Reference: 16445-Drainage Strategy-01

Project No: 16445

Prepared by:	Jack Pugh	Date:	07/08/2025
Checked by:	Aled Williams	Date:	18/08/2025
Reviewed by:	Nigel Jones	Date:	18/08/2025

Requirement:

The Construction (Design and Management) Regulations 2015 (CDM 2015) place an obligation on the Designer to take all reasonable steps to provide, with the design, sufficient information about the design, construction or maintenance of the structure, to adequately assist the client, other designers and contractors to comply with their duties under CDM. The Designer has undertaken this assessment to identify any extra-ordinary risks, or those that would not be expected on this particular project by an experienced and competent Contractor. The aim is to avoid needless paperwork and bureaucracy and ensure the assessment is project specific, relevant and proportionate to the risk.

DRA Summary

Each of the following risk areas has been considered using the question below. Is a risk present which is considered to be **extra-ordinary or unexpected** in this instance?

If **YES** - A detailed risk assessment is required at design stage

If **UNKNOWN** - Insufficient information has been provided at concept design stage and the risks are unknown. Further consideration must be given at design stage(s)

If **NO** - No further action is required.

Hazard Ref.	Risk Areas	YES, UNKNOWN or NO	Comments
1	Ground Conditions	Unknown	Devensian Till (diamicton) underlain by Eturia Formation / Pennie Lower Coal Measures Formation
2	Hazardous Environment	Unknown	To be considered at detailed design stage
3	Existing Working Environment	No	Social club has been demolished
4	Existing Services	Yes	DCWW public combined sewer crossing site
5	Proximity to Other Structure(s)	Yes	Residential properties adjacent
6	Near Waterbody / flood risk	No	No watercourses in the vicinity of the site. Site is in Flood Zone 1
7	Proximity to Other Activities	Yes	Residential properties adjacent
8	Sequence of Construction	Unknown	To be considered at detailed design stage
9	Access	Unknown	Access to the site from Woodfield Avenue
10	Interfaces	Unknown	To be considered at detailed design stage
11	Confined Space Working	Unknown	To be considered at detailed design stage
12	Maintenance Considerations	Unknown	To be considered at detailed design stage
13	Working at Height	Unknown	To be considered at detailed design stage
14	Steep Slopes	No	Site is gradually sloping
15	Demolition / Refurbishment / Repair	Unknown	Site clearance required. To be considered in detailed design
16	Welfare	Unknown	To be considered at detailed design stage
17	Occupational Health	Unknown	To be considered at detailed design stage
18	Environmental Issues	Unknown	To be considered at detailed design stage
19	Other Significant Hazards not Identified Above	Unknown	To be considered at detailed design stage
20	Residual Risk to Future Users	Unknown	To be considered at detailed design stage