
CELTIC HOUSE, LANGLAND WAY

FLOOD CONSEQUENCES ASSESSMENT

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Revision	Date	Notes	Author	Approved
-	29/08/2025	First Issue	WH	PC



1.0 INTRODUCTION

Bear Consulting has been instructed to prepare a Flood Consequence Assessment (FCA) for the development at Celtic House, Langland Way, Newport, NP19 4PT, to support the proposed development of an 'extension to existing building with an open canopy and the erection of a single storey portal frame building for the provision of warehouse storage (use class b8)' (NCC planning ref:25/0476).

This FCA has been prepared in accordance with Technical Advice Note 15 (TAN 15): Development, Flooding and Coastal Erosion (Welsh Government, March 2025), together with relevant supporting guidance.

The purpose of this assessment is to:

- Establish whether the site is currently affected by flooding.
- Assess the suitability of the proposed development in this location.
- Identify and propose mitigation measures to ensure the development and its occupants remain safe during a flood event.
- Demonstrate that the development will not increase flood risk elsewhere.
- Assess compliance with the acceptability criteria set out in TAN 15 (2025).
- Provide the additional information requested by Natural Resources Wales (NRW), as the statutory consultee for flood risk, to inform the planning process.

2.0 EXISTING SITE AND DEVELOPMENT SUMMARY

2.1 Site Address and OS Grid Reference

The site is located at Celtic House, Langland Way, Newport, NP19 4PT (E.333265, N.186441)



Figure 1 – Site Location

The red line in Figure 1 shows the proposed development boundary. The blue line indicates the applicant's ownership boundary. Vehicular access is gained from Langland Way adjacent to the eastern site boundary.



2.2 Existing Site Description

The site is a previously developed land within an established industrial area, bounded by other industrial plots to the north, south, and west.

The topographical survey (included within Appendix A) shows a steel portal frame building centrally located on the plot, storage containers positioned in the north-western area, hardstanding gravel surfaces to the west and brick paving to the east of the building, soft landscaped margins along the boundaries.

Ground levels across the site range from 7.32m to 8.40m AOD, generally falling gently away from the existing building.

The topographic survey also indicates the presence of existing private on-site surface water and foul water drainage networks within the site boundary. However, no above-ground surface water drainage features, such as drainage channels or gullies, were identified within the development area (red line boundary). It is therefore assumed that runoff from the development area currently flows in a south-westerly direction, discharging off-site and ultimately reaching the Langland Way highway gullies.

The nearest watercourses are:

- Great Spytty Reen (main river), approximately 100m east.
- River Usk (main river), approximately 700m west.

There are no Site of Special Scientific Interest (SSSI), Special Area of Conservation (SACs) or Local Nature Reserves (LNR) / National Nature Reserves (NNR) / Special Protection Areas (SPA) lying within or directly adjacent to the site.

Soilscapes has identified the soil as loamy and clayey soils of coastal flats with naturally high groundwater, with naturally wet drainage. The relevant information has been included within Appendix C.

The bedrock geology has been identified as Mercia Mudstone Group - Mudstone. The superficial deposit has been identified as Tidal Flat Deposits - Clay and silt. The relevant information has been included within Appendix D.

2.3 Proposed Development Description

It is proposed to construct an extension (plasma cutting unit and workshop) directly adjacent to the west of the existing building, and the erection of a single-storey portal frame building for the provision of warehouse storage (use class b8).

Relevant proposed design information has been included within Appendix B.

Given the relationship to the existing buildings, the proposed structures are considered to be extensions rather than new stand-alone developments.



2.4 Vulnerability Classification

Under TAN 15 (2025), the proposed development falls within the “Less Vulnerable” category, as it comprises industrial and warehouse use.

Vulnerability category	Types
Highly vulnerable development	All residential premises (including hotels, Gypsy and Traveller sites, caravan parks and camping sites). Schools and childcare establishments, colleges and universities. Hospitals and GP surgeries. Especially vulnerable industrial development (e.g. power generating and distribution elements of power stations, transformers, chemical plants, incinerators), and waste disposal sites. Emergency services, including: ambulance stations, fire stations, police stations, command centres, emergency depots. Buildings used to provide emergency shelter in time of flood.
Less vulnerable development	General industrial, employment, commercial and retail development. Transport and utilities infrastructure. Car parks. Mineral extraction sites and associated processing facilities (excluding waste disposal sites). Public buildings including libraries, community centres and leisure centres (excluding those identified as in Highly Vulnerable category and emergency shelters). Places of worship. Cemeteries. Equipped play areas. Renewable energy generation facilities (excluding hydro generation).
Water compatible development	Boatyards, marinas and essential works required at mooring basins. Development associated with canals. Flood defences and management infrastructure. Open spaces (excluding equipped play areas). Hydro renewable energy generation.

Table 1 – Development vulnerability categories extracted from TAN15 (March 2025)

3.0 PLANNING CONTEXT AND FLOOD ZONE CLASSIFICATION

3.1 Planning Status

At the time of writing (August 2025), a planning application for the proposed development (Ref: 25/0476) has been submitted to Newport City Council and is under consideration.

3.2 Relevant National and Local Policy

This FCA report has been prepared in accordance with:

- Technical Advice Note 15 (TAN 15): Development, Flooding and Coastal Erosion (Welsh Government, March 2025).
- Welsh Government National Standards for Sustainable Drainage (SuDS).

Where relevant, reference has also been made to other current Natural Resources Wales (NRW) policy and guidance.



3.3 Development Location Flood Zone

According to the NRW Flood Map for Planning (included within Appendix E), the proposed development lies entirely within a Sea Flood Zone 3 area, defined as land with a greater than 0.5% annual probability (1 in 200) of tidal flooding, including the effects of climate change.

The site is also located within the TAN 15 Defended Zone.

4.0 SOURCES OF FLOOD RISK

4.1 Identify Relevant Sources of Flooding

A desk-based review has been undertaken, including the use of the Natural Resources Wales (NRW) Flood Map for Planning (FMfP), to assess potential sources of flood risk affecting the site. The relevant information from the NRW Flood Map for Planning (FMfP) has been included within Appendix E.

Surface Water Flooding

According to NRW Flood Map for Planning, the site does not lie within Surface Water Flood Zones 2 and 3. On this basis, the risk from surface water flooding is considered negligible.

Flood Zone	Probability	Explanation
Zone 2	Medium	<ul style="list-style-type: none">Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from surface water and/or small watercourses in a given year, including the effects of climate change.
Zone 3	High	<ul style="list-style-type: none">Areas with more than 1% (1 in 100) chance of flooding from surface water and/or small watercourses in a given year, including the effects of climate change.

Table 2 – NRW Surface Water and Small Watercourses Flood Zones

River Flooding

The nearest river to the site is the main river, Great Spytty Reen, approximately 100m to the east of the site and another main river, River Usk, is located approximately 700m to the west of the site.

The FMfP confirms that the site does not lie within a designated river flood zone and is therefore not at significant risk from river flooding. The risk of flooding from rivers is therefore considered negligible.



Flood Zone	Probability	Explanation
Zone 2	Medium	<ul style="list-style-type: none">• Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from rivers in a given year, including the effects of climate change.
Zone 3	High	<ul style="list-style-type: none">• Areas with more than 1% (1 in 100) chance of flooding from rivers in a given year, including the effects of climate change.

Table 3 – NRW Rivers Flood Zones

Sea Flooding

The closest estuary to the site is the Bristol Channel, located approximately 4 km to the south.

According to the NRW Flood Map for Planning, the site lies within Sea Flood Zone 3, defined as areas with more than a 0.5% (1 in 200) annual probability of flooding from the sea, including the effects of climate change.

Flood Zone	Probability	Explanation
Zone 2	Medium	<ul style="list-style-type: none">• Areas with 0.1% to 0.5% (1 in 1000 to 1 in 200) chance of flooding from the sea in a given year, including the effects of climate change.
Zone 3	High	<ul style="list-style-type: none">• Areas with more than 0.5% (1 in 200) chance of flooding from the sea in a given year, including the effects of climate change.

Table 4 – NRW Rivers Flood Zones

It should be noted that the site is also situated within the TAN 15 Sea Defended Zone, an area that benefits from Risk Management Authority flood defences designed for a 1 in 200-year (present-day) sea flooding event.

Flood Risk from Reservoir

There are no reservoirs located in the vicinity of the site. The NRW Flood Map for Planning indicates that the site is not within an area at risk of reservoir flooding; therefore, the flood risk from reservoirs is considered negligible.

Sewer Flooding

Sewer flooding may occur during periods of heavy rainfall when the sewer system is either blocked or lacks sufficient capacity. It is noted that there are existing private on-site surface water and foul water systems that connect to the highway drain and the DCWW public sewer beneath the adjacent public road, Languard Way, according to information from the topographical survey and the DCWW sewer map. Existing drainage information has been included within Appendix F. At the time of writing, no information is available regarding sewer flooding in the vicinity of the site; therefore, the risk of sewer flooding is considered unknown.

A new drainage system shall be designed that will control surface water runoff to an agreed-upon, restricted rate. A non-return valve will also be considered to prevent backflow into the system. This ensures the development does not put additional strain on the local sewer network. Therefore, the risk of sewer flooding can be considered low.



Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rise of groundwater into man-made ground when the normal range of groundwater levels is exceeded.

Groundwater flooding tends to occur sporadically in both location and time and typically affects low-lying areas, below-surface infrastructure, and buildings (e.g., tunnels, basements, and car parks) underlain by permeable rocks (aquifers).

It is acknowledged that groundwater conditions can vary across the site. A site investigation, including a groundwater assessment, will be carried out at a later stage of the development to provide confirmation.

At this stage, the risk of groundwater flooding is unknown. However, as later demonstrated in section 6, mitigation measures will be incorporated into the development. Hence, the overall risk of groundwater flooding to the proposed development is considered to be low.

4.2 Known Historic Flooding

According to the Natural Resources Wales (NRW) Flood Map for Planning, there are no recorded flood extents at the site

4.3 Existing Flood Defences

According to the NRW Flood Map for Planning, the site is situated within the TAN 15 Sea Defended Zone, an area that benefits from Risk Management Authority flood defences designed for a 1 in 200-year (present-day) sea flooding event.



5.0 FLOOD RISK ASSESSMENT AND ACCEPTABILITY OF FLOOD CONSEQUENCES

NRW has provided the 2016 Caldicot and Wentlooge Coastal Model (Ref: CaldicotAndWentlooge_5_V1.0_2016_Product6). The relevant flood modelling results extracts have been included in Appendix G of this report to support the assessment against the criteria set out in TAN 15.

5.1 Frequency Thresholds

In accordance with TAN15 (2025), the proposed development is classified as 'less vulnerable development' for all commercial/industrial areas.

Section 11.7 of TAN15 states that new developments should be designed to remain flood-free during a 1% river flood event (i.e., a flood with a 1 in 100 chance of occurring in any year) and a 0.5% coastal flood event (i.e., a flood with a 1 in 200 chance of occurring in any year), including an allowance for climate change over the lifetime of the development.

Vulnerability category		Flood Event Type	
Highly vulnerable development	Emergency services (command centres and hubs)	0.1%+CC (1 in 1,000)	0.1%+CC (1 in 1,000)
	All other types	1% +CC (1 in 100)	0.5%+CC (1 in 200)
Less vulnerable development		1% +CC (1 in 100)	0.5% +CC (1 in 200)
Water compatible development that may be occupied by people		1% +CC (1 in 100)	0.5% +CC (1 in 200)

Table 4 – Frequency thresholds for Flood events in which development must be flood-free extracted from TAN15 (March 2025)

According to the NRW modelling information received, the site experiences a flood depth of up to 691 mm in a '1 in 200-year coastal flooding event with climate change (year 2115 horizon year with 95% confidence interval) and flood defence' scenario.

It should also be noted that section 11.8 of TAN15 states that **"if the criteria set out in Table 4 above cannot reasonably be met, the planning authority should seek the views of the relevant risk management authorities on the resilience measures proposed to help it reach a decision."** It further notes that **"the thresholds may be applied with more flexibility for redevelopment, changes of use, conversions, and extensions, where the ability to substantially redesign a development is limited"**.

All proposed building units on the site are considered extensions to the existing site, rather than new development. Therefore, the received NRW flood modelling information, which shows flooding in a '1 in 200 years coastal flooding event with climate change (year 2115 horizon year with 95% confidence interval) and flood defence', should not be treated as a criterion for refusal of development in this area.

The site is not located within the NRW Flood Map for Planning River Flood Zones. It is therefore considered that the risk of flooding from rivers, including climate change allowance, is less than 0.1%, meeting the 'frequency threshold' criteria set out in section 11.7 of TAN15.



Additionally, all proposed units are located outside the Surface Water and Small Watercourses flood zones.

5.2 Tolerable Conditions

Table 5 below shows the tolerance condition under which new development may be considered acceptable in extreme events.

Types of new development	Maximum depth of flooding (mm)	Maximum velocity of flood waters (metres/sec)
Highly vulnerable development	600	0.15
Less vulnerable development	600	0.3

Table 5 – Tolerable conditions in an extreme flood event extracted from TAN15 (March 2025)

It is acknowledged that, according to the NRW flood modelling information, in a ‘1 in 1,000 years event with climate change (year 2115 horizon year with 95% confidence interval) and flood defence, the site may experience flood depths up to 2152 mm and flood velocities up to 0.94 m/s.

TAN15 states that “each site, however, must be considered individually, and a judgement taken in the context of the circumstances which could prevail at that site.”

It should be noted that all proposed building units for this development are considered to be extensions to the existing building, rather than new development, as stated previously. Therefore, the tolerable conditions described above should not be directly applicable to the assessment of this development, and the assessment should instead be based on the specific nature of the proposed extensions.

Therefore, it is considered that the proposed commercial/industrial extensions on this site broadly comply with the requirements of TAN15, subject to the planning authority’s judgment and assessment. The mitigation measures and resilience measures are listed in sections below to provide further information to the planning authority to make a planning decision.

Table 6 below shows the expected flood depth and velocity in various NRW flood modelling scenarios analysed above.

NRW Flood Modelling Scenario	Maximum depth of flooding within the development area(mm)	Maximum velocity of flood waters within the development area(metres/sec)
1 In 200 Year Flood Event (with 2115 Climate Change Horizon Year and 95% Confidence Interval with Flood Defence)	691	N/A
1 In 1000 Year Flood Event (with 2115 Climate Change Horizon Year and 95% Confidence Interval with Flood Defence)	2152	0.94

Table 6 – Tolerable conditions in an extreme flood event extracted from TAN15 (March 2025)



5.3 Acceptability Criteria For Flooding Consequences

The development will ensure the below conditions are met in accordance with the requirements set out in section 11.4 in TAN 15:

- No increase in flooding elsewhere
- Occupiers aware of flood risk
- Escape/evacuation routes present
- Flood emergency plans and procedures agreed and in place
- Flood-resistant and resilient design

Section 11.5 TAN 15 notes that the flood consequence assessment should be used to establish whether suitable mitigation measures can be incorporated within the development to ensure that the development is as safe as possible and there is:

- minimal risk to life;
- minimal disruption to people living and working in the area,
- minimal potential damage to property;
- minimal impact of the proposed development on flood risk generally; and,
- minimal disruption to natural heritage.

Due to the nature of the proposed development and the mitigation measures outlined in the sections below, the development is expected to have minimal impact on each of the bullet points identified above, as addressed within this report.

6.0 MITIGATION MEASURES

6.1 Site Layout Design

To reduce the risk of flooding to future site occupants, and to ensure that the development remains safe throughout its lifetime, it is proposed that the storage units be located in the north-western area of the site, with the proposed plasma cutting unit and workshop positioned directly to the west of the existing building.

It should be noted that multiple storage containers currently occupy the north-western area of the site. These are placed directly on the ground and are presently used for storage as part of the site's operations. The proposed single-storey portal frame warehouse storage unit will be located in this area, replacing the existing storage containers. This new building will provide a safer, larger, and more efficient internal space, with improved accessibility and improved operation environment for site users.

The proposed plasma cutting unit and workshop will be located directly to the west of the existing building, where flood depth and velocity are comparatively lower than in the remainder of the site as shown in the NRW flood modelling information.



6.2 Structural Resilience

All proposed units will have finished floor levels set at least 150 mm above the adjacent ground level to mitigate the risk of surface water flooding. Flood-resistant materials will be considered for use in external walls, floors, doors, and finishes. In addition, electrical sockets and services will be installed a minimum of 600 mm above ground level to provide resilience to flooding.

6.3 Flood Storage Features

A detailed SAB-compliant surface water drainage system is proposed to serve the development. The surface water drainage system will incorporate appropriate attenuation measures to manage surface water runoff rates and volumes effectively. The inclusion of a non-return valve will also be considered within the surface water drainage system to prevent backflow during a tidal flooding event.

These measures will ensure that flood risk, both to and from the development, is mitigated in accordance with the acceptability criteria set out in Technical Advice Note 15 (2025) and the Welsh Government's National SuDS Standards. The surface water drainage system will be based on sustainable principles, ensuring compliance with current legislation while promoting long-term drainage and flood resilience.

6.4 Evacuation Plans, Safe Refuge Areas and Warnings

Flood Warning

The site is located within a flood risk area. Therefore, the landowner or acting agents will register with NRW's flood warning telephone service. Guidance on preparing for a flood is available on the NRW website (<https://naturalresources.wales/flooding/preparing-for-a-flood/>). Contact details for the site will be registered with the NRW flood warning service to ensure timely receipt of flood alerts and warnings.

All site occupants will be made aware of the NRW Floodline telephone number, together with the flood warning codes and their meanings. The landowner will act as the designated flood warden for the site, ensuring that they understand the local flood mechanisms and that the safety of occupants and visitors is not compromised during a flood event.

Flood Plan

All unit occupiers will be expected to prepare a flood plan, setting out the precautions and actions to be taken when a flood event is anticipated, in order to minimise potential impacts and damage. Sensible measures include raising electrical equipment, irreplaceable, or sentimental items off the ground, or relocating them to an upper floor where possible. Other recommended actions include rolling up carpets and rugs, switching off utilities, and preparing for possible evacuation. Evacuation planning should consider safe access and egress routes and the advance preparation of a flood kit containing essential items such as warm clothing, medication, a torch, food, and wellington boots.

The flood plan will be treated as a 'living' document and should be periodically reviewed and updated to ensure it provides clear and practical advice to occupants in the event of an extreme flood. By implementing and maintaining the plan, occupiers will reduce their vulnerability to flooding and improve awareness of flood mechanisms specific to the site. The



designated flood warden will be responsible for monitoring flood levels, keeping occupants and visitors informed, and determining when to initiate the flood plan.

Access and egress routes will enable occupants to safely enter and exit properties during the designed flood conditions. These routes must also allow emergency services to reach the development during a flood event and ensure that flood defence authorities are able to carry out any necessary duties during periods of flooding.

Safe Access and Egress Route

A safe access and egress route, including emergency access, will be maintained for vehicles and pedestrians. In the event of flooding, people should make their way to areas located outside the flood zone. As the entire site is situated within the NRW Sea Flood Zone 3, it is recommended that occupants evacuate via the adjacent public road, Langland Way.

The safe access and egress route is illustrated in Figure 3. This identifies the exit route to be followed by all site users (occupants and visitors) once a flood warning has been issued. Site occupants will evacuate to the north of Spytty Road, following the designated egress route, and continue to the public highway outside any NRW-designated flood zones.

It should also be noted that the existing site building is two storeys in height. If evacuation cannot be undertaken safely in time, occupants may temporarily seek refuge on the first floor of the building until it is safe to leave or assistance arrives.

In the event of a flood warning, essential belongings such as waterproof clothing, necessary medication, and items required for infants and children should be collected in advance of evacuation. All site occupiers and visitors must be accounted for prior to leaving the premises, and the evacuation should proceed along the route shown in Figure 3.

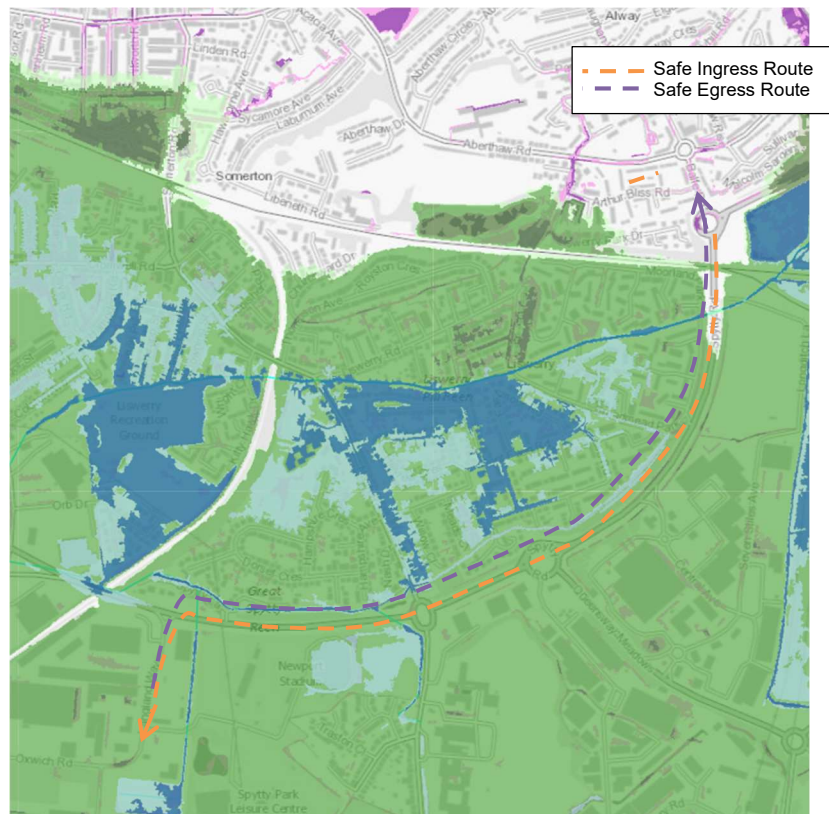


Figure 3 – Safe Access and Egress Route

7.0 ACCESS AND EGRESS

7.1 Access Routes During Flood Events

During a flood event, or once a flood warning has been received, site occupants will follow the designated safe egress route shown in Figure 3. This route leads to the public road to the north of Spytty Road, which lies outside all NRW flood zones and is expected to remain flood-free during a flood event.

7.2 Emergency Services Access

During a flood event, emergency services will access the site via the main entrance located on the eastern boundary. This access route connects directly to the local highway network, providing safe entry and exit for emergency vehicles. The proposed development will ensure that water does not accumulate along this route, allowing emergency responders to reach all parts of the development safely and efficiently, even during extreme rainfall events. The site occupier will ensure that access routes remain clear at all times, enabling emergency services to maintain direct access to building frontages.

8.0 DRAINAGE STATEMENT

8.1 Proposed Surface Water Drainage Strategy

A SAB-compliant drainage system will be incorporated into this development and will comply with the Welsh Government's National SuDS Standards. The proposed surface water



drainage system will incorporate an agreed restricted flow rate with SAB, likely based on the greenfield runoff rate, and will provide appropriate attenuation measures.

The drainage system will accommodate a 1 in 100-year rainfall event, with an additional 40% allowance for climate change and a 10% allowance for urban creep. Hydraulic modelling will be undertaken to demonstrate that the drainage network is feasible and effective. A non-return valve will be considered for incorporation into the system to prevent backflow caused by tidal flooding.

Runoff water quality will meet the thresholds set out in CIRIA C753, and all SuDS features will be in accordance with CIRIA C753 guidance. SuDS features will be incorporated across the site to provide the required treatment and attenuation volumes. The surface water drainage system will also consider enhancements to amenity and biodiversity, for example, through natural channels such as swales.

A SuDS maintenance plan will be prepared and provided to future occupiers and will form part of the SAB submission. This plan will ensure that the drainage system remains effective throughout the lifetime of the development.

At the time of writing, a SAB pre-application has been submitted to Newport SAB, and the proposed drainage strategy has been submitted to planning. The proposed drainage layout has been included in Appendix H.



8.2 Infiltration Feasibility

A desktop study has been undertaken to assess the potential for surface water discharge via infiltration. Information was sourced from the British Geological Survey (BGS) and the Cranfield Soil and Agri-food Institute (CSAI) Soilscales mapping.

The bedrock geology has been identified as Mercia Mudstone Group - Mudstone. The superficial deposit has been identified as Tidal Flat Deposits - Clay and silt. Soilscales has identified the soil as loamy and clayey soils of coastal flats with naturally high groundwater, with Naturally wet drainage.

Given the soil and geological conditions indicated above, infiltration is considered unsuitable for this site. This will be confirmed in consultation with the SAB prior to finalising the surface water drainage system.

8.3 Runoff Rates and Volumes

It is proposed that surface water runoff from the development will be discharged at a restricted flow rate (Q_{bar}), based on the greenfield runoff rate, to ensure that the development does not increase flood risk either on-site or elsewhere. The proposed runoff rate will be agreed with the SAB authority during the SAB application stage.

8.4 Exceedance and Overland Flow

Exceedance and overland flow pathways will be considered in the surface water drainage system to ensure that the development is safe, flood-resilient, and does not increase flood risk elsewhere. In the event of exceedance or blockage, surface water runoff from the site will follow the natural topography, flowing toward the lowest part of the site in accordance with the existing site conditions.



9.0 SUMMARY AND CONCLUSION

This Flood Consequence Assessment (FCA) has been prepared to support the planning application (NCC planning ref: 25/0476) and was requested by NRW as additional information to enable further consideration of the site. The FCA concludes that the development can satisfy the updated criteria of Technical Advice Note 15 (TAN15) (March 2025), subject to the planning authority's assessment and approval.

All proposed commercial/industrial developments should be considered 'extensions' to the existing building on the site.

The proposed warehouse storage unit will replace the existing storage container units, providing a safer, larger, and more open internal space with improved access and operation environment for site users. The proposed plasma cutting unit and workshop will be located directly to the west of the existing building, where the flood depth and velocity are comparatively lower than in other parts of the site, as indicated in the NRW flood model information.

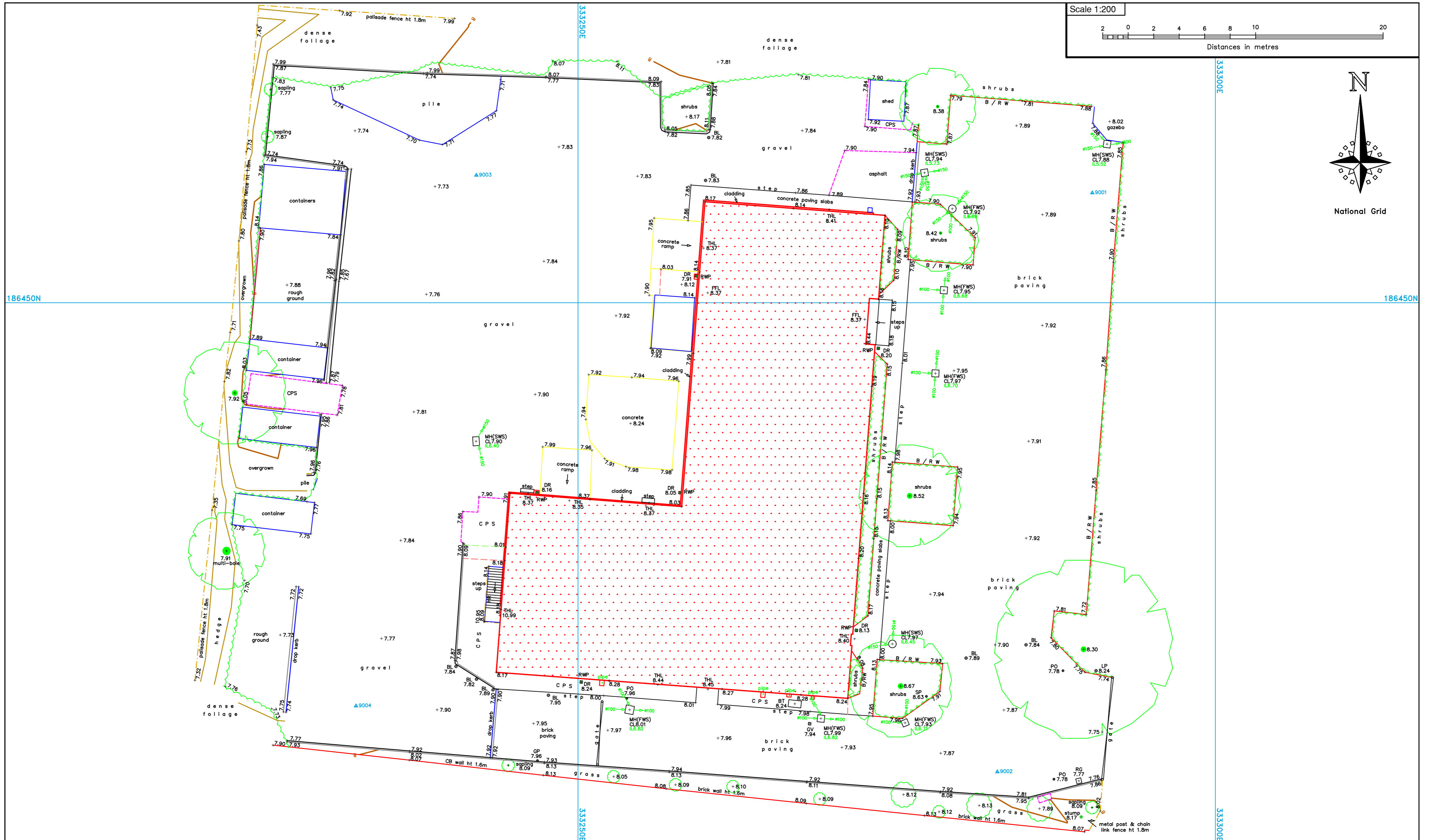
The development will incorporate flood-resilient measures, including elevated floor levels and appropriate structural provisions. Furthermore, a SuDS Approving Body (SAB)-compliant surface water drainage system will be implemented, incorporating flow control and attenuation measures to effectively manage surface water while enhancing the amenity and biodiversity of the site. Precautionary measures, such as non-return valves, will also be considered to mitigate potential backflow. The SAB-compliant surface water drainage system will ensure that off-site flood impacts are effectively managed.

The identified safe access and egress routes will be incorporated within a site-specific 'Flood Warning and Evacuation Plan', developed by the site occupier/agent, to ensure occupant awareness and safety.

With these flood mitigation and resilience measures, the development is expected to meet the acceptability criteria for flooding consequences.



Appendix A



Abbreviations:	
BB	Balisha beacon
BI	Bollard (Illuminated)
BL	Bollard
BT	telecom inspection cover
CATV	cable television cover
DC	conc. paving slabs
DK	drainage channel
DR	drop kerb
EP	electricity pole
ER	earth rod
FS	flag staff
FFL	finished floor level
HC	flower bed
GP	gate post
GV	gas valve
HR	handrail
HY	fire hydrant
IC	inspection cover (general)
JB	junction box
KO	kerb outlet
LP	lamp post
MH	man hole
MK	marker post
MP	mile post
NB	name board
O/H	overhead cable/wire
OHC	overhead cable
PO	post
RE	rodding eye
RS	reflector post
RS	road sign
RSJ	rolled steel joist
RWP	rain water pipe
SG	soaping
SP	sign post
SFS	stone paving slabs
SP	stay wire
SV	stop valve
SVP	soil vent pipe
tact.	tactile paving
THL	threshold level
TL	traffic light
TP	telephone pole
TV	vent pipe
WM	water meter
ht	height (of feature)
→	arrow indicates up (unless otherwise stated)
▲9002	survey control point
Excess	Excess
BW	barbed wire
C	chain
CB	close boarded
CL	chain link
CM	corrugated metal panel
CP	concrete panel
CW	cladded wire
IR	iron
IM	interwoven wooden slat
MM	metal mesh
OB	open boarded
PA	paving
R	retaining wall
PAL	pallade
W	wire
Wop	wood lap
CP	concrete post (e.g.: CP/CL)
WP	wooden post (e.g.: WP/BW)
Walls	Walls
B	brick
C	concrete
CB	concrete block
G	gabion baskets
S	stone
RW	retaining wall (e.g.: S/RW)
W	free-standing wall (e.g.: SW)
Drainage Features	Drainage Features
CL	cover level
ID	invert depth
IL	invert level
FWS	foul water sewer
SWS	storm water sewer
CWS	combined water sewer
UTD	unable to determine
UTL	unable to lift
SL	soffit level
→	arrow indicates direction of flow

Notes:

Revisions:

Topographical Surveys
 Engineering Surveys
 Measured Building Surveys

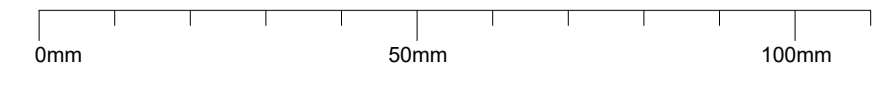
Boundary Surveys
 OS Mapping and Data Centre
 Underground Utility Surveys

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 enquiries@azimuthgroup.co.uk www.azimuthlandsurveys.co.uk
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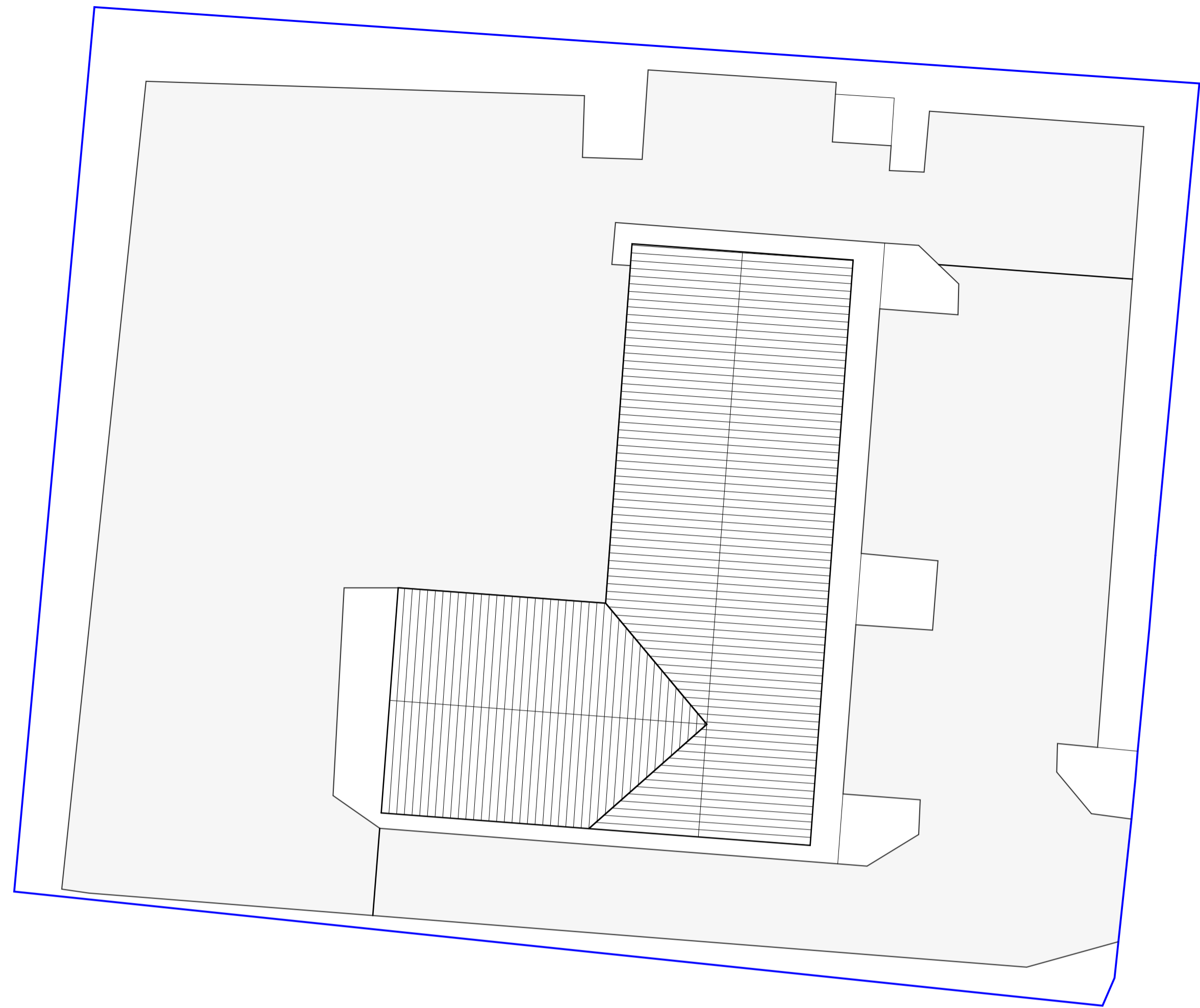
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Client		Sustainable Studio Architects			
Coord Grid	Plane Grid related to National Grid	Level Datum	OS Datum via Active GPS		
Scale	1:200@A2	Date	May 2025	Status	Final
Surveyed	L. Williams	Drawn	L. Rajnochova	Checked	R. Williams
				Job No.	SS4802
				Dwg. No.	SS4802-01

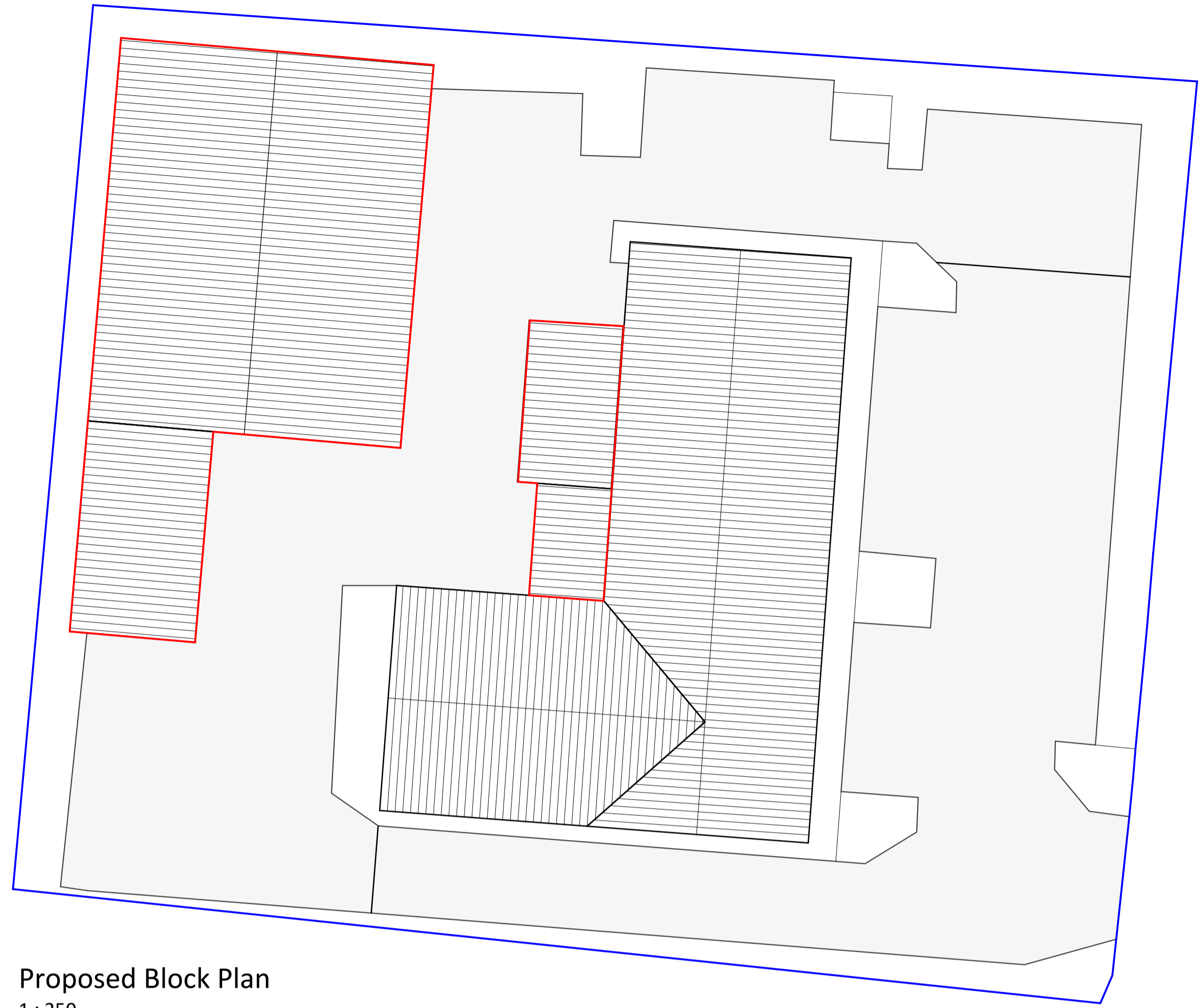
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All construction information should be taken from figured dimensions only.



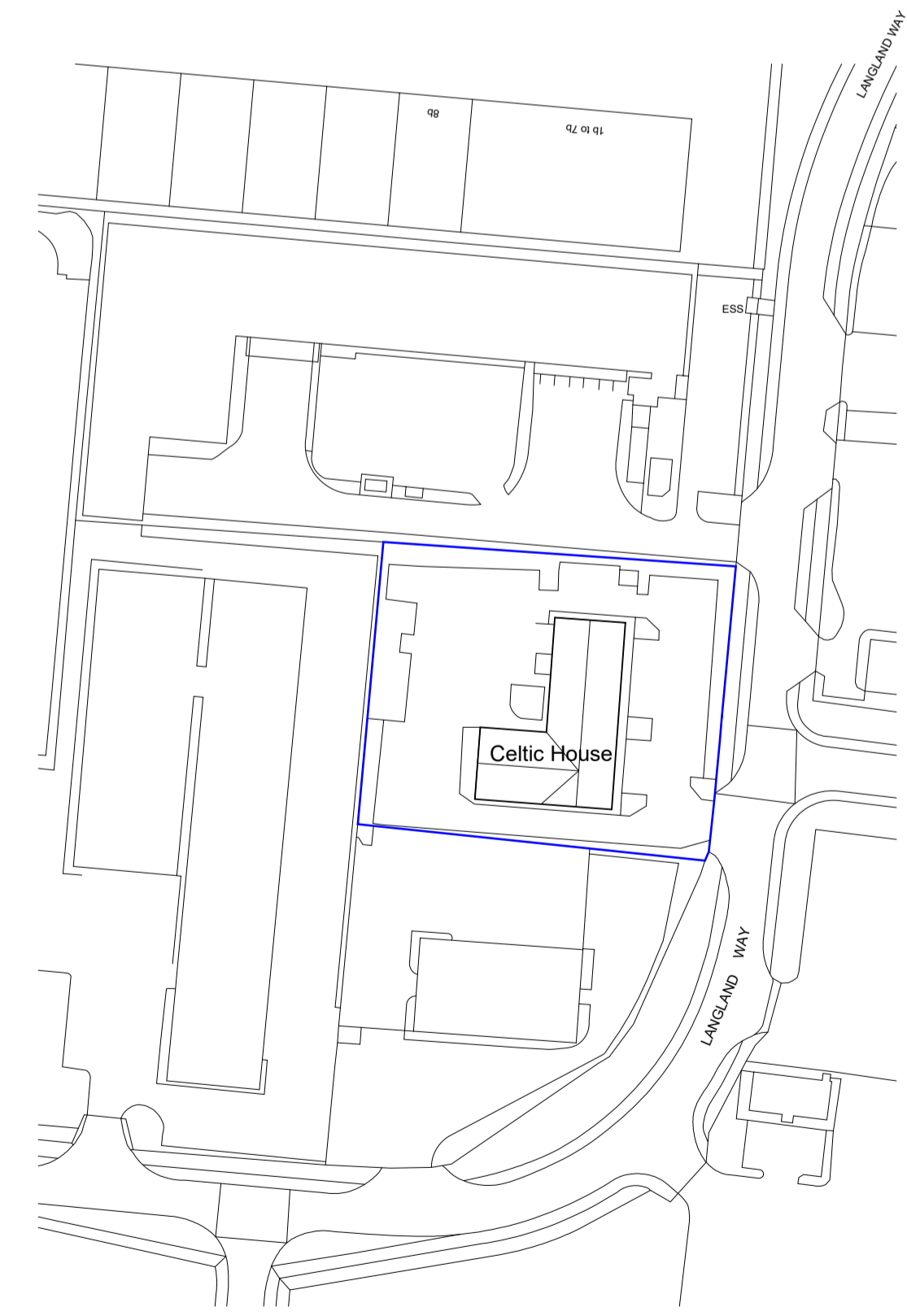
— Site Boundary
— Site Ownership



Existing Block Plan
1 : 250

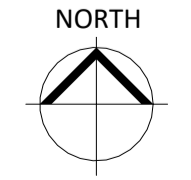
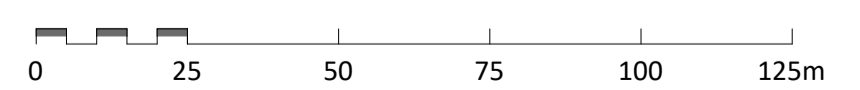


Proposed Block Plan
1 : 250



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Site Location Plan
1 : 1250



REV	DATE	DESCRIPTION	BY
CLIENT			DRAWN
Mr A Carter			AA
			CHECKED
			AJ

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1 Gold Tops, Newport NP20 4PG
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PROJECT
New Warehouse Unit and Extension at Celtic House, Langland Way, Newport, NP19 4PT

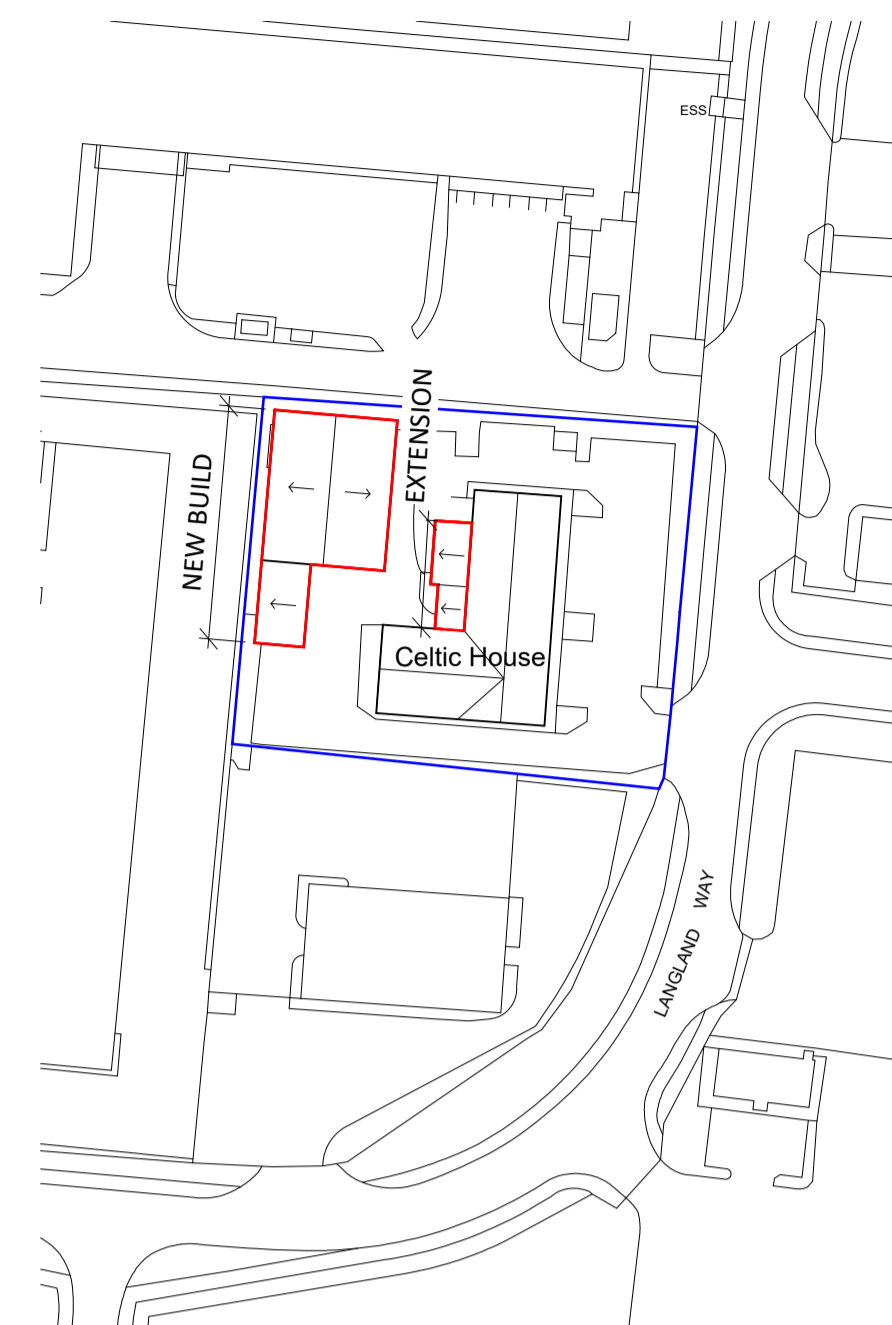
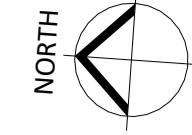
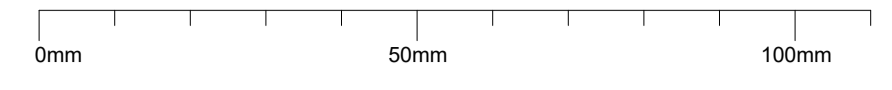
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Site Location and Block Plans

DRAWING STATUS	SCALE
PL : PLANNING	As indicated @ A1
NUMBER	REVISION
PL-001	

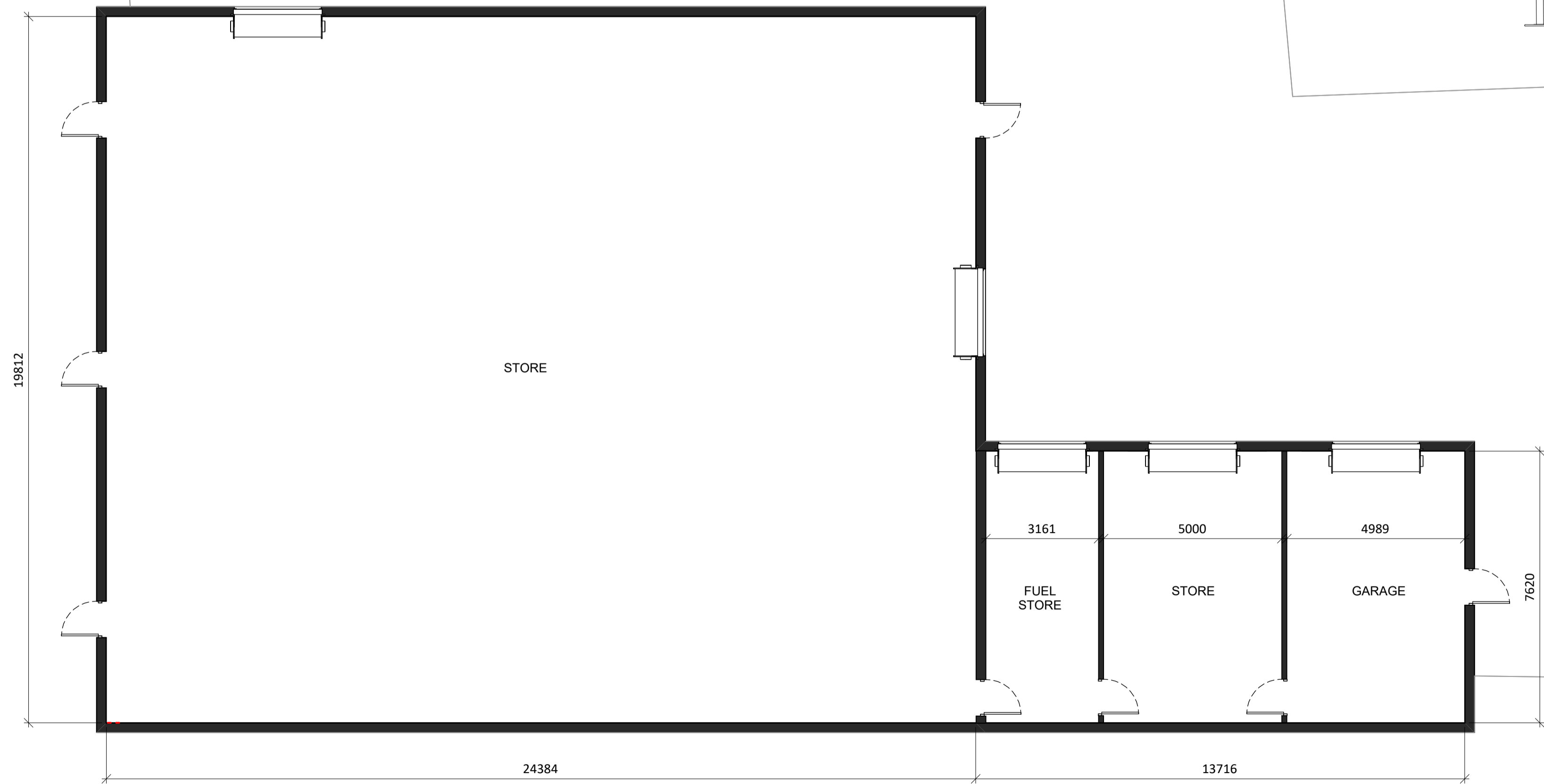
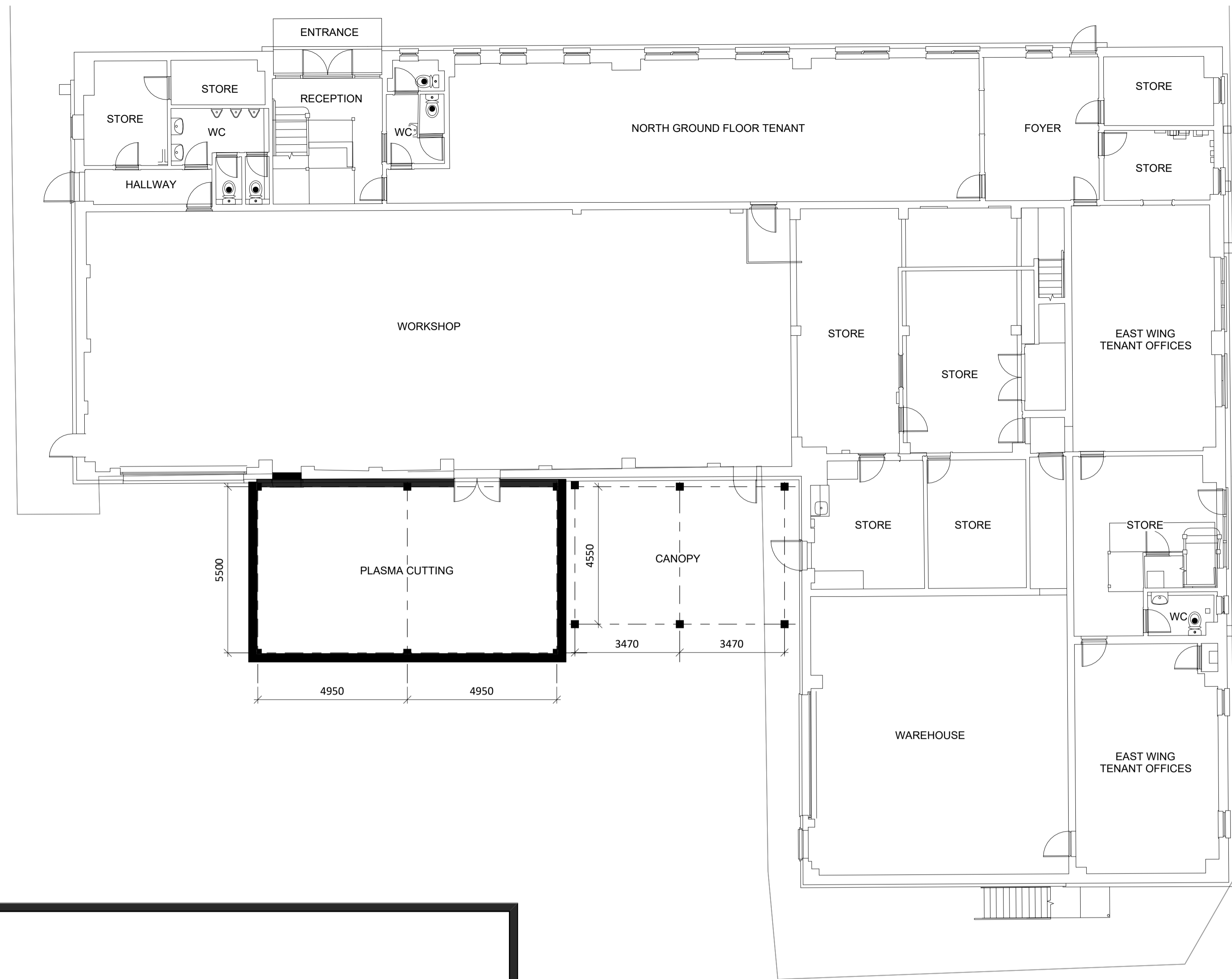


Appendix B

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All construction information should be taken from figured dimensions only.



GROSS EXTERNAL FLOOR AREA (GEFA):
 NEW BUILD WAREHOUSE = 579M²
 EXTENSION TO EXISTING BUILDING = 88M²



Proposed Ground Floor Plan
1 : 100

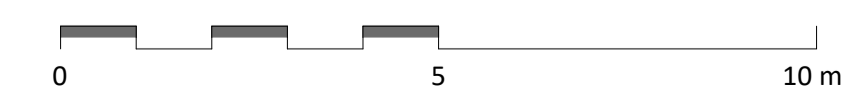
REV	DATE	DESCRIPTION	BY
CLIENT			DRAWN
Mr A Carter			AA
			CHECKED
			AJ

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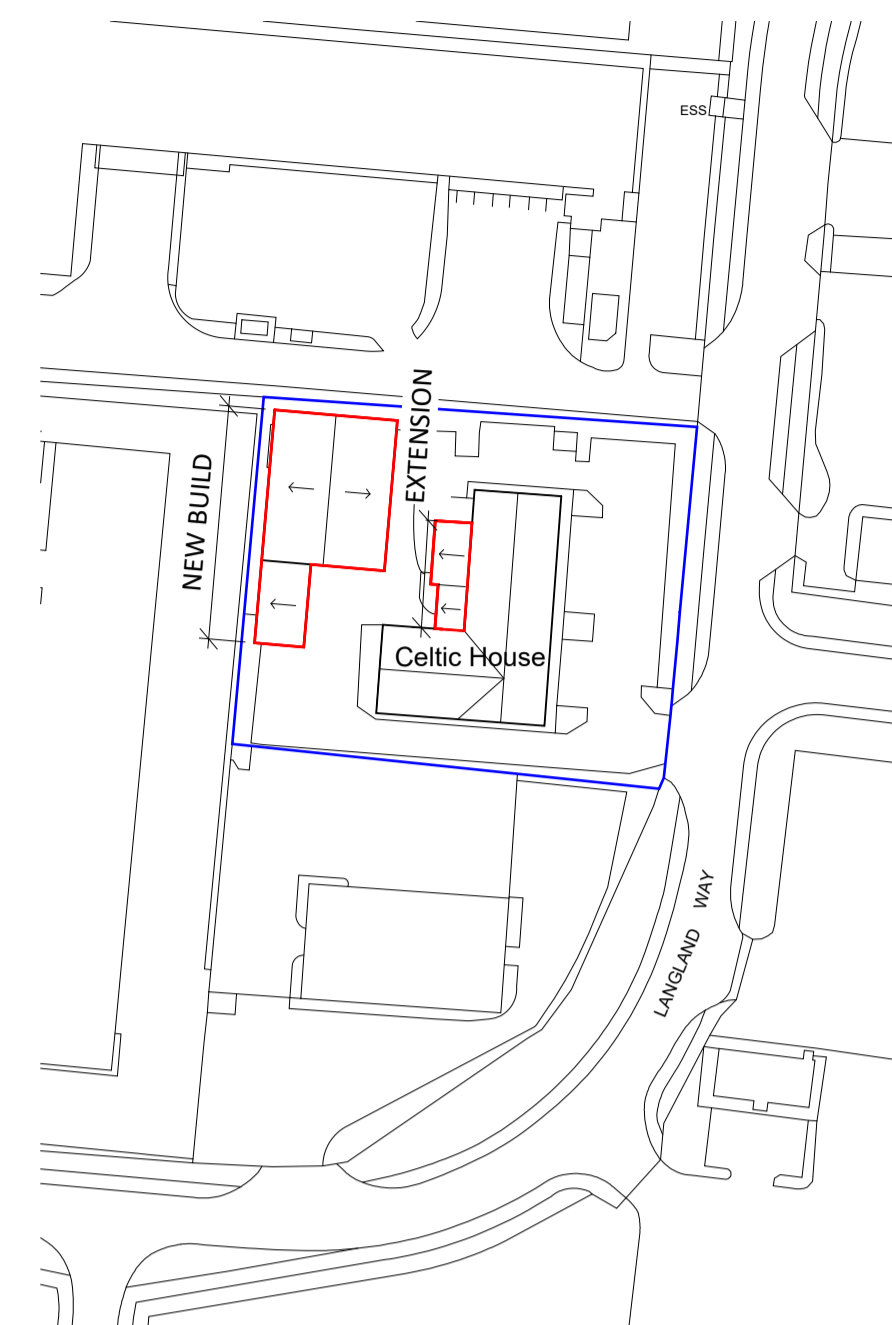
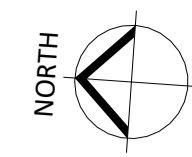
PROJECT
New Warehouse Unit and Extension at Celtic House, Langland Way, Newport, NP19 4PT

DRAWING TITLE
Proposed Plans - Ground Floor

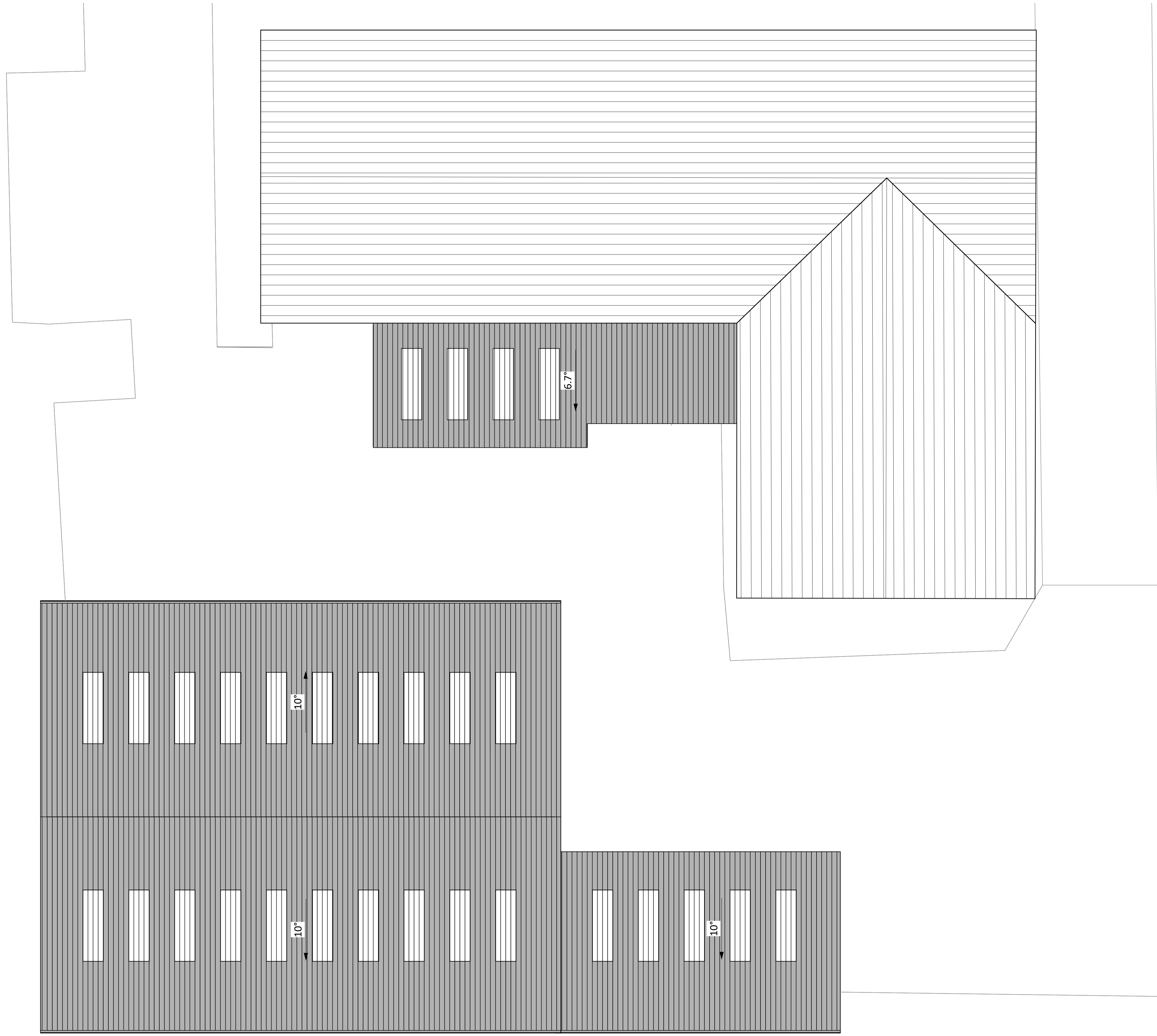
DRAWING STATUS	SCALE
PL : PLANNING	As indicated @ A1
NUMBER	REVISION
PL-005	



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GROSS EXTERNAL FLOOR AREA (GEFA):
 NEW BUILD WAREHOUSE = 579M²
 EXTENSION TO EXISTING BUILDING = 88M²



Proposed Roof Plan
1 : 100

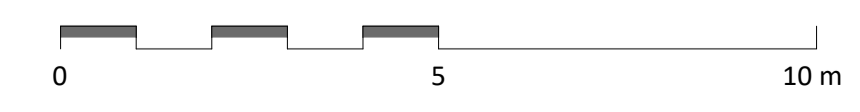
REV	DATE	DESCRIPTION	BY
CLIENT			DRAWN
Mr A Carter			AA
			CHECKED
			AJ

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PROJECT
 New Warehouse Unit and Extension at
 Celtic House,
 Langland Way,
 Newport, NP19 4PT

DRAWING TITLE
 Proposed Plans - Roof

DRAWING STATUS	SCALE
PL : PLANNING	As indicated @ A1
NUMBER	REVISION
PL-006	



Responsibility is not accepted for errors made by others in scaling from this drawing.
All construction information should be taken from figured dimensions only.

0mm 50mm



- Existing Celtic House Building
- New Large Building
24.3m x 19.8m (481m²)
- New Small Mono-Pitch Building
13.7m x 7.6m (104m²)
- New Mono-Pitch Extension
10m x 5m (50m²)

Existing 2.2m high chain link fencing to be replaced with new 3.5m high steel rail security fence to perimeter

REV.	DATE	DESCRIPTION	BY
		CLIENT	DRAWN
		Client	Author
			CHECKED
			Checker

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PROJECT
New Warehouse Unit
 Celtic House,
 Langland Way,
 Newport, NP19 4PT

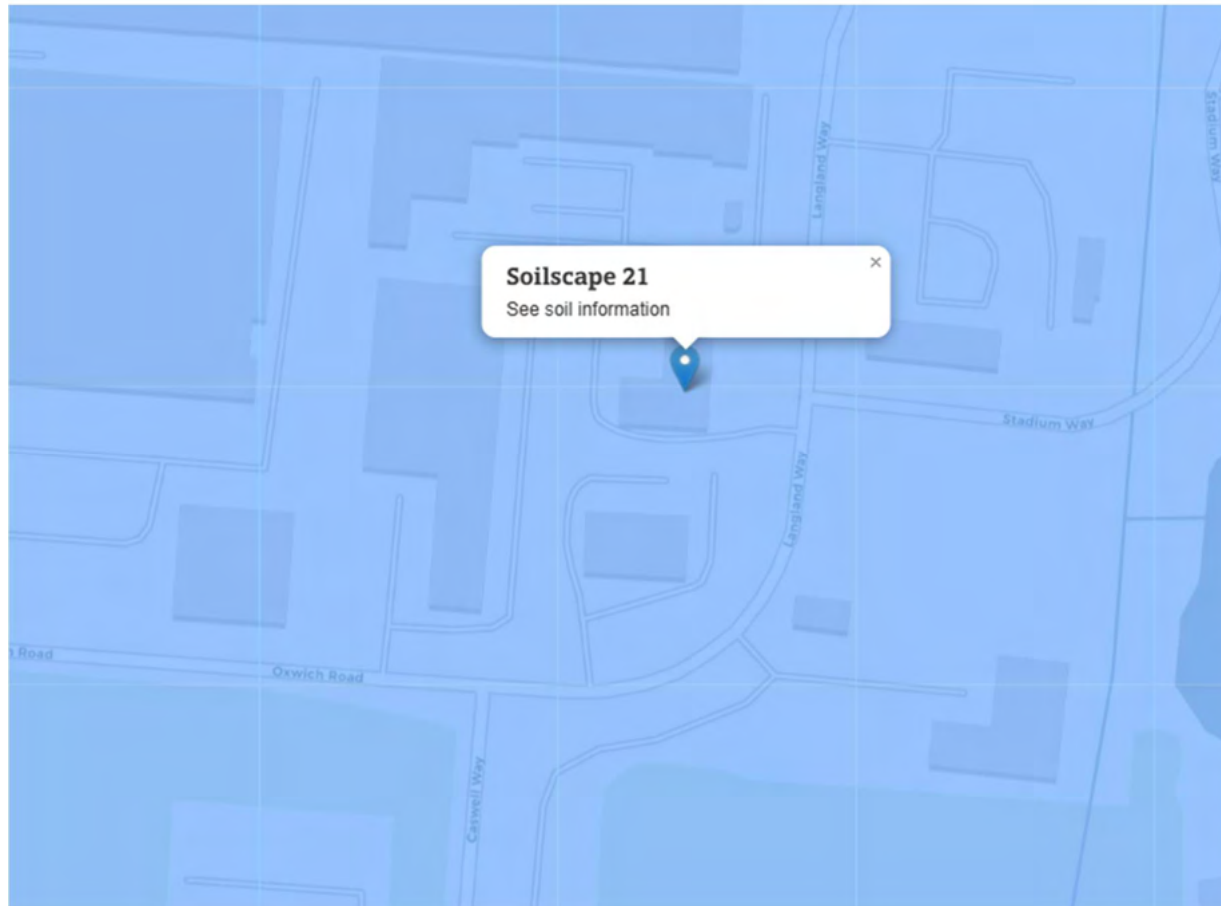
DRAWING TITLE
Proposed Site Plan

DRAWING STATUS PL : PLANNING	SCALE 1 : 250 @ A3
DRAWING NUMBER PL-005	REVISION

Proposed Site Scope
 1 : 250



Appendix C



Soilscape 21:

Loamy and clayey soils of coastal flats with naturally high groundwater

Texture:

Loamy and clayey

Coverage:

England: 3.7%, Wales: 1.3%, England & Wales: 3.4%

Drainage:

Naturally wet



Fertility:

Lime-rich to moderate



Landcover:

Arable some grassland

Habitats:

Wet brackish coastal flood meadows

Carbon:

Medium

Drains to:

Local groundwater

Water protection:

Soils are mostly drained. Shallow groundwater and marginal ditches to most fields mean that the water resource is vulnerable to pollution from nutrients, pesticides and wastes applied to the land

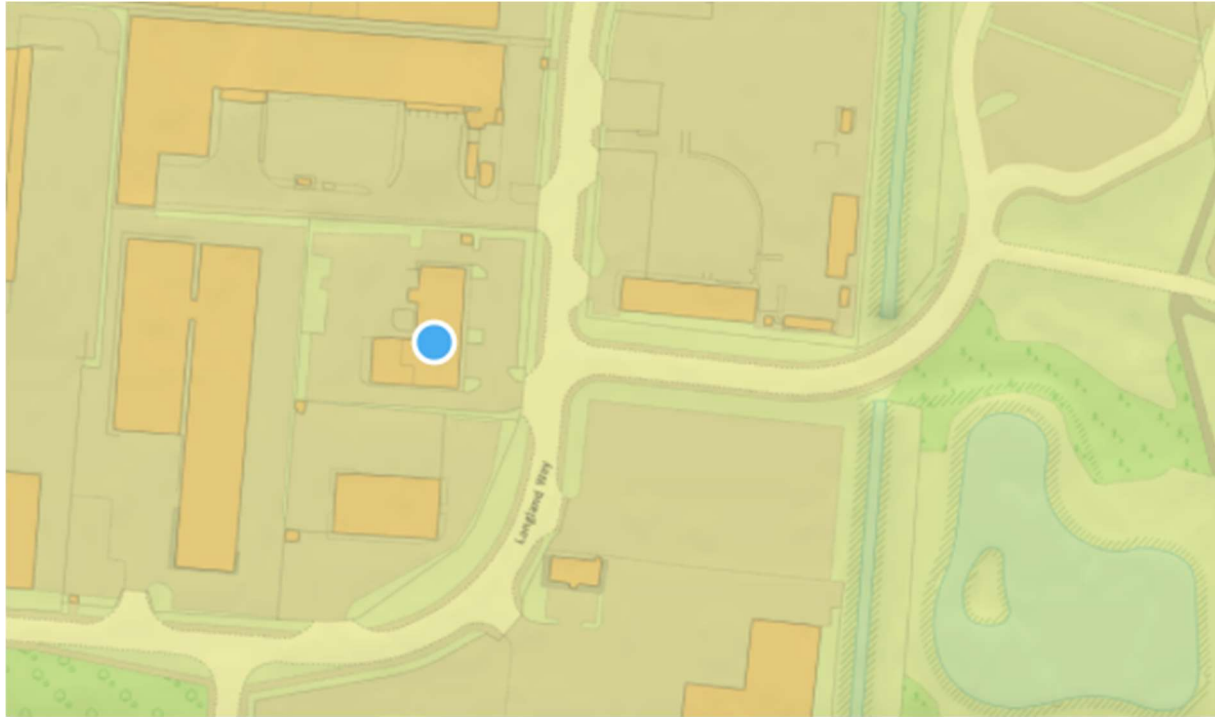
General cropping:

Lighter soils support a wide range of crops and are highly productive as they contain much available water and are stoneless and flat. Heavier soils are less easily worked and favour grass

Cranfield Soil and AgriFood Institute Soilscales Mapping



Appendix D



British Geology Survey - Bedrock and Superficial Deposit Map

Bedrock Geology:

Mercia Mudstone Group - Mudstone. Sedimentary bedrock formed between 252.2 and 201.3 million years ago during the Triassic period.

Superficial deposits:














Tidal Flat Deposits - Clay and silt. Sedimentary superficial deposit formed between 11.8 thousand years ago and the present during the Quaternary period.

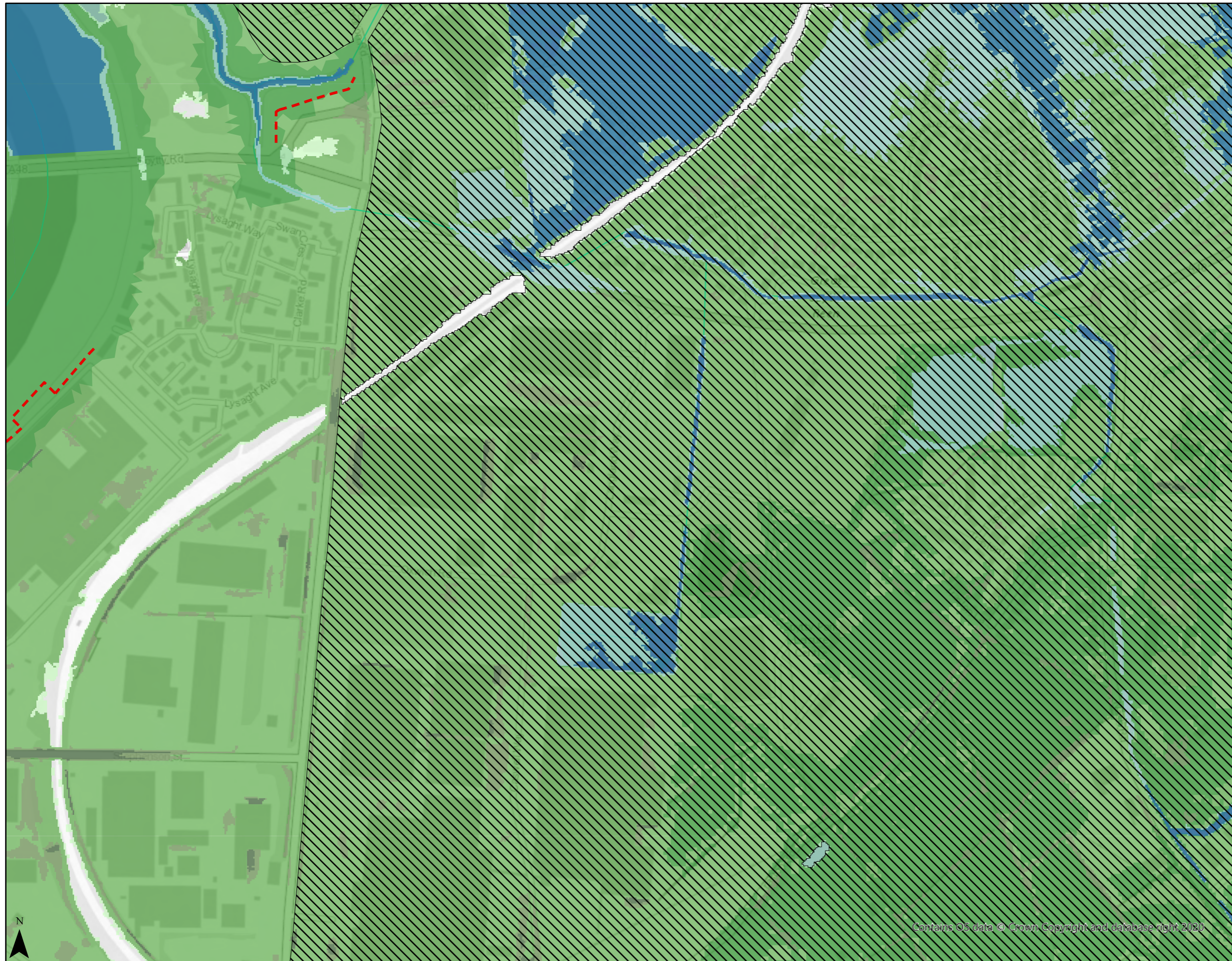


Appendix E

Flood Map for Planning - Detail
P0403 NRW Flood Map Detailed

Legend

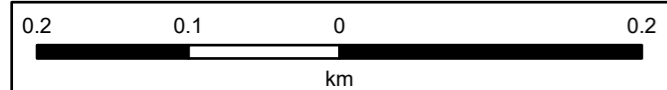
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- TAN15 Defended Zones
-  Rivers
-  Sea
-  Rivers and Sea
- Rivers
-  Flood Zone 3
-  Flood Zone 2
- Sea
-  Flood Zone 3
-  Flood Zone 2
- Surface Water and Small Watercourses
-  Flood Zone 3
-  Flood Zone 2
-  Recorded Flood Extents
-  Flood Risk from Reservoirs
-  Main Rivers



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Scale at A3: 1:5,000

Date: 21/08/2025



British National Grid

Disclaimer
<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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Flood Map for Planning - Detail
P0403 NRW Flood Map

Legend

Rivers

 Flood Zone 3

 Flood Zone 2

Sea

 Flood Zone 3

 Flood Zone 2

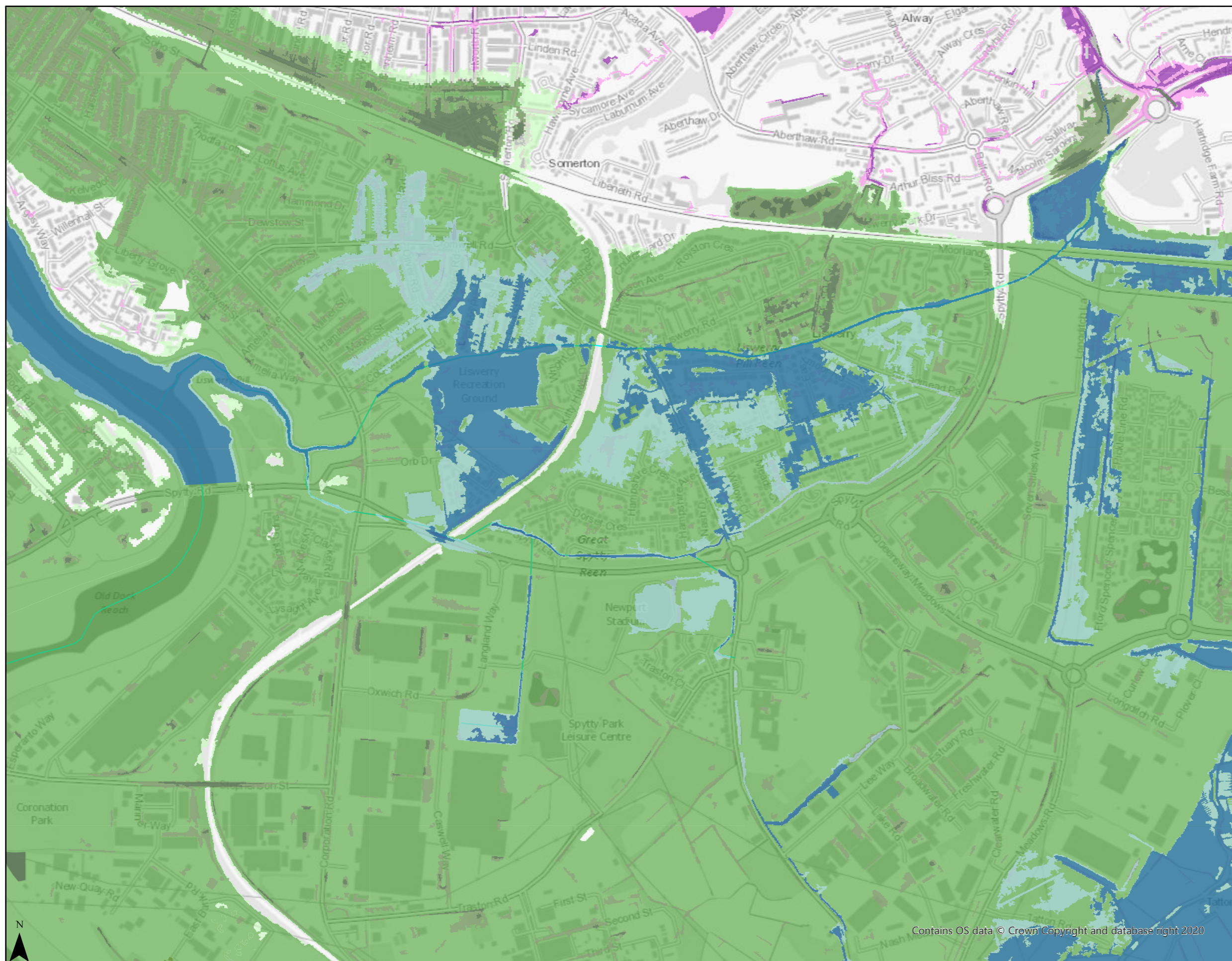
Surface Water and Small Watercourses

 Flood Zone 3

 Flood Zone 2

 Recorded Flood Extents

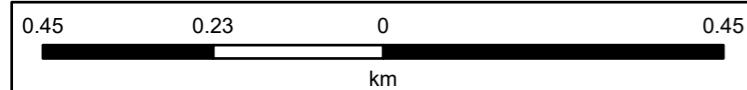
 Main Rivers



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Scale at A3: 1:10,000

Date: 21/08/2025



British National Grid


















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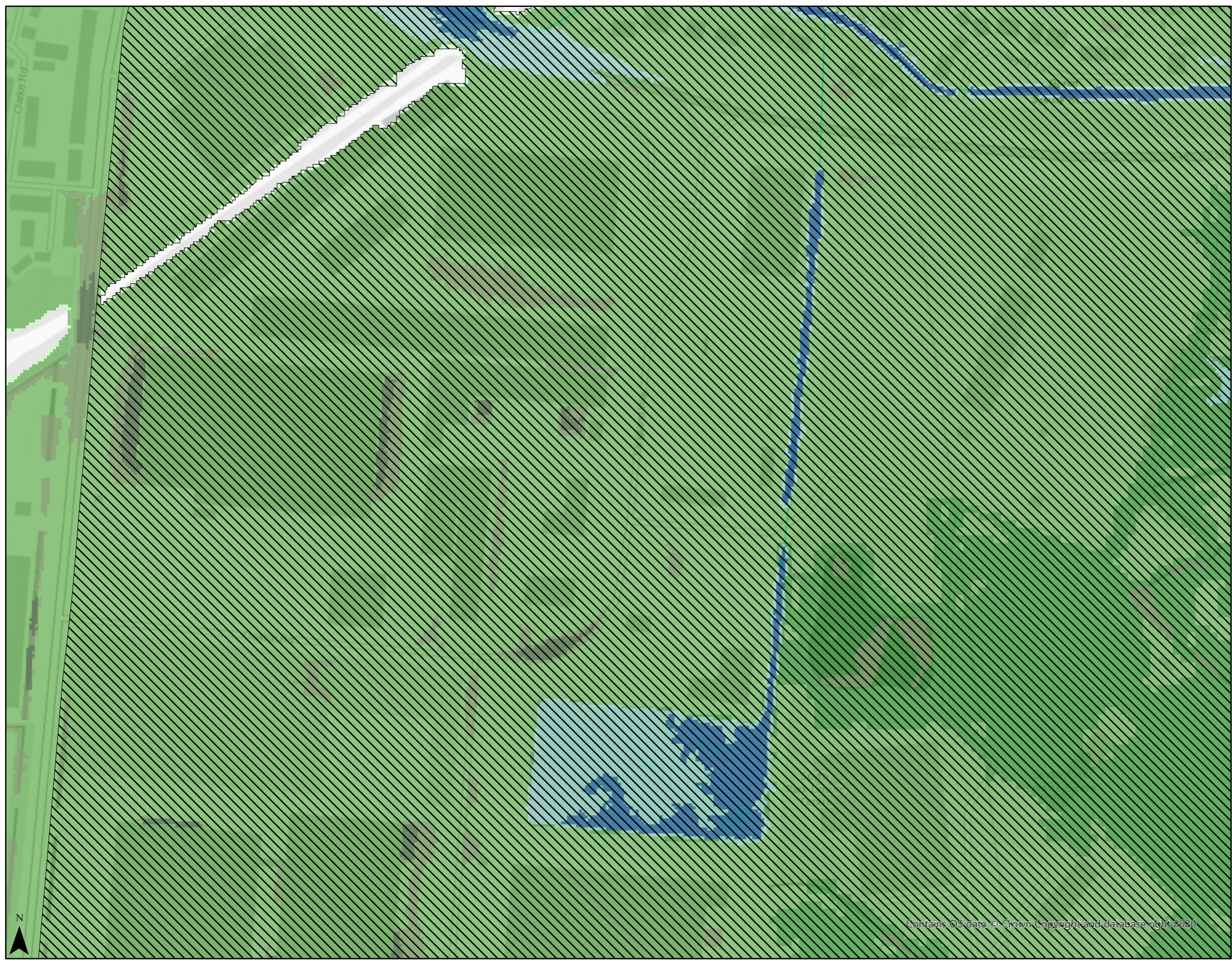
<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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**Flood Map for Planning - Detail
P0644**

Legend

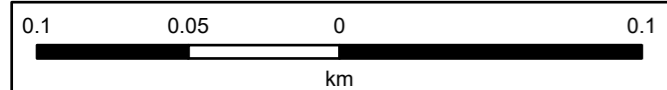
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- TAN15 Defended Zones
-  Rivers
-  Sea
-  Rivers and Sea
- Rivers
-  Flood Zone 3
-  Flood Zone 2
- Sea
-  Flood Zone 3
-  Flood Zone 2
- Surface Water and Small Watercourses
-  Flood Zone 3
-  Flood Zone 2
-  Recorded Flood Extents
-  Shoreline Management Plan policies
- Coastal Erosion Risk with No Active Intervention scenario
-  Short-term (2005-2025)
-  Medium-term (2005-2055)
-  Long-term (2005-2105)
-  Flood Risk from Reservoirs
-  Main Rivers



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Date: 01/07/2025



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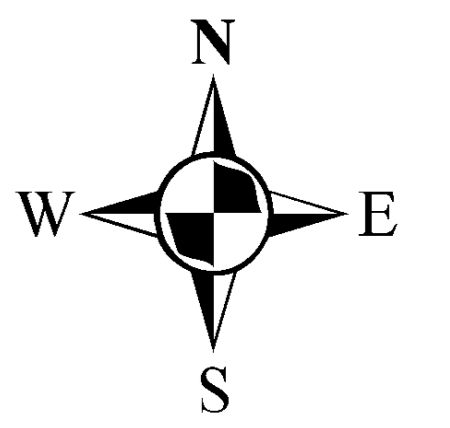


Appendix F



Dŵr Cymru
Welsh Water

Celtic House Newport NP20 4HF



LEGEND (Representative of most common features)

- Waste network:**
- Foul chamber
 - Surface water chamber
 - Combined chamber
 - Combined sewer overflow
 - Special purpose chamber
 - Treatment works
 - △ Pumping station
 - Outfall
 - Lamphole
 - Storm Overflow
 - Rising main
 - Gravity sewer
 - Private sewer
 - Private sewer subject to Sect. 124 reduction agreement
 - 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:

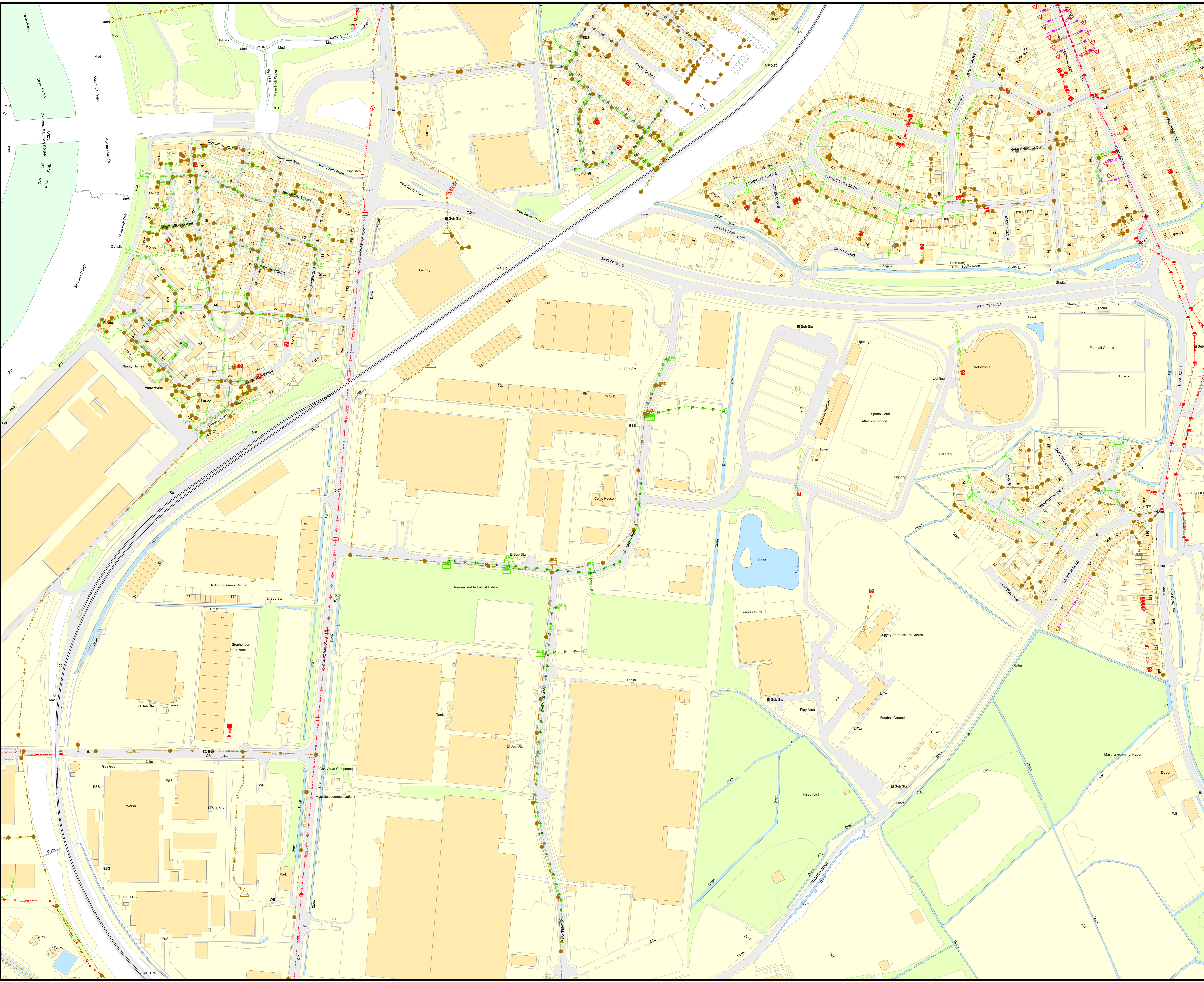
Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases, pipe material (other than Asbestos Cement or Pitch Fibre (PF)) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the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

Dŵr Cymru (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 is warranted as to its correctness as stated upon the issue of excavation or other works made in the vicinity of the Company's apparatus. The users of locating apparatus before carrying out any excavations reads entirely on their own. 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 provisions 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.

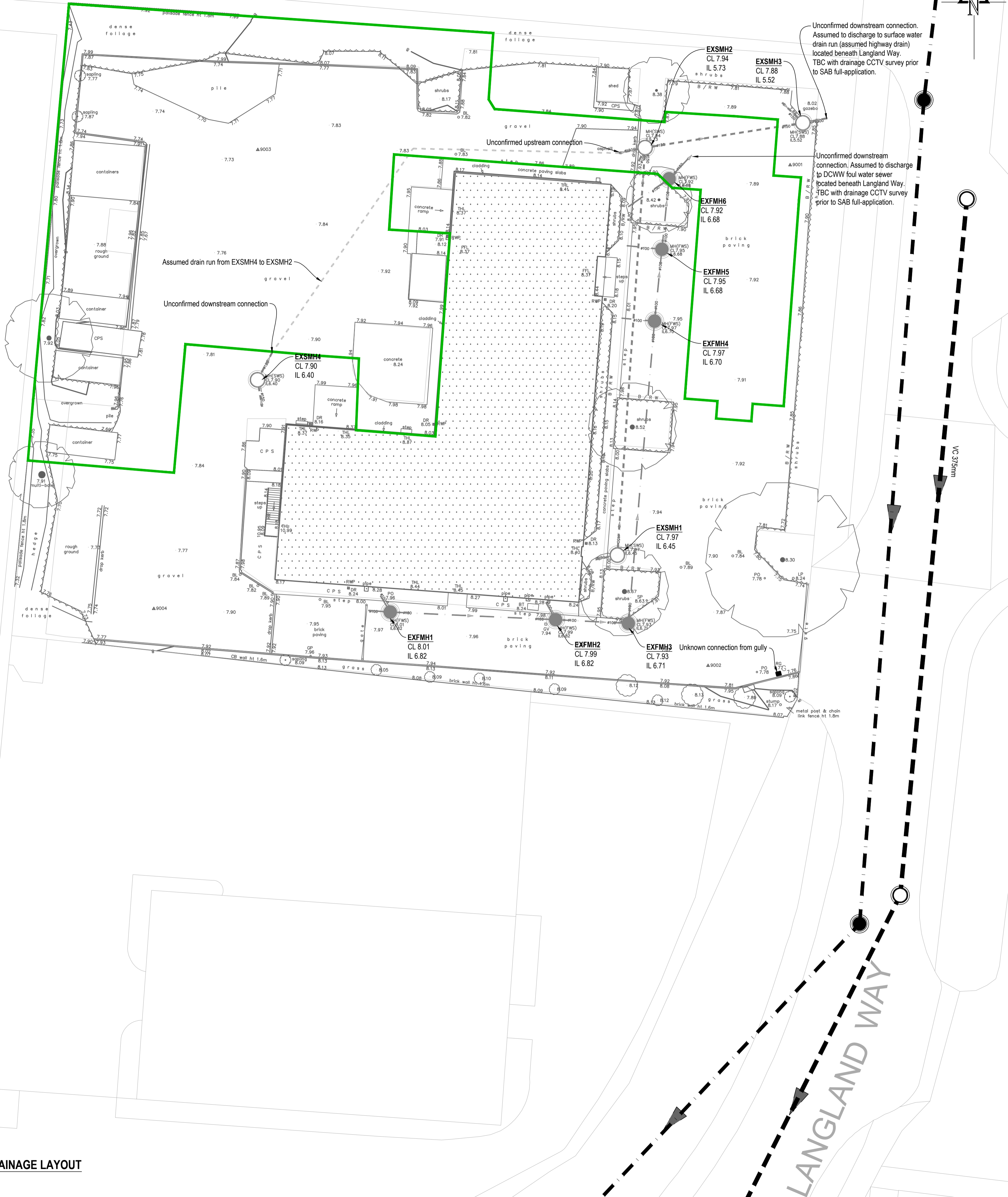
EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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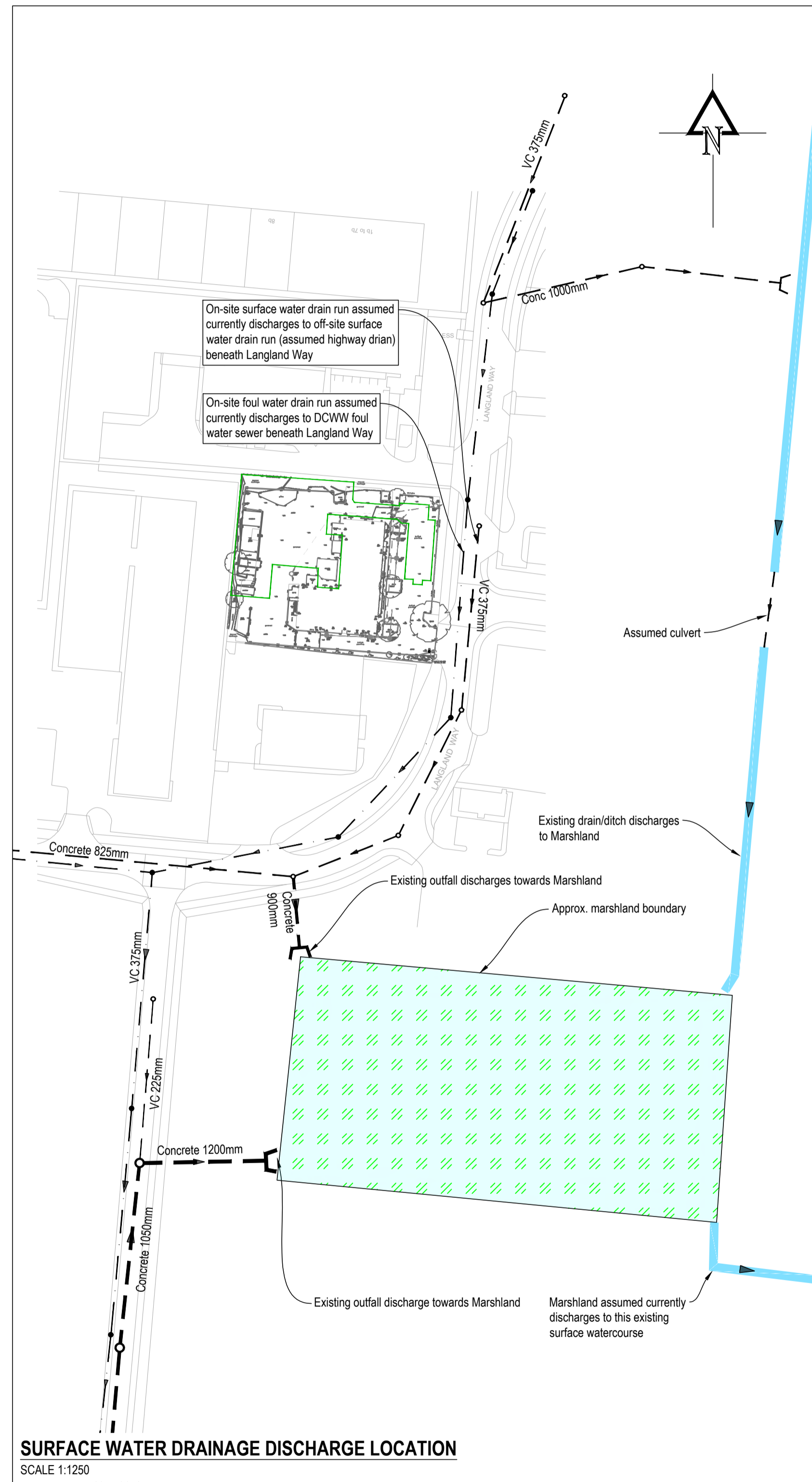
Map Ref: 333261,186437
 Map scale: 1:1500
 Printed by: Vefa Fox
 Printed on: 08 Jul 2025



EXISTING DRAINAGE LAYOUT
SCALE 1:200



Existing drainage information was based on topographical survey. Drainage CCTV survey to be carried out to confirm existing drainage connection prior to SAB full application.



SURFACE WATER DRAINAGE DISCHARGE LOCATION
SCALE 1:1250

KEY

	SAB Boundary
	Existing On-Site Private Foul Water Chamber
	Existing On-Site Private Surface Water Chamber
	Existing DCWW Public Foul Water Chamber
	Existing Off-Site Private Surface Water Chamber (Assumed Highway Drain Chamber)
	Existing On-Site Private Foul Water Drain
	Existing On-Site Private Surface Water Drain
	Existing DCWW Public Foul Water Sewer
	Existing Off-Site Private Surface Water Drain (Assumed Highway Drain)
	Existing Surface Water Outfall
	Existing Watercourse (Assumed Ditch)
	Existing Watercourse (Assumed Marshland)

- Notes:**
- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/specifications.
 - This drawing has been produced for information only and is not to be used for construction.
 - Exact location of all apparatus to be determined on site.
 - Topographical Survey was carried out by AZIMUTH LAND SURVEYS LIMITED (Date: May 2025, Ref: SS4802-01).
 - Existing drainage information was obtained from topographical survey, DataMapWales, and DCWW sewer map. Information shown partially for indicative purposes with assumptions.
 - Existing drainage information TBC with drainage CCTV survey prior to SAB full-application.
 - Other site features may be present.

Rev.	Date	Details	By	Chk.



Project: **CELTIC HOUSE, LANGLEID WAY NEWPORT**

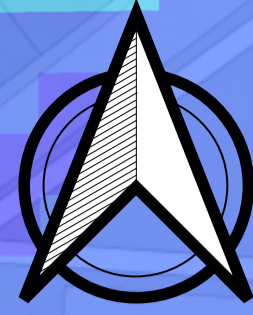
Title: **EXISTING DRAINAGE LAYOUT**

Drawing Status: **FOR INFORMATION**

Drawn: WH	Checked: PC	Scale(s) at A1: AS SHOWN
Date: 30/06/2025	Job No: P0644	Drawing No: SKc02



Appendix G



GENERAL NOTES

DRAWINGS AND SPECIFICATIONS: This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists drawings together with the specification.

Data obtained from Natural Resources Wales NRW.

To be used for Flood Consequence Assessment (FCA) planning phase only.

NOT FOR CONSTRUCTION.

Key

Flood Depth

- <= 0.30m ■
- 0.30 - 0.60m ■
- 0.60 - 0.80m ■
- 0.80 - 1.00m ■
- > 1.00m ■

Site Boundary —

1 In 200 Year Flood Event Flood Depth (with 2115 Climate Change Horizon Year and 95% Confidence Interval with Flood Defence)

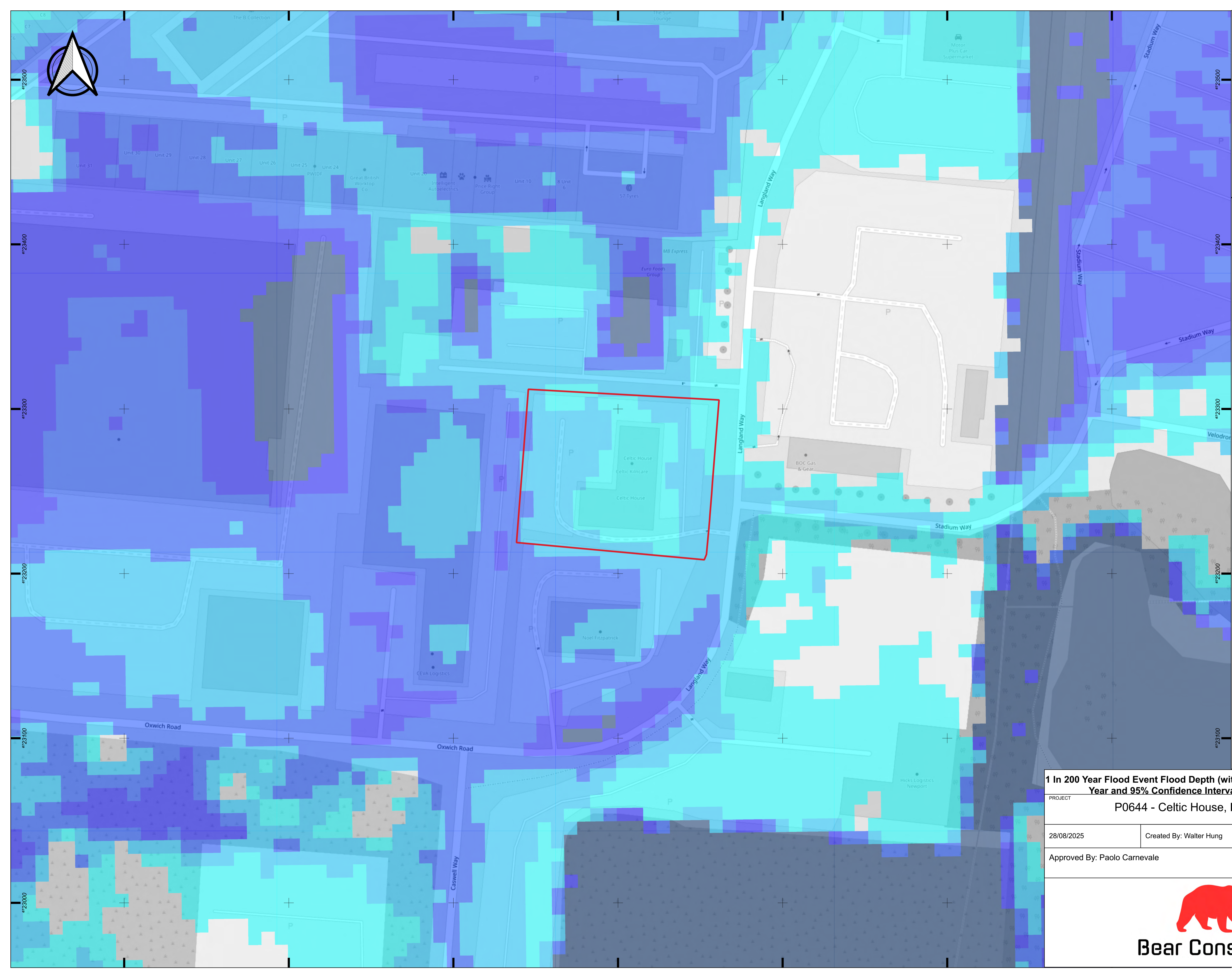
PROJECT
P0644 - Celtic House, Langland Way

28/08/2025 Created By: Walter Hung Scale 1:1,000

Approved By: Paolo Carnevale



Bear Consulting





GENERAL NOTES

DRAWINGS AND SPECIFICATIONS: This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists drawings together with the specification.

Data obtained from Natural Resources Wales NRW.

To be used for Flood Consequence Assessment (FCA) planning phase only.
NOT FOR CONSTRUCTION.

Key

Flood Depth

- <= 0.30m ■
- 0.30 - 0.60m ■
- 0.60 - 0.80m ■
- 0.80 - 1.00m ■
- > 1.00m ■

Site Boundary —

1 In 1000 Year Flood Event Flood Depth (with 2115 Climate Change Horizon Year and 95% Confidence Interval with Flood Defence)

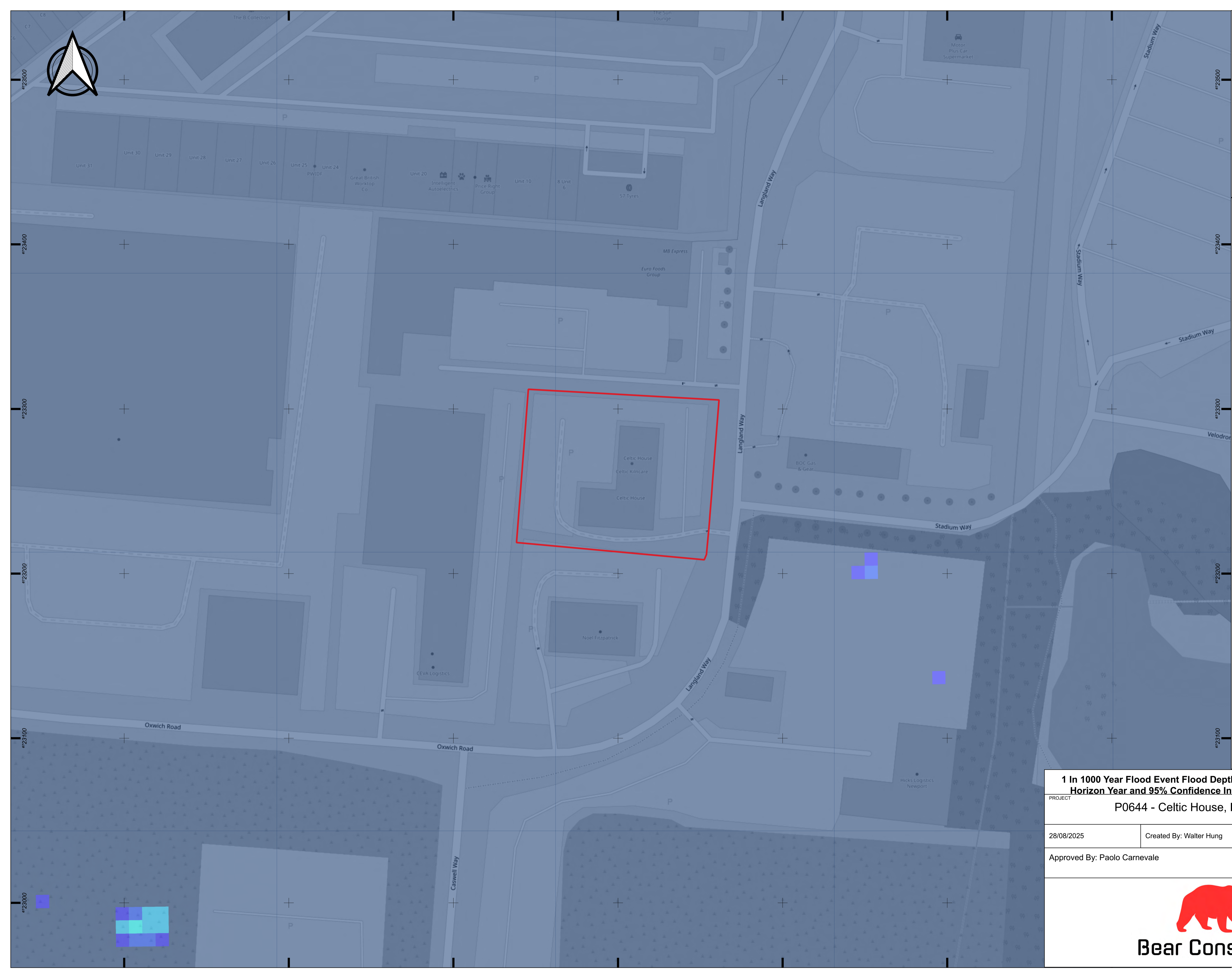
PROJECT
P0644 - Celtic House, Langland Way

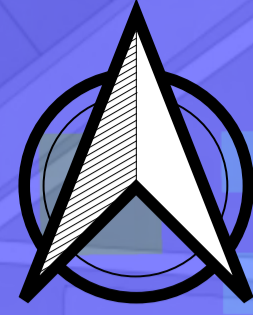
28/08/2025 Created By: Walter Hung Scale 1:1,000

Approved By: Paolo Carnevale



Bear Consulting





GENERAL NOTES

DRAWINGS AND SPECIFICATIONS: This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists drawings together with the specification.

Data obtained from Natural Resources Wales NRW.






To be used for Flood Consequence Assessment (FCA) planning phase only.

NOT FOR CONSTRUCTION.

Key

Site Boundary 

Flood Water Velocity

-  <= 0.10m/s
-  0.10 - 0.20m/s
-  0.20 - 0.30m/s
-  0.30 - 0.45m/s
-  > 0.45m/s

1 In 1000 Year Flood Event Flood Velocity (with 2115 Climate Change Horizon Year and 95% Confidence Interval with Flood Defence)

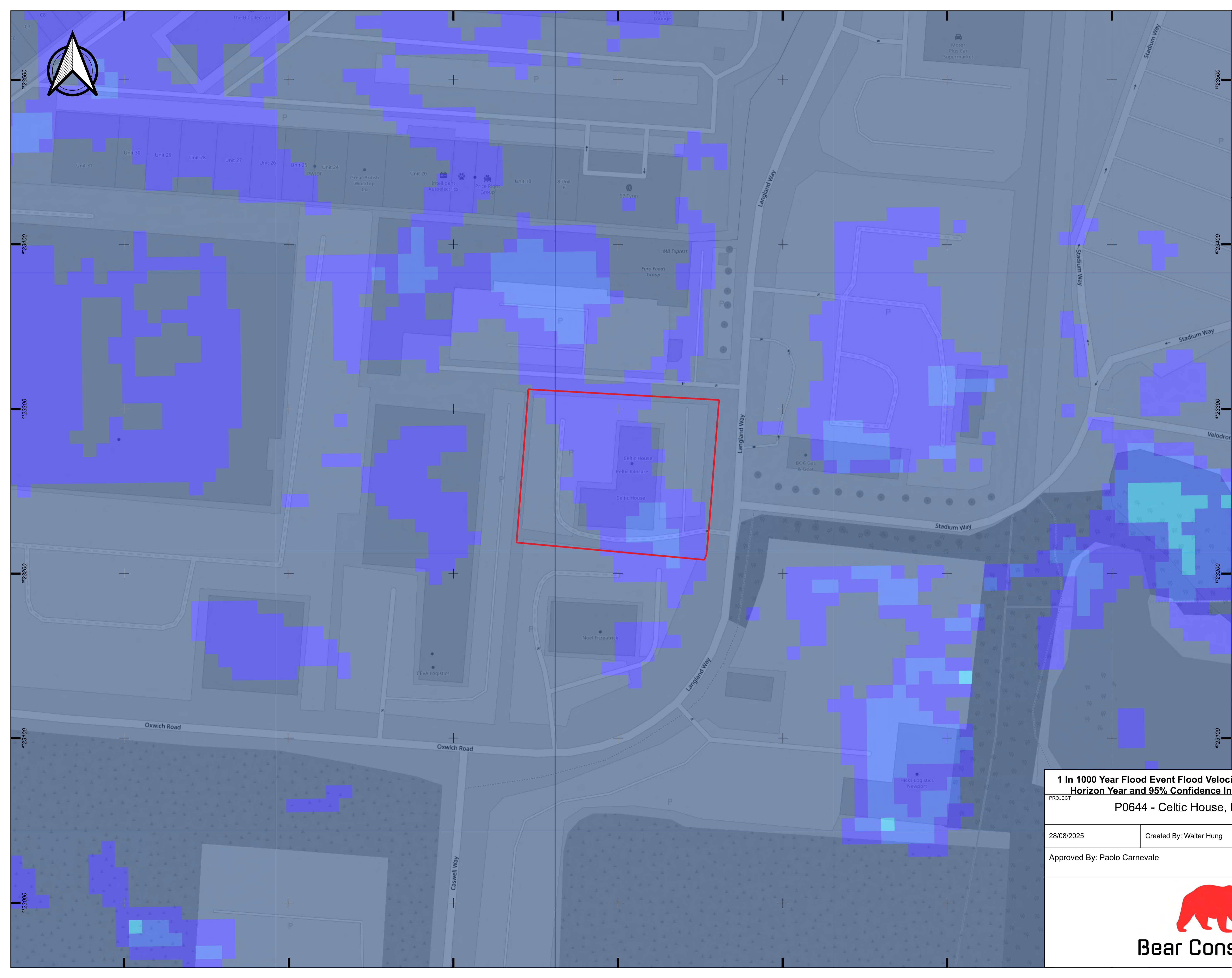
PROJECT
P0644 - Celtic House, Langland Way

28/08/2025 Created By: Walter Hung Scale 1:1,000

Approved By: Paolo Carnevale

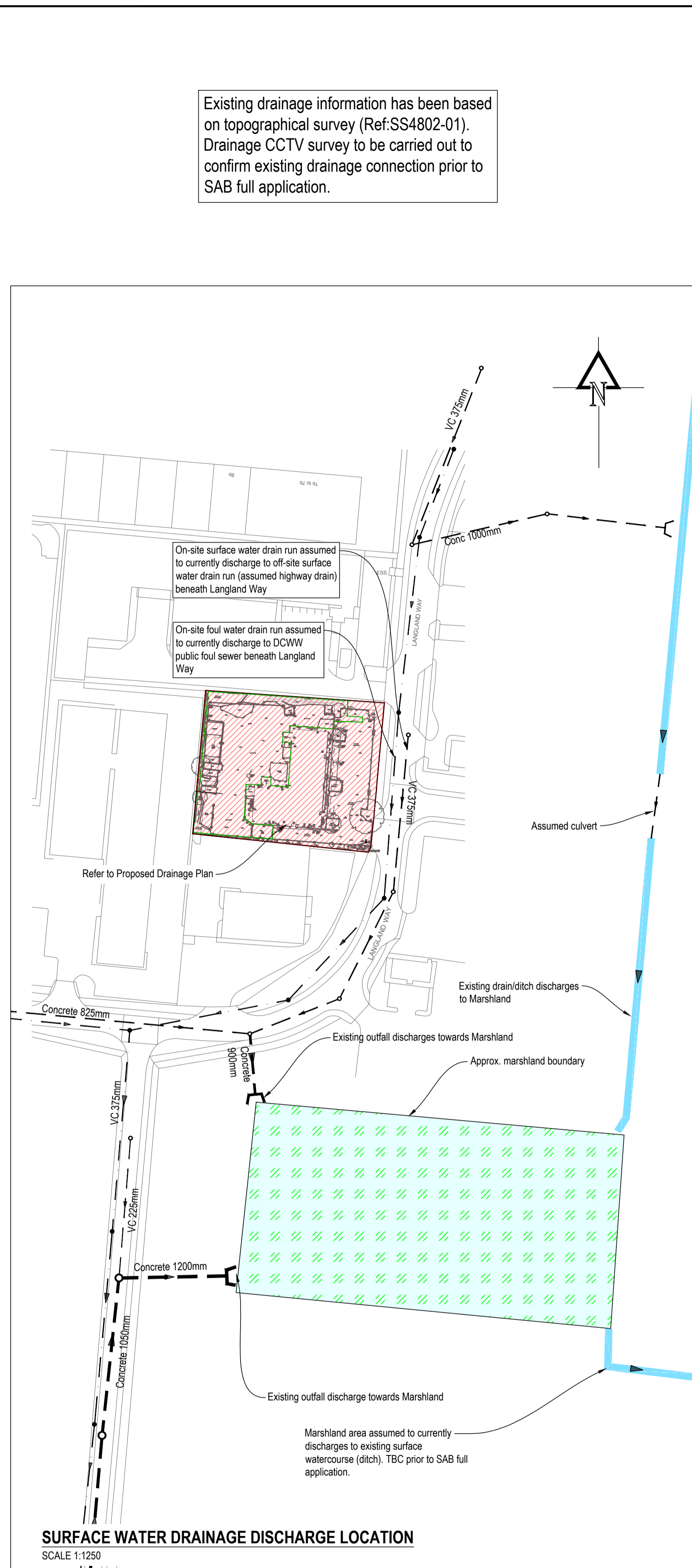
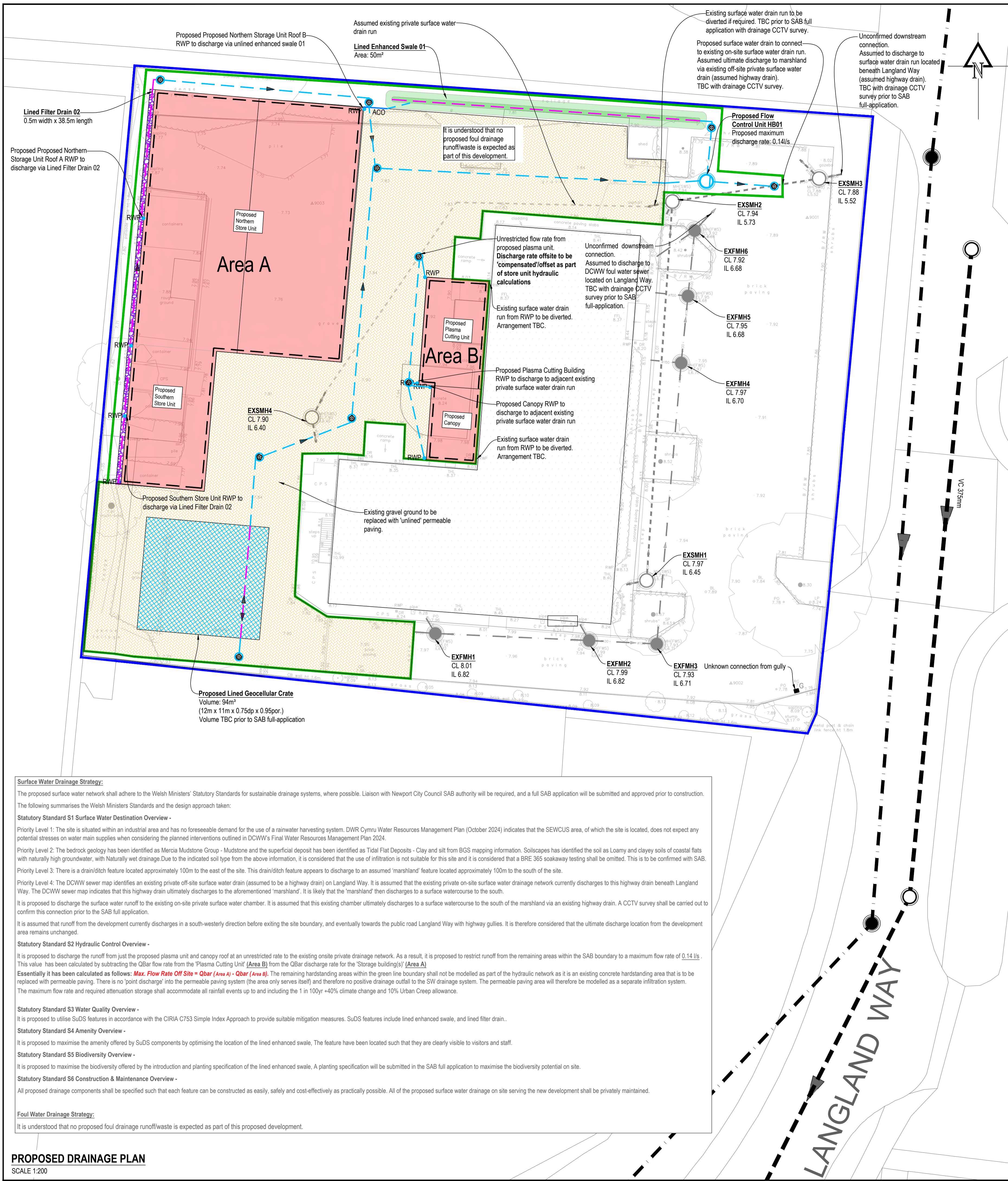


Bear Consulting





Appendix H



Existing drainage information has been based on topographical survey (Ref:SS4802-01). Drainage CCTV survey to be carried out to confirm existing drainage connection prior to SAB full application.

KEY

- SAB Boundary
- Applicant Ownership Boundary
- Existing On-Site Private Foul Water Chamber
- Existing On-Site Private Surface Water Chamber
- Existing DCWW Public Foul Water Chamber
- Existing Off-Site Private Surface Water Chamber (Assumed Highway Drain Chamber)
- Existing On-Site Private Foul Water Drain
- Existing On-Site Private Surface Water Drain
- Existing DCWW Public Foul Water Sewer
- Existing Off-Site Private Surface Water Drain (Assumed Highway Drain)
- Existing Surface Water Outfall
- Existing Watercourse (Assumed Ditch)
- Existing Watercourse (Assumed Marshland)
- Proposed Lined Filter Drain
- Proposed Private Surface Water Drain
- Proposed Private Perforated Drain
- Proposed ACO Drainage Channel
- Proposed PPIC Type 3 Private Surface Water Chamber
- Proposed Private Hydrobrake/Flow Control Unit
- Proposed RWP
- Proposed Rodding Eye
- Proposed ACO SuDS Swale Inlet (Or Similar Approved Erosion Control)
- Proposed Lined Enhanced Swale
- Proposed Lined Geocellular Crate System
- Proposed SuDS Planter
- Proposed Structure (Refer to Architect's Plan)
- Proposed Unlined Permeable Paving

- Notes:**
- This drawing is to be read in conjunction with all other geotechnical engineer, surveys and Bear Consulting project drawings/specifications.
 - This drawing has been produced for information only and is not to be used for construction.
 - Exact location of all apparatus to be determined on site.
 - Topographical Survey was carried out by AZIMUTH LAND SURVEYS LIMITED (Date: May 2025, Ref: SS4802-01).
 - Existing drainage information was obtained from topographical survey, DataMapWates, and DCWW sewer map. Information shown partially for indicative purposes with assumptions.
 - Existing drainage information TBC with drainage CCTV survey prior to SAB full application.
 - Proposed drainage layout shown indicatively. Final layout TBC in SAB full application.
 - Proposed RWP locations shown indicatively. TBC with Architect prior to SAB full application.

Rev.	Date	Details	By	Chk.
B	18/08/25	Updated following client meeting	WH	PC
A	13/08/25	Updated to suit client's comments	WH	PC

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Project:
CELTIC HOUSE, LANGLAND WAY NEWPORT

Title:
PROPOSED DRAINAGE STRATEGY FOR PLANNING

Drawing Status:
FOR INFORMATION

Drawn:	Checked:	Scale(s) at A1:
WH	PC	AS SHOWN
Date:	Job No:	Drawing No.
30/06/2025	P0644	SKW51
		Revision
		B

Surface Water Drainage Strategy:
The proposed surface water network shall adhere to the Welsh Ministers' Statutory Standards for sustainable drainage systems, where possible. Liaison with Newport City Council SAB authority will be required, and a full SAB application will be submitted and approved prior to construction. The following summarises the Welsh Ministers Standards and the design approach taken:

Statutory Standard S1 Surface Water Destination Overview -
Priority Level 1: The site is situated within an industrial area and has no foreseeable demand for the use of a rainwater harvesting system. DWR Cymru Water Resources Management Plan (October 2024) indicates that the SEWCUS area, of which the site is located, does not expect any potential stresses on water main supplies when considering the planned interventions outlined in DCWW's Final Water Resources Management Plan 2024.
Priority Level 2: The bedrock geology has been identified as Mercia Mudstone Group - Mudstone and the superficial deposit has been identified as Tidal Flat Deposits - Clay and silt from BGS mapping information. Soilscape has identified the soil as Loamy and clayey soils of coastal flats with naturally high groundwater, with naturally wet drainage. Due to the indicated soil type from the above information, it is considered that the use of infiltration is not suitable for this site and it is considered that a BRE 365 soakaway testing shall be omitted. This is to be confirmed with SAB.
Priority Level 3: There is a drain/ditch feature located approximately 100m to the east of the site. This drain/ditch feature appears to discharge to an assumed 'marshland' feature located approximately 100m to the south of the site.
Priority Level 4: The DCWW sewer map identifies an existing private off-site surface water drain (assumed to be a highway drain) on Langland Way. It is assumed that the existing private on-site surface water drainage network currently discharges to this highway drain beneath Langland Way. The DCWW sewer map indicates that this highway drain ultimately discharges to the aforementioned 'marshland'. It is likely that the 'marshland' then discharges to a surface watercourse to the south.
It is proposed to discharge the surface water runoff to the existing on-site private surface water chamber. It is assumed that this existing chamber ultimately discharges to a surface watercourse to the south of the marshland via an existing highway drain. A CCTV survey shall be carried out to confirm this connection prior to the SAB full application.
It is assumed that runoff from the development currently discharges in a south-westerly direction before exiting the site boundary, and eventually towards the public road Langland Way with highway gullies. It is therefore considered that the ultimate discharge location from the development area remains unchanged.

Statutory Standard S2 Hydraulic Control Overview -
It is proposed to discharge the runoff from just the proposed plasma unit and canopy roof at an unrestricted rate to the existing onsite private drainage network. As a result, it is proposed to restrict runoff from the remaining areas within the SAB boundary to a maximum flow rate of 0.14 l/s. This value has been calculated by subtracting the QBar flow rate from the 'Plasma Cutting Unit' (Area B) from the QBar discharge rate for the 'Storage building(s)' (Area A).
Essentially it has been calculated as follows: Max. Flow Rate Off Site = QBar (Area A) - QBar (Area B). The remaining hardstanding areas within the green line boundary shall not be modelled as part of the hydraulic network as it is an existing concrete hardstanding area that is to be replaced with permeable paving. There is no 'point discharge' into the permeable paving system (the area only serves itself) and therefore no positive drainage outfall to the SW drainage system. The permeable paving area will therefore be modelled as a separate infiltration system. The maximum flow rate and required attenuation storage shall accommodate all rainfall events up to and including the 1 in 100yr +40% climate change and 10% Urban Creep allowance.

Statutory Standard S3 Water Quality Overview -
It is proposed to utilise SuDS features in accordance with the CIRIA C753 Simple Index Approach to provide suitable mitigation measures. SuDS features include lined enhanced swale, and lined filter drain.

Statutory Standard S4 Amenity Overview -
It is proposed to maximise the amenity offered by SuDS components by optimising the location of the lined enhanced swale. The feature have been located such that they are clearly visible to visitors and staff.

Statutory Standard S5 Biodiversity Overview -
It is proposed to maximise the biodiversity offered by the introduction and planting specification of the lined enhanced swale. A planting specification will be submitted in the SAB full application to maximise the biodiversity potential on site.

Statutory Standard S6 Construction & Maintenance Overview -
All proposed drainage components shall be specified such that each feature can be constructed as easily, safely and cost-effectively as practically possible. All of the proposed surface water drainage on site serving the new development shall be privately maintained.

Foul Water Drainage Strategy:
It is understood that no proposed foul drainage runoff/waste is expected as part of this proposed development.