



High Street, Bangor-on-Dee

Flood Consequences Assessment

February 2019

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Introduction

Waterco has been instructed to prepare a Flood Consequences Assessment (FCA) in respect of a proposed change of use development at Buck House Hotel, High Street, Bangor on Dee LL13 0BU.

The purpose of this report is to outline the potential flood risk to the site, the impact of the proposed development on flood risk elsewhere, and the proposed measures which could be incorporated to mitigate the identified flood risk. The report has been prepared in accordance with the guidance contained in Planning Policy Wales (PPW) and Technical Advice Note 15 (TAN15): Development and Flood Risk.

This report has been prepared in consultation with Natural Resources Wales (NRW).

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Existing Conditions

The site covers an area of approximately 170m² and is located at National Grid Reference: 338862, 345537. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery accessed January 2019) shows that the site comprises a garage associated with the Buck House public house, parking and soft landscaping. The site is bordered by an access road, residential properties and greenfield land to the north and east, Buck House public house (within the same ownership), residential properties and High Street (road) to the south and greenfield land to the west. Access to the site is provided from High Street.

Local Topography

Topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution NRW composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). A review of LiDAR data shows that the site and surrounding area is generally flat and the site slopes from approximately 15.518m AOD in the north to approximately 15.357m AOD in the south-east. The River Dee to the east is situated at approximately 13m AOD. The flood defences to the west are shown to be situated at a minimum of 16m AOD. A LiDAR extract is included in Appendix B.

Ground Conditions

Reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the site is underlain by superficial deposits of alluvium generally comprising clay, silt, sand and gravel. The superficial deposits are identified as being underlain by Kinnerton Sandstone Formation.

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

basis.

According to NRW's Aquifer Designation data, obtained from MAGIC Map's online mapping [accessed January 2019], the alluvium is classified as a 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';

The underlying Kinnerton Sandstone is described as a Principal Aquifer. Principal Aquifers are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

The Cranfield University 'Soilscapes' map [accessed January 2019] indicates that the site is underlain by '*freely draining... loamy soils*'.

Local Drainage

Public sewer records have been obtained from Dŵr Cymru Welsh Water (DCWW) and are included in Appendix C. The sewer records show that there is a 150mm public foul sewer located within High Street to the south of the site. The sewer flows east in this location. There is also a 100mm private sewer located approximately 20m east of the site however, its wider connectivity to the network is unknown.

Development Proposals

The proposed development is for the change of use and extension (additional 11m²) of the existing garage to form two one-bedroom holiday units. Proposed development plans are included in Appendix D.

Flood Zone Category and Policy Context

Flood Zone Category

The Welsh Government Development Advice Map included in Appendix E shows that the site is located within Flood Zone C1 – an area considered to be at flood risk, but served by significant infrastructure, including flood defences, with a 0.1% (1 in 1000) or greater annual probability of flooding.

The NRW 'Flood Map for Planning' (Appendix E), shows that the site is located within the defended Flood Zone 3 – an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding but that benefits from defences.

Development Vulnerability Classification

The proposed change of use is considered to be 'highly vulnerable' development in accordance with Figure 2 of the Welsh Government's Technical Advice Note 15 – Development and Flood Risk (TAN15).

TAN15 states that highly vulnerable development can be considered in Flood Zone C1 subject to the

application of the TAN15 Justification Test and satisfying specific TAN15 acceptability criteria. The specific TAN15 'acceptability criteria' are assessed within this report.

Local Policy

The Wrexham County Borough Council Unitary Development Plan 1996-2011 (adopted February 2005) contains the following policies relating to flood risk:

Policy EC12 Development (including the raising of land) within defined flood plains will only be permitted if it: -

- a) would not be subject to an unacceptable risk of flooding on-site; and/or*
- b) does not result in an unacceptable risk of flooding on or off-site; and/or*
- c) does not adversely affect flood management or maintenance schemes*

Wrexham County Borough Council is preparing the Local Development Plan (LDP) which will replace the current adopted Unitary Development Plan. The LDP will be a long-term land use and development strategy focused on achieving sustainable development. The Deposit Local Development Plan (draft LDP) contains the following policy in relation to flood risk:

Policy SP19: Climate Change

To mitigate against the effects of climate change and adapt to its impacts, development proposals will need to demonstrate that they have taken into account the following:

- i. Reducing carbon emissions;*
- ii. Protecting and increasing carbon sinks*
- iii. Adapting to the implications of climate change at both a strategic and detailed design level;*
- iv. Promoting energy efficiency and increasing the supply of renewable energy; and*
- v. Maintaining ecological resilience*
- vi. Avoiding areas susceptible to flood risk in the first instance in accordance with the sequential approach set out in national guidance; and*
- vii. Preventing development that increases flood risk.*

Local guidance documents including the Wrexham County Borough Council Preliminary Flood Risk Assessment (PFRA) (2011) and its November 2017 addendum have been reviewed for site specific information.

Consultation

Correspondence from NRW, dated December 2018, was provided by the client and is included in Appendix E. NRW state; *'The application site lies entirely within Zone C1 as defined by the Development Advice Map referred to under TAN 15 Development and Flood Risk (July 2004), and is shown to be located within the 1% (1 in 100) annual exceedance probability (AEP) event flood outline on the NRW Flood Risk Map. The site is located approximately 90m east of the River Dee. The site lies within the historic flood map outline for the River Dee flood event in 1964.*

We note that the proposals are for the extension and change in use of an existing garage (which is used for storage purposes) to form two 1 bedroom holiday accommodation units. The proposals would therefore result in two new 'highly vulnerable' units being located in Zone C1.

Given the nature of the proposals and the C1 designation a Flood Consequences Assessment (FCA) needs to be prepared in support of this application. In the absence of a FCA, we therefore raise significant concerns with this application.

The FCA for the proposed development will need to demonstrate compliance with the requirements of section 6, 7 and Appendix 1 of TAN15. The FCA will also need to take the following into consideration:

- Technical guidance documents OGN100, GN008 and GN028 modelling for flood consequences assessments...*
- Welsh Government guidance 2016 CL-03-16 for climate change allowances and the lifetime of the development...*

The FCA would need to assess the impacts from all sources of flood risk. Fluvial flood risk from the River Dee will need to be assessed and given that the site benefits from the presence of a raised earth embankment defence located to the north / [west] of the site, we would expect the impact of a breach in the River Dee defences to be assessed, to quantify the impact of defence failure at the site. We would also expect an assessment of a potential blockage to the Old Dee bridge to be assessed within the FCA including the impact a blockage could have on increasing the probability of a breach event.

The design events that should be considered are the 1% AEP breach/blockage event with an allowance for climate change for assessing compliance with A1.14 of TAN15 and the 0.1% (1 in 1,000) AEP breach/blockage event for assessing compliance with A1.15 of TAN15. The FCA would need to demonstrate that the proposals would not result in any increased flood risk elsewhere, in accordance with the requirements of A1.12 of TAN15.

There is an existing model available for the River Dee adjacent to Bangor-on-Dee, which may be used as a starting point for further assessment... The FCA should consider any limitations of the existing 2012 Bangor-on-Dee model and should assess whether any updates are required in order to refine the model (e.g. updates to hydrology or floodplain topography).

Based on the above, we raise significant concerns and request that a FCA is submitted which demonstrates compliance with the requirements of A1.14, A1.15 and A1.12 of TAN15.

If, contrary to the requirements of TAN15, your Authority is minded to grant permission contrary to our advice, we should be informed of all matters that influence this decision, prior to granting permission, allowing sufficient time for further representations to be made...’.

A pre-planning application was submitted to NRW in January 2019 and their response, received in February 2019, is included in Appendix E. The response is similar to the above response, with the following variation;

..The FCA would need to assess the impacts from all sources of flood risk over the lifetime of development. Fluvial flood risk from the River Dee will need to be assessed for the 1% AEP event with an allowance for climate change (for assessing compliance with A1.14 of TAN15) and the 0.1% AEP event (for assessing compliance with A1.15 of TAN15). The site benefits from the presence of a raised earth embankment defence located to the north / east of the site, and we would therefore expect the impact of a breach in the River Dee defences to be assessed, to quantify the impact of defence failure at the site...

A further email was received from NRW in February 2019 response to an email for clarification on the above correspondence and is included in Appendix E. The response states; *In respect to the blockage allowances, we would refer you to our OGN100 document, which outlines the guidance in respect to bridge blockage allowances.*

In respect to the potential impact a blockage could have on the likelihood of a breach, we would expect you to comment on how a blockage could increase the risk of a breach upstream of the old bridge, as this would help justify the breach location chosen. This is referred to in the modelling report provided as part of the data request that was submitted for this site. We would not expect you to undertake a detailed combined assessment of a modelled blockage and breach’.

Sources of Flooding and Probability

Fluvial

The nearest watercourse is the River Dee which is located approximately 90m west of the site at its nearest point. The River Dee flows north in this location. There are no other watercourses within the immediate vicinity of the site.

Online NRW datasets indicates that the development site is located in an area which benefits from flood defences in the form of raised embankments. To the west of the site, the defences are identified to have an actual upstream crest level of 16.63m AOD and an actual downstream defence crest level is 15.8m AOD. They design standard of protection is 100 years but the condition is poor. Other defences in the immediate vicinity of the site include a stone bridge and a clay embankment. All have a design life of 100 years and crest levels greater than the embankment.

Fluvial flooding could occur if the River Dee overtopped its defences during or following an extreme rainfall event. Flooding could also occur from a blockage at the road bridge approximately 110m south-west of the site or from a breach in the defences.

The NRW 'Historical Flood Map' (Appendix E) indicates that the site has previously flooded. Correspondence from NRW states that this is as a result of the overtopping of defences in 1964.

NRW Estimated Flood Levels

Estimated flood levels for the River Dee have been obtained from NRW in February 2019 and are included in Appendix E. The flood levels are taken from the NRW Bangor on Dee 2012 model.

Defended Events

No flooding is estimated onsite during all events up to and including the 0.1% AEP nor when accounting for climate change up to and including the 1% AEP plus 20% Climate Change (CC) event. Therefore, the flood risk to the site during defended events is considered to be very low.

Blockage Events

The Product 5 report states; *The model has been used to assess the impact of the blockage of 1 and 2 arches of Old Dee Bridge during the 1%, 1% plus climate change and 0.1% AEP events.*

To represent blockage, the opening area of the ARCH bridge unit representing Old Dee Bridge has been reduced appropriately to reflect the low, medium and high blockage scenarios considered. Blockage proportions of 5%, 20% and 80% have been adopted for the assessment in line with the CIRIA Culvert Design & Operation Guide 2010 (CDOG).

The design event simulations undertaken show that there are only relatively small changes in predicted peak water levels within the River Dee... The limited change is largely as a result of the size of the structure and the bypass route via the floodplain on the left hand bank that limit any rise in water level. Similarly, there is no visible impact on the predicted flood extents, as the flooding is constrained topographically although local

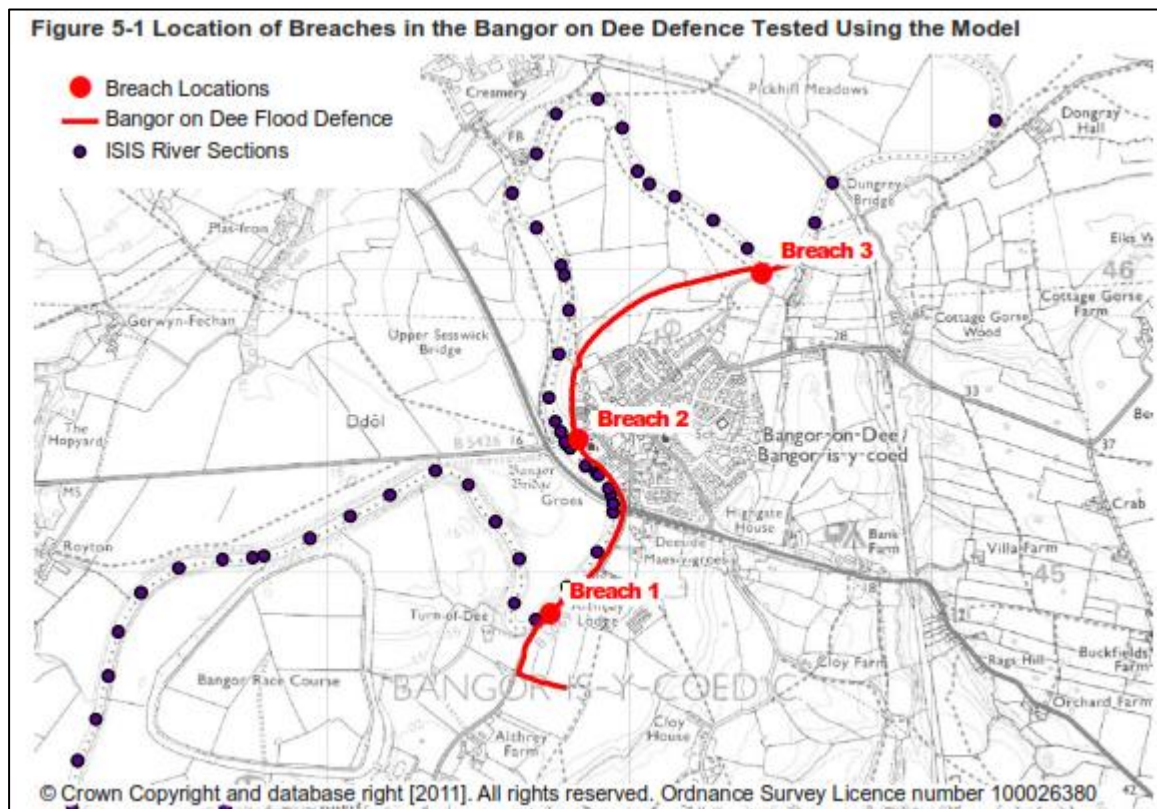
water levels on the floodplain are increased by up to 110mm for the high blockage scenario (80%) during the 1% and 15 plus climate change events...

This assessment has shown the model (and resultant flood risk) to be relatively insensitive to reasonable degrees of blockage at Old Dee Bridge. As stated above this is largely a result of the overall size of the structure (that means that it is very unlikely to become fully blocked) and the flow route around the bridge on the left hand bank. With the exception of the increase in the loading on the embankment, there is no direct increase in the flood risk to Bangor on Dee as a result of blockage at this structure.

Based on the above correspondence, it is assumed that all blockage locations identified on flood mapping are located at the Old Dee Bridge to the west of the site. No flooding is estimated onsite during all blockage events up to and including the 1% AEP plus 15% CC event. Given the above information provided by NRW, it is considered appropriate to consider an 80% blockage of the Old Dee Bridge, further analysis of higher percentage blockages is considered onerous given the size of the structure involved and the nature and scale of the proposed development. Therefore, the flood risk to the site during blockage events is considered to be very low.

Breach Events

Three breach locations were considered within the Product 5 report, as illustrated within the extracted Figure below; 1 - Turn of Dee (upstream of site), 2- Old Dee Bridge (adjacent to site) and 2 - The Graig (downstream of site).



No flooding is estimated onsite when considering a breach at location 1 or at location 3 coinciding with flood

events up to and including the 1% AEP event.

When considering a breach at location 2 coinciding with the 1% AEP event, the majority of the site is estimated to flood, with flood depths in the location of the proposed extension of approximately 0.23m. Flood depths at the site entrance during this event are approximately 0.37m.

Therefore, when considering a breach of flood defences coinciding with a large flood event, the site is considered to be at low risk of flooding, which, when onsite flooding is experienced, shallow depth flooding (depths of less than 300mm) are estimated in the location of the building.

Undefended Events

In the highly unlikely event that all flood defences are removed (both NRW and third party defences), flooding is estimated onsite during storm events greater than the 1% AEP plus CC storm.

No flooding is estimated onsite during the 1 in 20 year (5%) AEP event. When considering the 1% AEP plus CC event, shallow depth flooding is estimated in the location of the proposed extension with depths of approximately 0.04m. At the site entrance, depths are estimated to increase to approximately 0.1m.

During the 0.1% AEP event, flood depths in the location of the proposed extension are estimated to be approximately 0.4m, increasing to approximately 0.49m in the location of the proposed extension.

Therefore, the site is considered to be at risk of flooding during the residual, undefended event, with depths of less than 600mm.

Climate Change

The climate change allowance provided in the defended scenario above is based on 20% CC event. The Welsh Government 'Flood Consequence Assessments: Climate Change Allowances' guidance states that '*It is recommended that the central estimate, or change factor, for the 2080s for the relevant river basin district should be used to assess the potential impact of climate change as part of a flood consequence assessment... It is recommended that in addition to the change factor, an assessment of risk is made using the upper end estimate. The information derived from this assessment should be used to inform mitigation measures that help to ensure the long term resilience of the development. (Note: The upper end estimate may not be applicable to every site but will need to be considered depending upon the scale and nature of the site in question).*' Within the Dee District, the central and upper end estimates equate to 20% and 45% anticipated by the 2080s.

Therefore, it is considered that an appropriate assessment has been made using the 20% allowance for climate change. Given the limited extension and change of use proposed, an assessment of the 45% climate change, on top of the breach, blockage and undefended assessments is not considered to be appropriate.

The site is therefore considered to be at very low risk of fluvial flooding during the defended and blockage events, with a residual potential risk of flooding during breach events and a risk during the highly unlikely, extreme undefended events.

Tidal

The site is located approximately 27km from the River Dee Estuary and is situated at a minimum of 15m AOD, significantly above sea level. The site is therefore not at risk of tidal flooding.

Surface Water

Surface water flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The NRW 'Risk of Flooding from Surface Water' map (Appendix E) shows that the site is at very low risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding.

Figure 3 within the PFRA shows that there are no records of surface water flooding within the immediate vicinity of the site. There are no distinct flow routes in the area which would direct any potential surface water flooding towards the site.

It can be concluded that the risk of surface water flooding is low.

Sewer

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity. Flooding is mostly applicable to combined and surface water sewers.

The DCWW sewer records show that there is a 150mm public foul sewer located within High Street to the south of the site and a 100mm private sewer transfer located approximately 20m east of the site.

The PFRA states *'there were no records of properties affected by sewer flooding with significant consequences... with the [Wrexham County Borough Council] area'*. There are no distinct flow routes in the area which would direct any potential flooding towards the site.

It can be concluded that the risk of sewer flooding is low.

Groundwater

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

The PFRA states that *'There were no records of past groundwater flooding within WCBC; this is due to the topography and geology of the area'*. There are no records of groundwater flooding at or near to the site.

The majority of the site is and will remain predominantly hardstanding, limiting the vertical migration of groundwater. Furthermore, no basement levels are identified on plans.

It can therefore be concluded that the risk of groundwater flooding is low.

Artificial Sources

There are no canals in the immediate vicinity of the site. The NRW 'Risk of Flooding from Reservoirs' map (Appendix E) shows that the site is at risk from the following reservoirs;

- Alwen Reservoir
- Llyn Brenig
- Llyn Celyn

NRW state that reservoir flooding is extremely unlikely to happen. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement agency for the Reservoirs Act 1975 in Wales, NRW ensure that reservoirs are inspected regularly, and essential safety work is carried out. The probability of flooding from reservoirs is very low.

Therefore, it can be concluded that there is very low risk of flooding from artificial sources.

Summary of Potential Flooding

It can be concluded that fluvial flooding during breach or undefended events is the main potential source of flood risk at this site. The associated risk has been used to inform mitigation design as discussed further in this report.

Mitigation

The risk of fluvial flooding to the site during defended or blockage events up to the 1% AEP plus CC is considered to be very low. It is therefore proposed to set ground floor levels at no less than the existing finished floor level. Therefore, the building is compliant with section A1.14 of TAN15.

When accounting for breach or undefended events, the site is identified at risk of fluvial flooding from the River Dee with a maximum flood depth of 0.4m in the location of the proposed extension, equating to a water level of 16.25m AOD during the undefended 0.1% AEP plus CC. Therefore, flood depths are within the tolerable limits permitted by A1.15 of TAN15.

In order to minimise the impact of flooding during extreme flood events, the following flood resilience and resistance measures should be applied where practical:

- Raise electronic control units and sockets to a height of 16.4m AOD.
- Use solid flooring (tiled, resin, concrete) at ground floor level
- Install smart air bricks or air brick covers

- Use non-hygroscopic renders, where applicable
- Install flood guards to all doors
- Seal cable entry points
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives.

The mitigation measures will ensure that the development is compliant with Sections A1.14 and A1.15 of TAN15.

Flood Warnings and Evacuation

Flood Warnings cover this area. Site owners and / or management should register to receive flood warnings. Flood Warnings is a free service that provides prior warning of a fluvial flood event.

The site owners and / or management should prepare a flood plan to inform site users of the flood risk and to provide advice on what to do in the event of a flood. The flood plan should include details of a safe evacuation route to be used upon receipt of a flood warning. Safe evacuation should be provided to the south-east via Overton Road and Millbrook Lane, towards Bangor Road and Overton, an area shown outside of the extreme fluvial flood extent on NRW mapping. A site evacuation plan is included in Appendix F. Residents should not evacuate the building into flood water unless instructed to do so otherwise by the emergency services.

Impact on Flood Risk Elsewhere

The proposed development is for the change of use of an existing building, with a minimal building footprint extension of 11m². No flooding is estimated onsite during design flood events. It is therefore considered that the extension will not remove flood storage space from the floodplain. When accounting for residual flood events, with depths of up to 0.4m, the resulting displacement of floodwater would be 4.4m³, which, when considering the extent of the floodplain, will have a negligible impact on flood risk elsewhere.

Justification

In accordance with TAN15, highly vulnerable development will be justified in Flood Zone C1 if it can be demonstrated that:

- i. Its location in Zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy to sustain an existing settlement: or,
- ii. Its location in Zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region

and,

- iii. It concurs with the aims of Planning Policy Wales (PPW) and meets the definition of previously development land (PPW fig 2.1); and,
- iv. The potential consequences of a flooding event for the particular type of development have been considered, and in terms of the criteria contained in sections 5 and 7 and appendix 1 [of TAN15] found to be acceptable.

The development will support an existing business, addressing point ii above. Furthermore, the proposal is for the change of use of an existing building and therefore satisfies point iii above. Overall, in relation to point iv above, the acceptability of the consequences of a flooding event have been considered in this FCA and it can be concluded that the development complements sections 5 and 7 and appendix 1 of TAN15.

Furthermore, Paragraph 6.1. of TAN15 states; *'Much urban development in Wales has taken place alongside rivers and in the coastal plain. It is therefore inevitable, despite the overall aim to avoid flood risk areas, that some existing development will be vulnerable to flooding and fall within zone C. Some flexibility is necessary to enable the risks of flooding to be addressed whilst recognising the negative economic and social consequences if policy were to preclude investment in existing urban areas, and the benefits of reusing previously developed land.'*

Conclusions

The proposed development is for the change of use and extension (additional 11m²) of the existing garage to form two one-bedroom holiday units.

The Welsh Government Development Advice Map shows that the site is located within Flood Zone C1 – an area considered to be at flood risk, but served by significant infrastructure, including flood defences, with a 0.1% (1 in 1000) or greater annual probability of flooding.

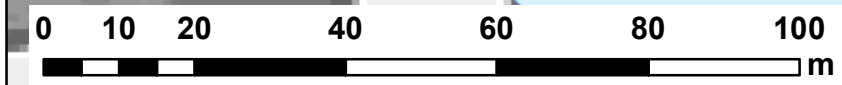
The risk of flooding from all sources including during defended and blockage fluvial scenarios has been assessed and the flood risk to the site is considered to be low. Therefore, the building is compliant with section A1.14 of TAN15. During the residual breach and undefended fluvial scenarios, flooding is estimated onsite with a flood depth of 0.4m in the location of the proposed extension during the undefended 0.1% annual probability event. Therefore, flood depths are within the tolerable limits permitted by A1.15 of TAN15.

Safe evacuation is available via Overton Road and Millbrook Lane, towards Bangor Road and Overton. The site is in an area which is served by flood warnings.

Recommendations

1. Submit this Flood Consequences Assessment to the Planning Authority in support of the Planning Application;
2. Set finished floor levels at no less than the existing floor levels;
3. Install the flood resistance / resilience measures detailed in this report.

Appendix A Location Plan and Aerial Image



CONTAINS OS DATA © CROWN COPYRIGHT (2019)

NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

- Site Boundary
- Watercourses / Water Bodies

CLIENT:

WREXHAM LAGER BEER COMPANY LTD

www.waterco.co.uk

SCHEME:

HIGH STREET, BANGOR ON DEE

PLOT TITLE:

LOCATION PLAN

PLOT STATUS:		DATE:	
FINAL		22/01/2019	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
CM	JR	VG	1:1,000
			(UNLESS STATED OTHERWISE)

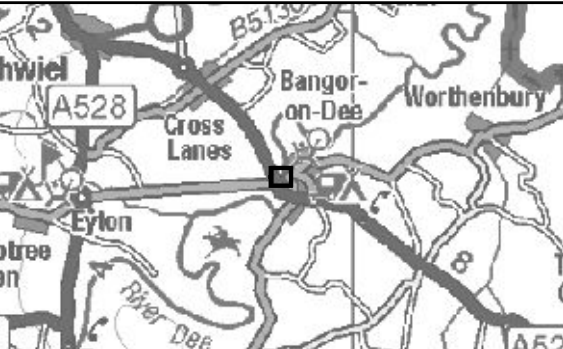
PLOT NAME:	REV:
w10866-Location_Plan	-



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary



CLIENT:
**WREXHAM LAGER BEER
COMPANY LTD**

Waterco
www.waterco.co.uk

SCHEME:
**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:
AERIAL PLAN

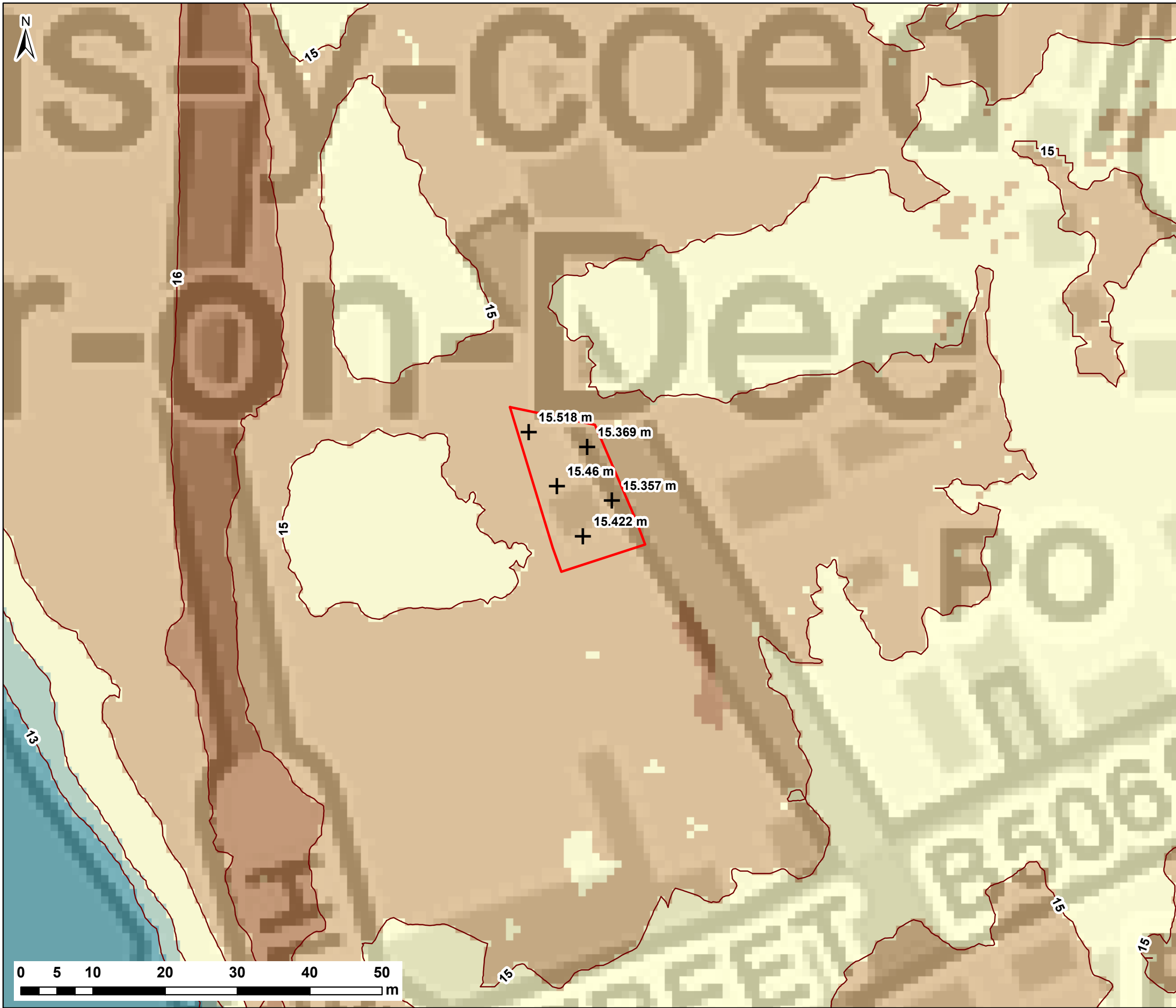
PLOT STATUS: FINAL			DATE: 22/01/2019
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DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:1,000 (UNLESS STATED OTHERWISE)
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PLOT NAME: w10866-Aerial_Plan			REV: -
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix B Topographical Data



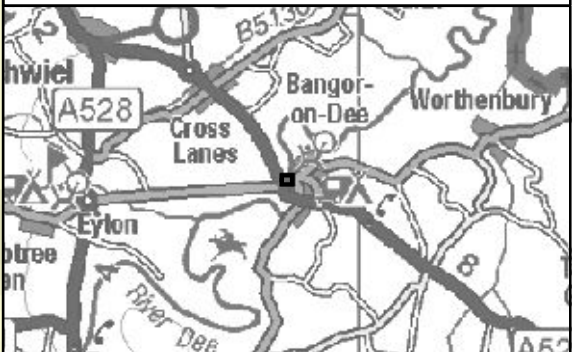
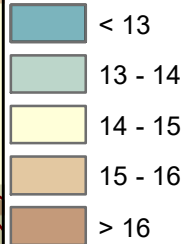
NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

+ Site Levels

Ground Elevations (m AOD)



CLIENT:

**WREXHAM LAGER BEER
COMPANY LTD**



www.waterco.co.uk

SCHEME:

**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:

LIDAR ELEVATIONS
1m RESOLUTION

PLOT STATUS:

FINAL

DATE:

22/01/2019

DRAWN:

CM

CHECKED:

JR

APPROVED:

VG

PLOT SCALE @ A3:

1:500

(UNLESS STATED OTHERWISE)

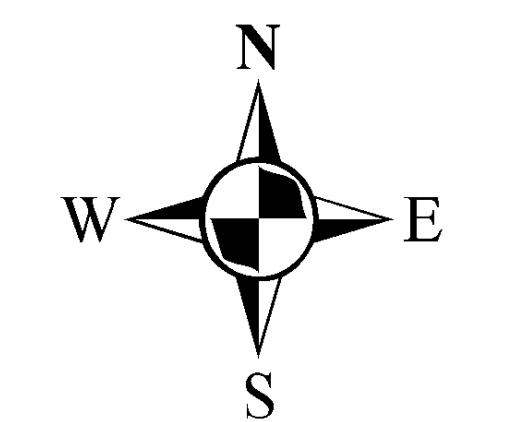
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w10866-LIDAR

REV:

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Appendix C Sewer Plan



LEGEND(Representative of most common features)

Waste network:	Foul chamber	Outfall
Surface water chamber	LH	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	
	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 (AC) 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 Cyllyngdy (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the basis of the best information available and to the best of its knowledge and belief. The Company is not responsible for any loss or damage caused by the use of this information. The Company is not responsible for any loss or damage caused by the use of this information. The Company is not responsible for any loss or damage caused by the use of this information.

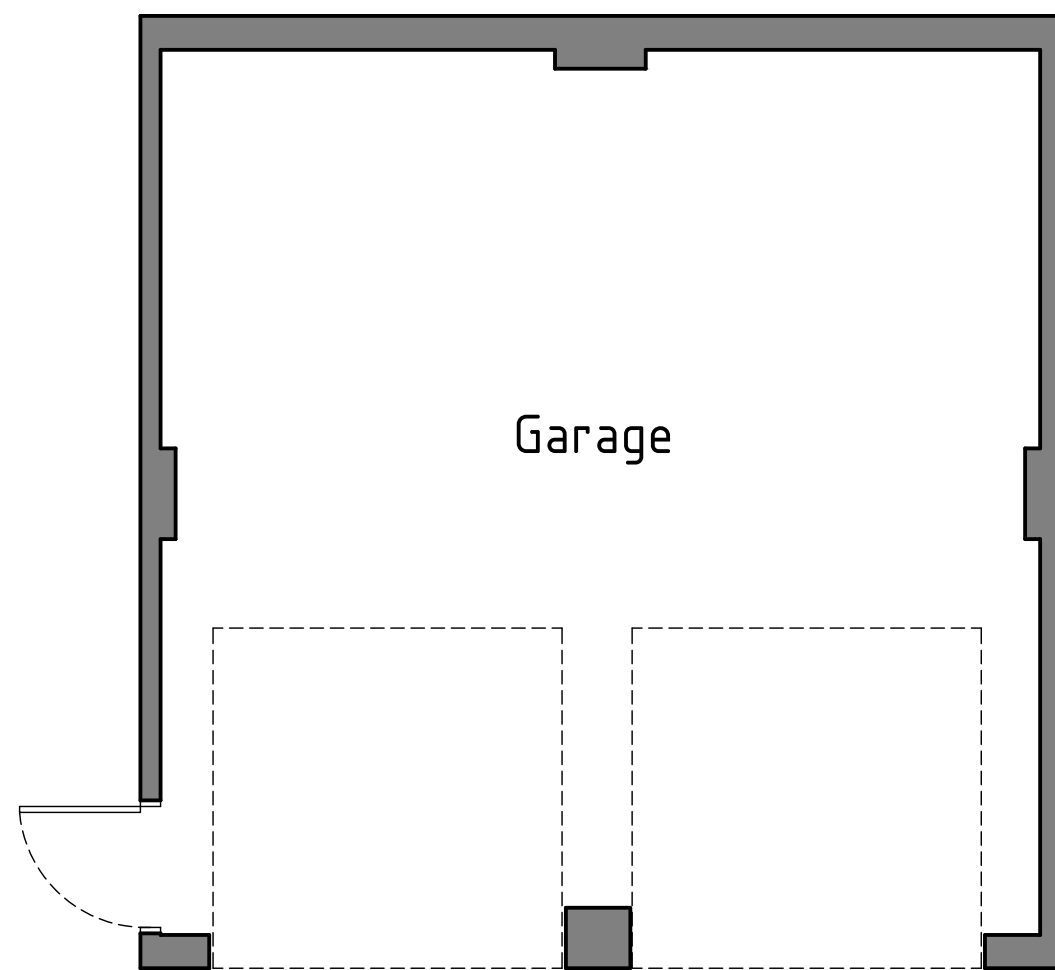
Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

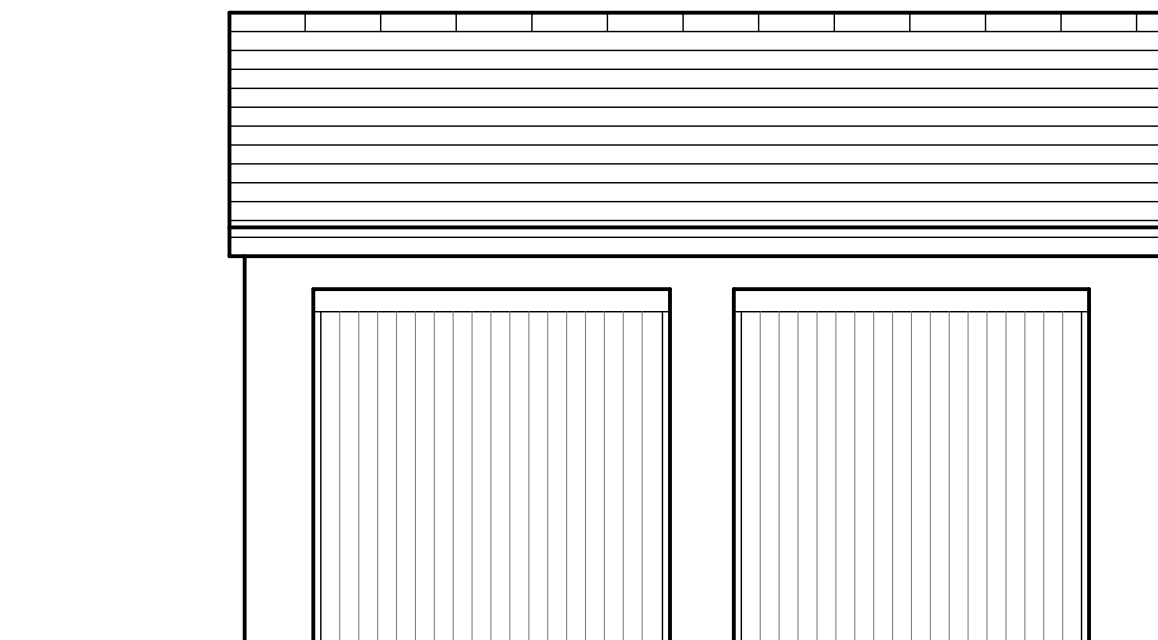
Reproduced by permission of the Ordnance Survey on behalf of HMSS. © Crown copyright and database right 2017.
All rights reserved.
Ordnance Survey Licence Number 100016004

Map Ref: 338863.345529
Map scale: 1:1250
Printed by: Powell Kelly-Ann
Printed on: 28 Jan 2019

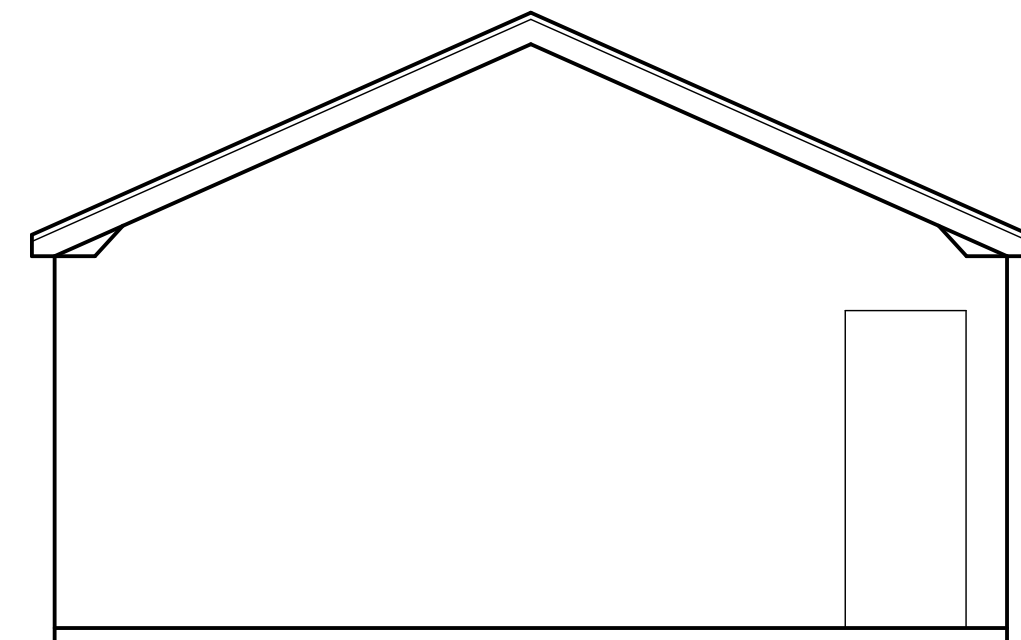
Appendix D Development Plan



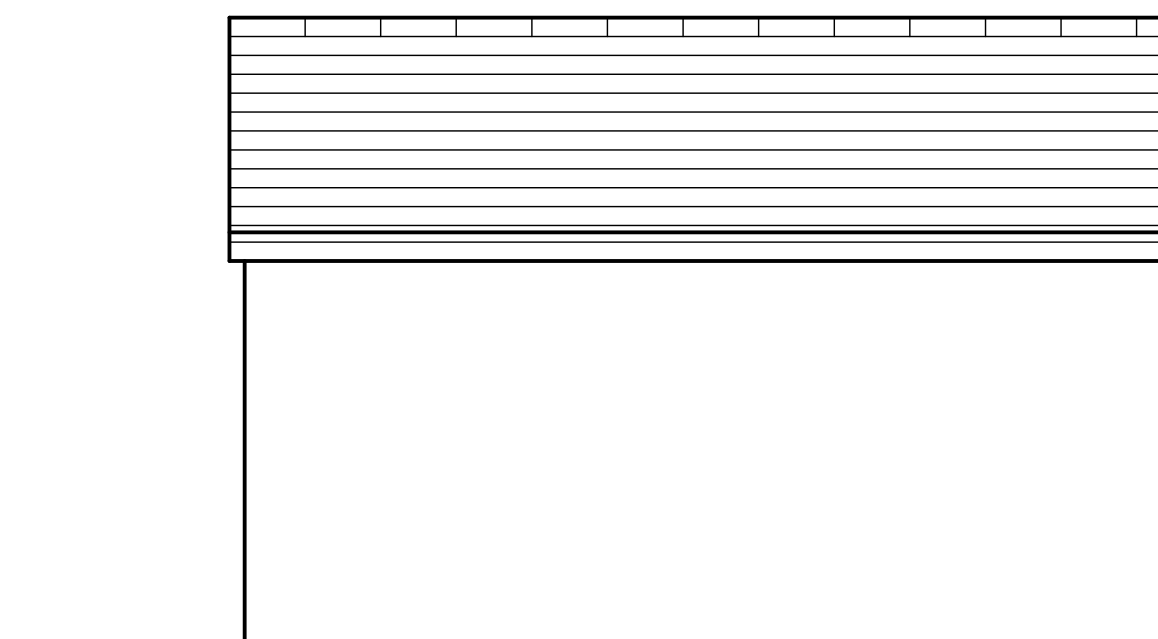
Ground Floor as Existing



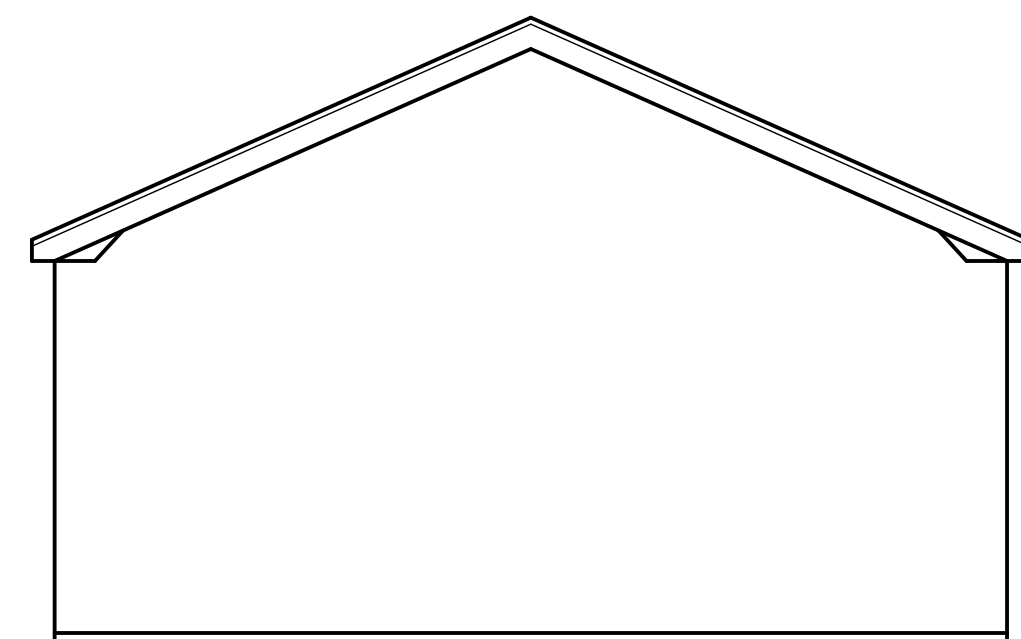
Front Elevation as Existing



Side Elevation as Existing



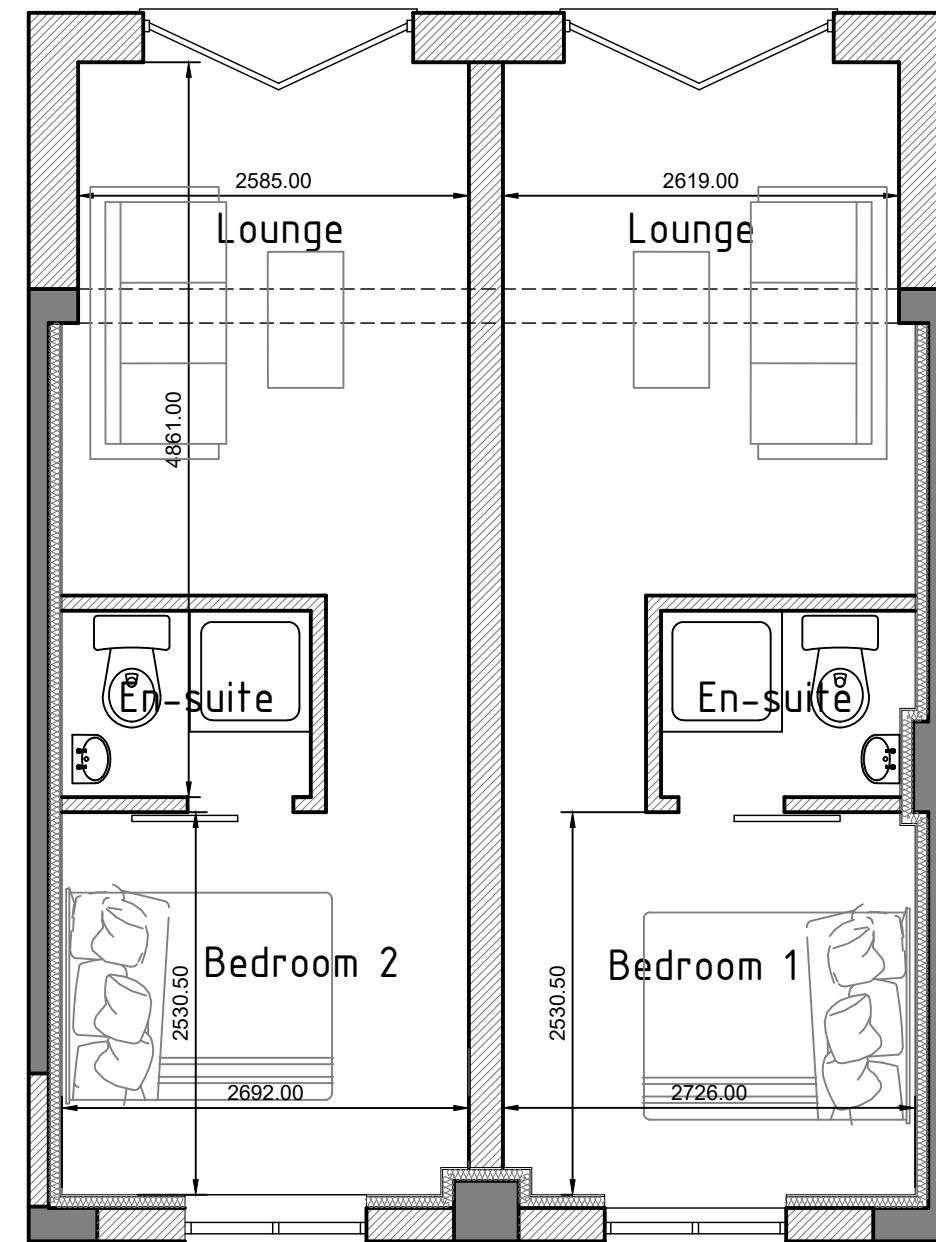
Rear Elevation as Existing



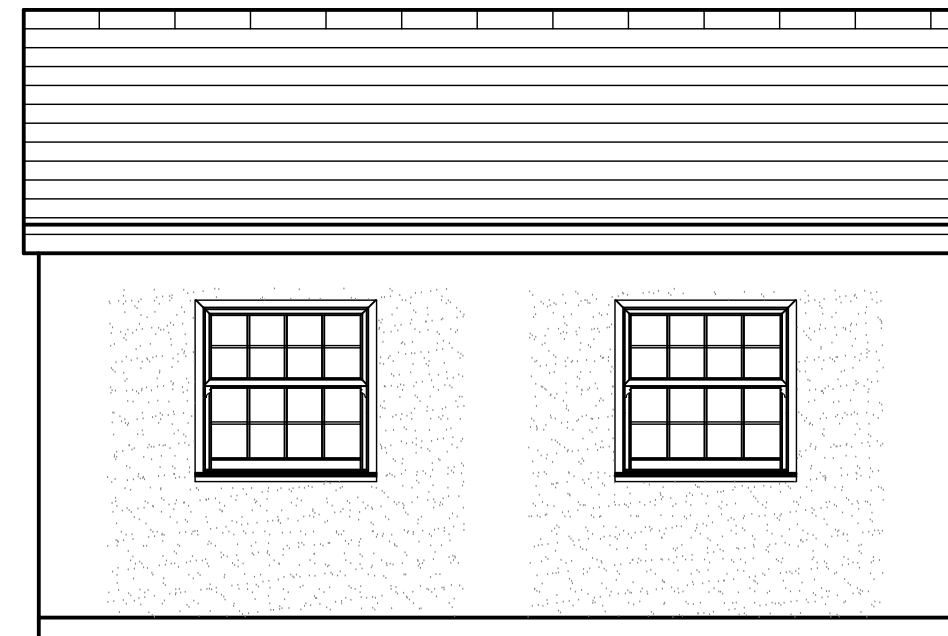
Side Elevation as Existing



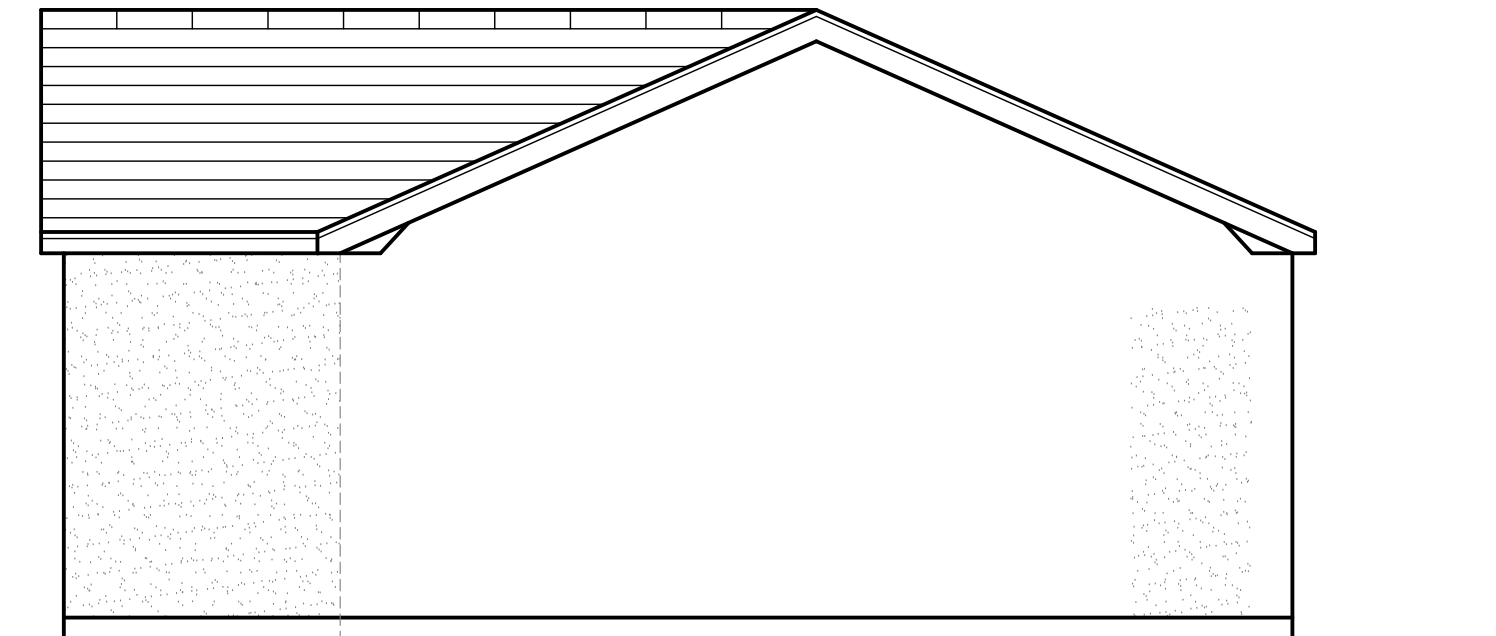
Project; Proposed Conversion of Existing Garage at "The Buck House Hotel", Bangor On Dee.	
Title; Floor Plan & Elevations as Existing	Scale (A2); 1:50
Dwg No; BH/PD/01	Date; August 2018
Revision;	



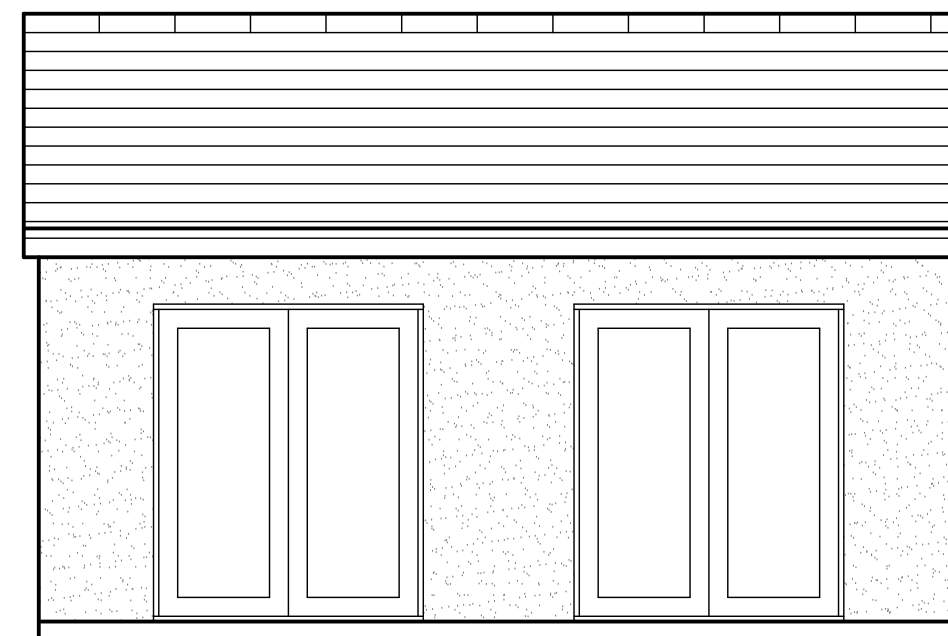
Ground Floor as Proposed



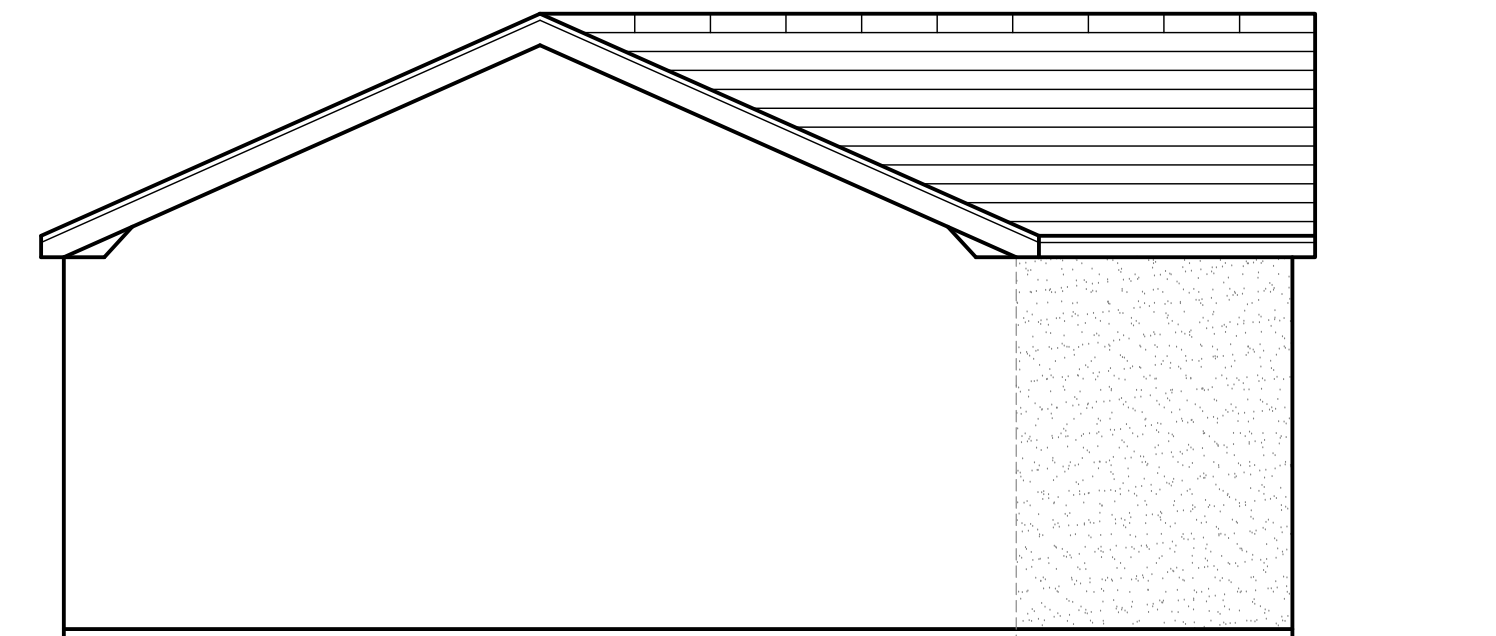
Front Elevation as Proposed



Side Elevation as Proposed

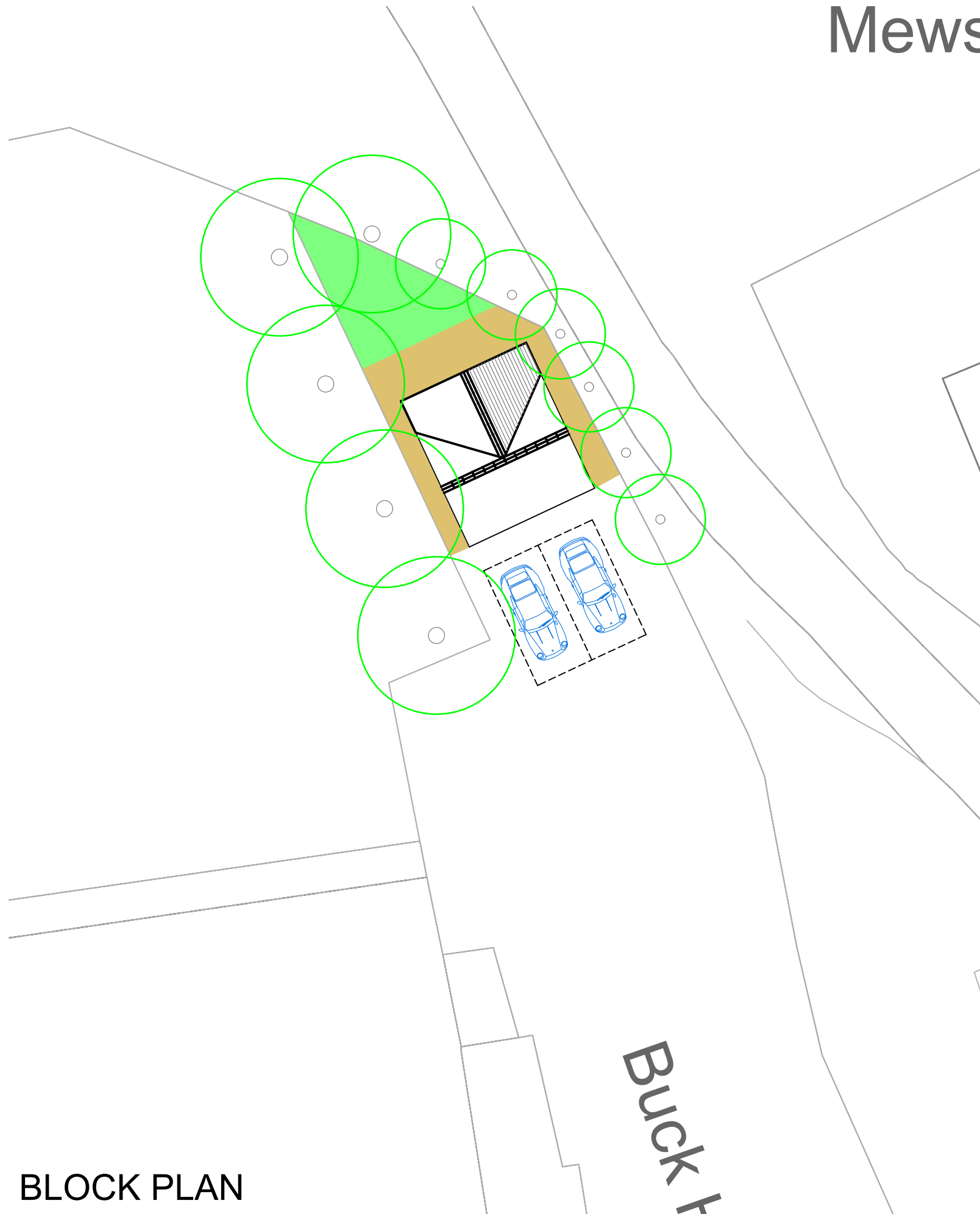


Rear Elevation as Proposed

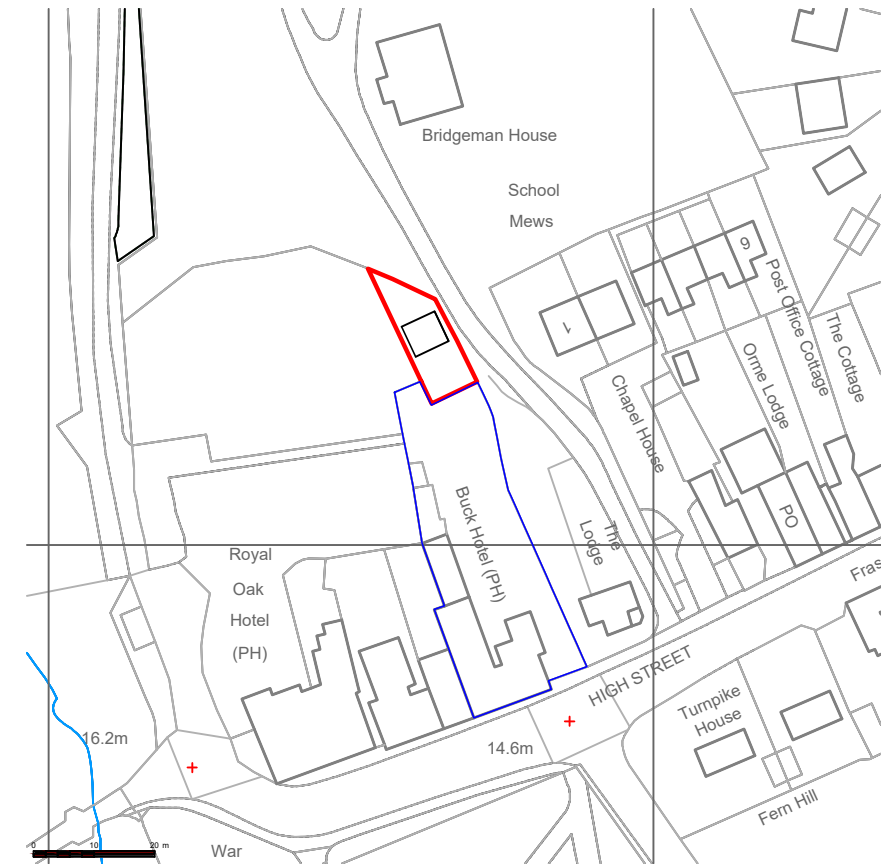


Side Elevation as Proposed

Mews



BLOCK PLAN
SCALE - 1:200

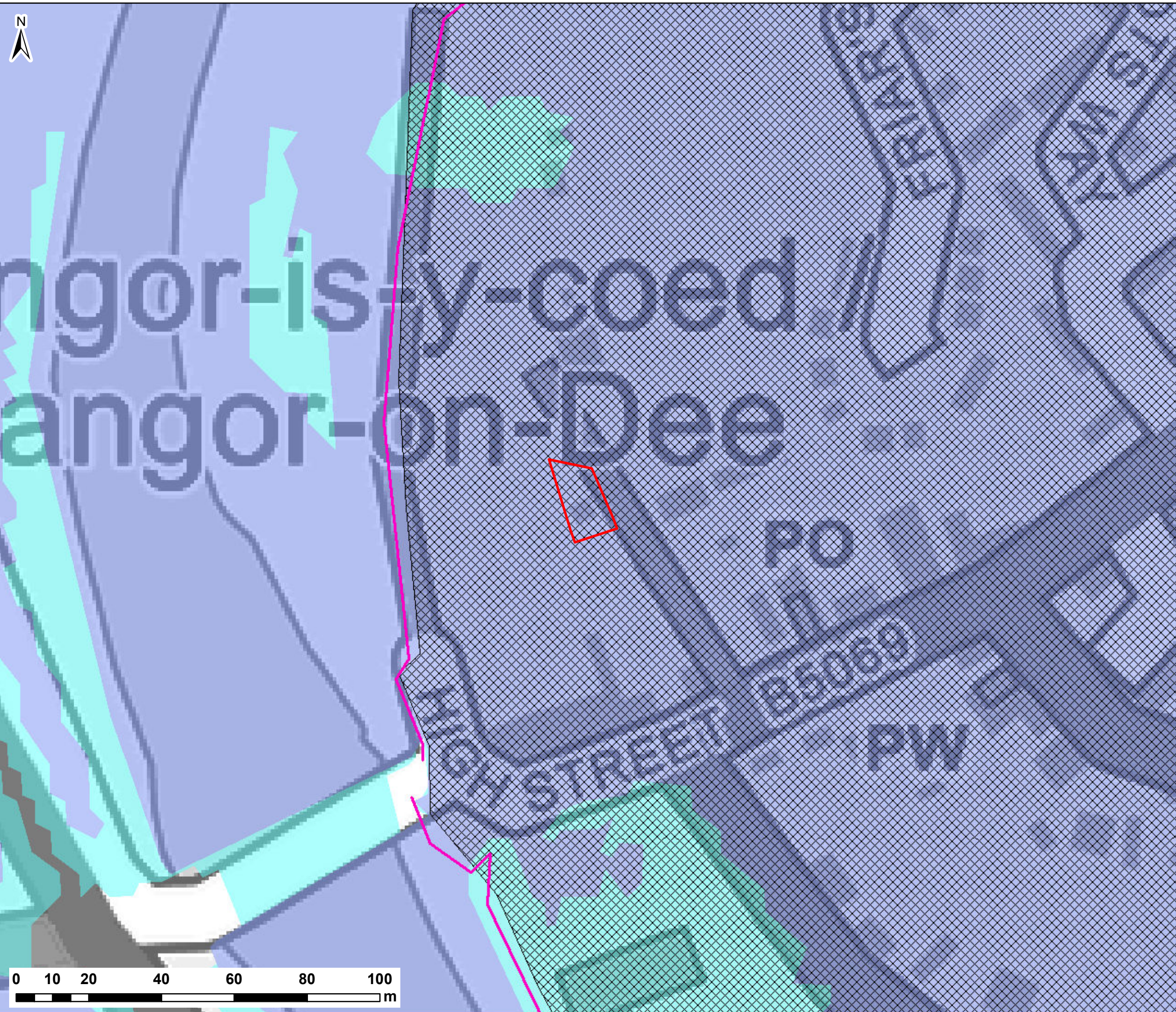


LOCATION PLAN
SCALE - 1:1250

HDS ARCHITECTURAL SERVICES
 Ferndale Villa, 25 Manley Road,
 Wrexham, LL13 8HD
 Tel (01978) 353445
 www.hdsarchitectural.co.uk

Project; Proposed Conversion of Existing Garage at 'The Buck House Hotel', Bangor On Dee.	
Title; Block Plan and Location Plan	Scale (A3); 1:200 & 1:1250
Dwg No; BH/PD/03	Date; August 2018
Revision;	

Appendix E NRW Flood Maps, Data and Correspondence



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

- LEGEND**
- Site Boundary
 - NRW Flood Defences
 - Areas Benefitting from Defences
 - NRW Flood Zone 3
 - NRW Flood Zone 2



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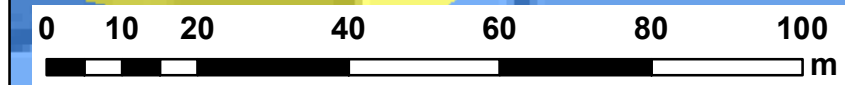
SCHEME:

HIGH STREET, BANGOR ON DEE

PLOT TITLE:

NRW FLOOD MAP FOR PLANNING
JANUARY 2019

PLOT STATUS:			DATE:
FINAL			22/01/2019
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
CM	JR	VG	1:1,000 (UNLESS STATED OTHERWISE)
PLOT NAME:			REV:
w10866-NRW_FZ			-



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

TAN15 Classification

Zone A

Zone B

Zone C1

Zone C2

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SCHEME:

HIGH STREET, BANGOR ON DEE

PLOT TITLE:

WELSH GOVERNMENT DEVELOPMENT ADVICE MAP
JANUARY 2019

PLOT STATUS:			DATE:
FINAL			22/01/2019

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
CM	JR	VG	1:1,000
			(UNLESS STATED OTHERWISE)

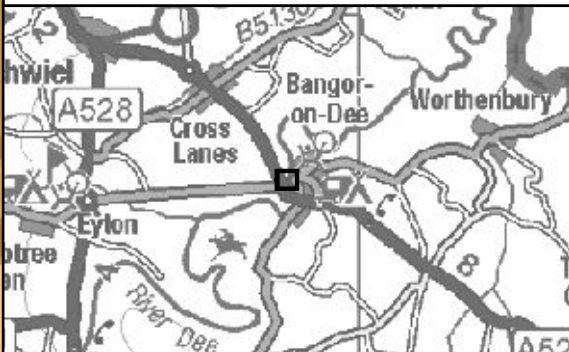
PLOT NAME:	REV:
w10866-TAN_15	-



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

-  Site Boundary
-  NRW Historical Flood Map



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COMPANY LTD**



SCHEME:
**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:
NRW HISTORICAL FLOOD MAP

PLOT STATUS: FINAL			DATE: 22/01/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:1,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-NRW_HIST			REV: -

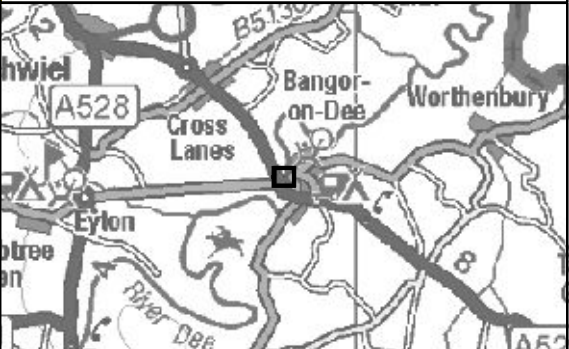




NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

- Site Boundary
- Low Risk (0.1% AEP Event)
- Medium Risk (1.0% AEP Event)
- High Risk (3.3% AEP Event)



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SCHEME:

HIGH STREET, BANGOR ON DEE

PLOT TITLE:

NRW FLOOD MAP FOR SURFACE WATER
JANUARY 2019

PLOT STATUS:			DATE:
FINAL			22/01/2019
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
CM	JR	VG	1:1,000 (UNLESS STATED OTHERWISE)
PLOT NAME:			REV:
w10866-NRW_SW			-



Cyfoeth Naturiol Cymru
Natural Resources Wales

Map Title

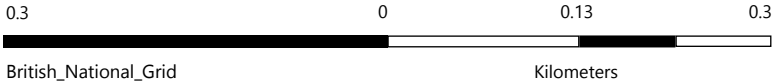
Map Perygl Llifogydd / Flood Risk Map

Allwedd / Map Key

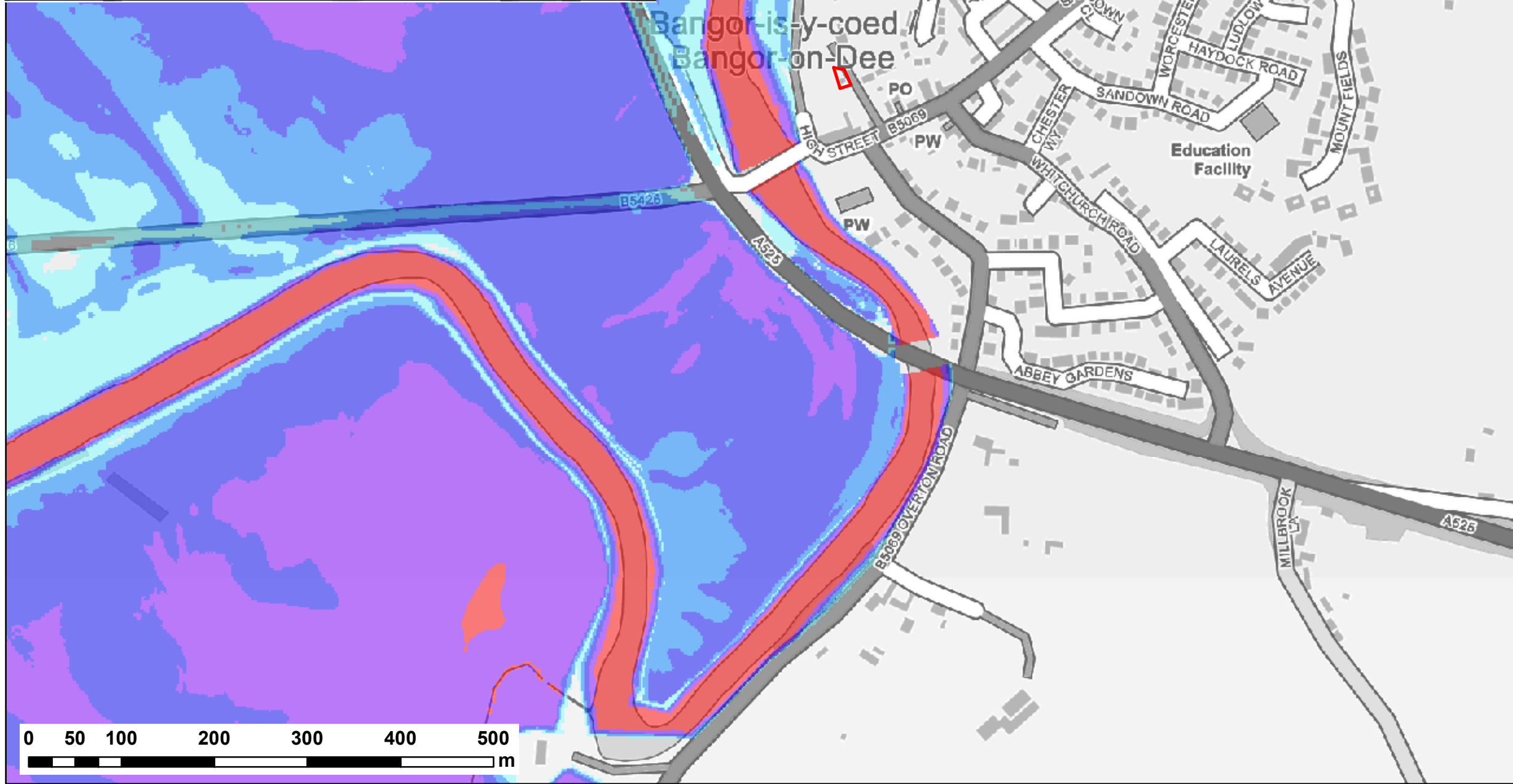
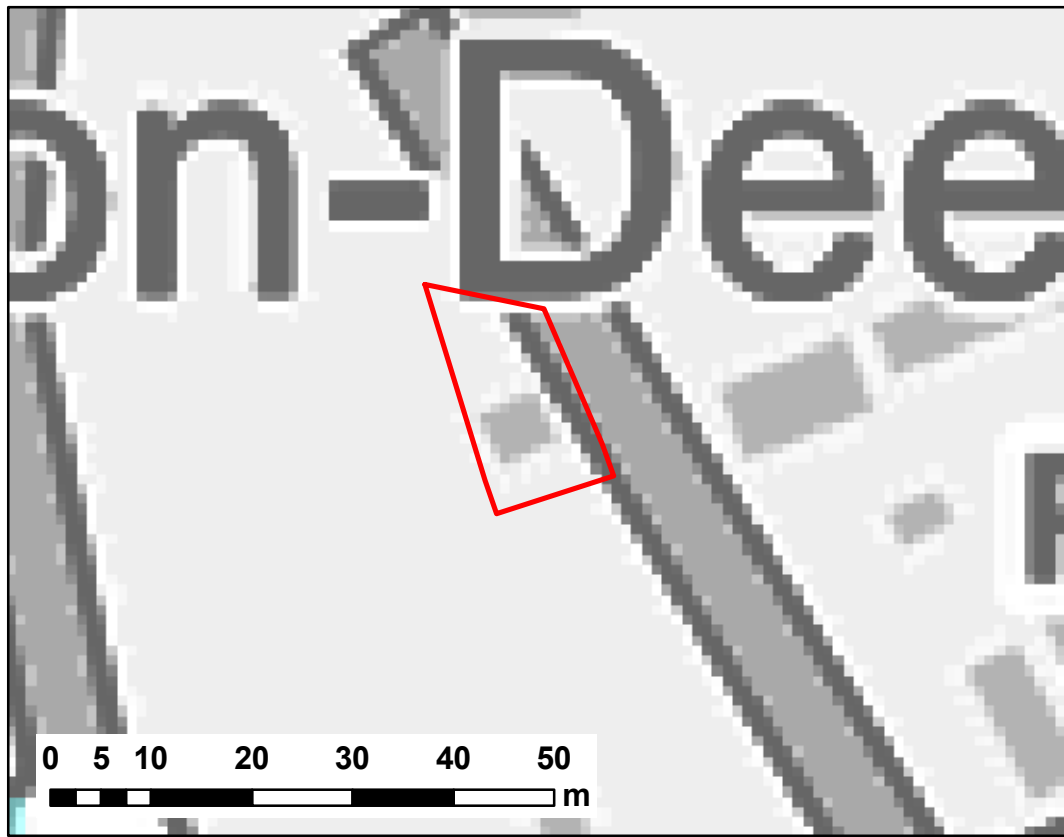
■ Reservoir Extents

Graddfa / Scale 1: 5,001

Dyddiad / Date
25/01/2019



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NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

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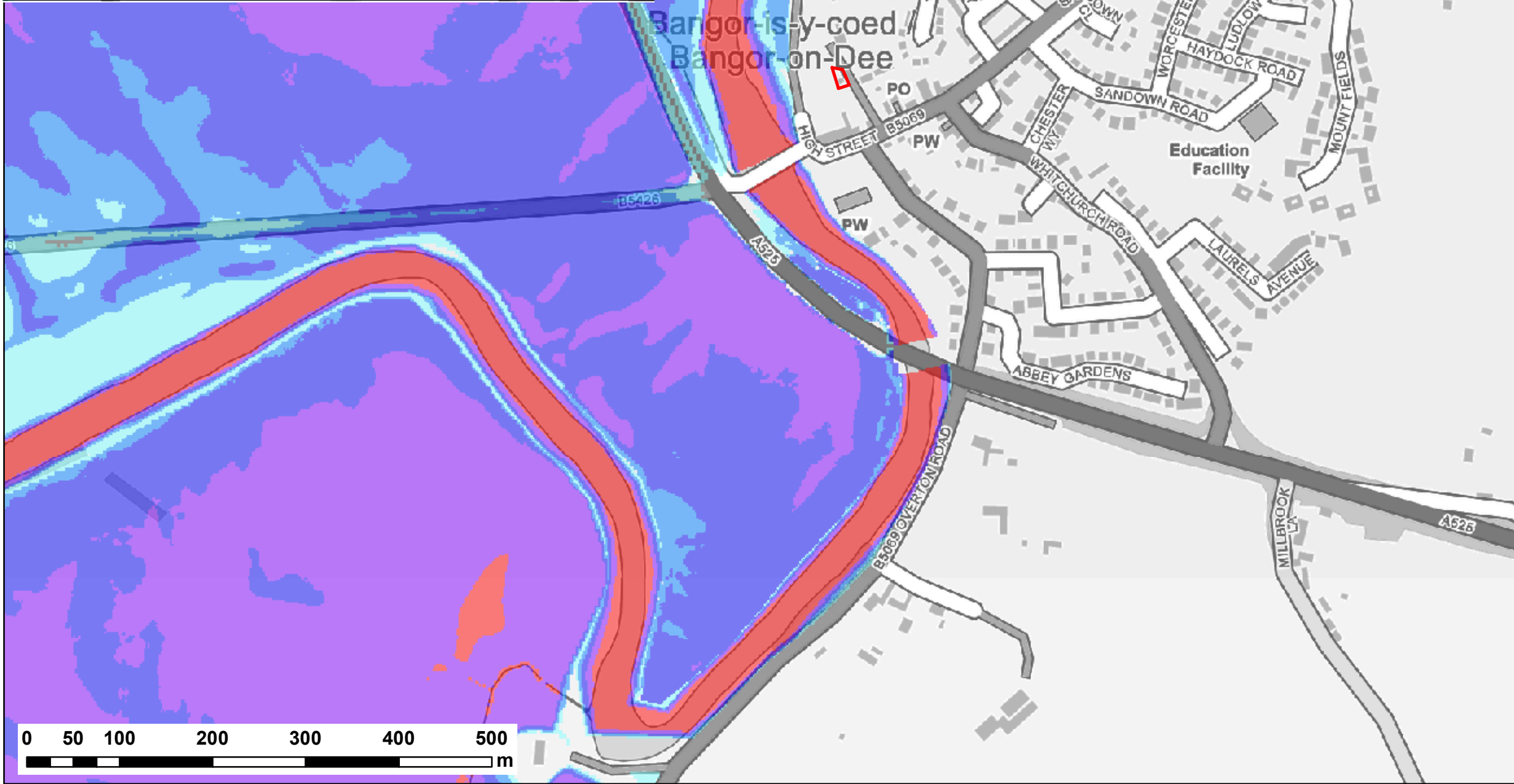
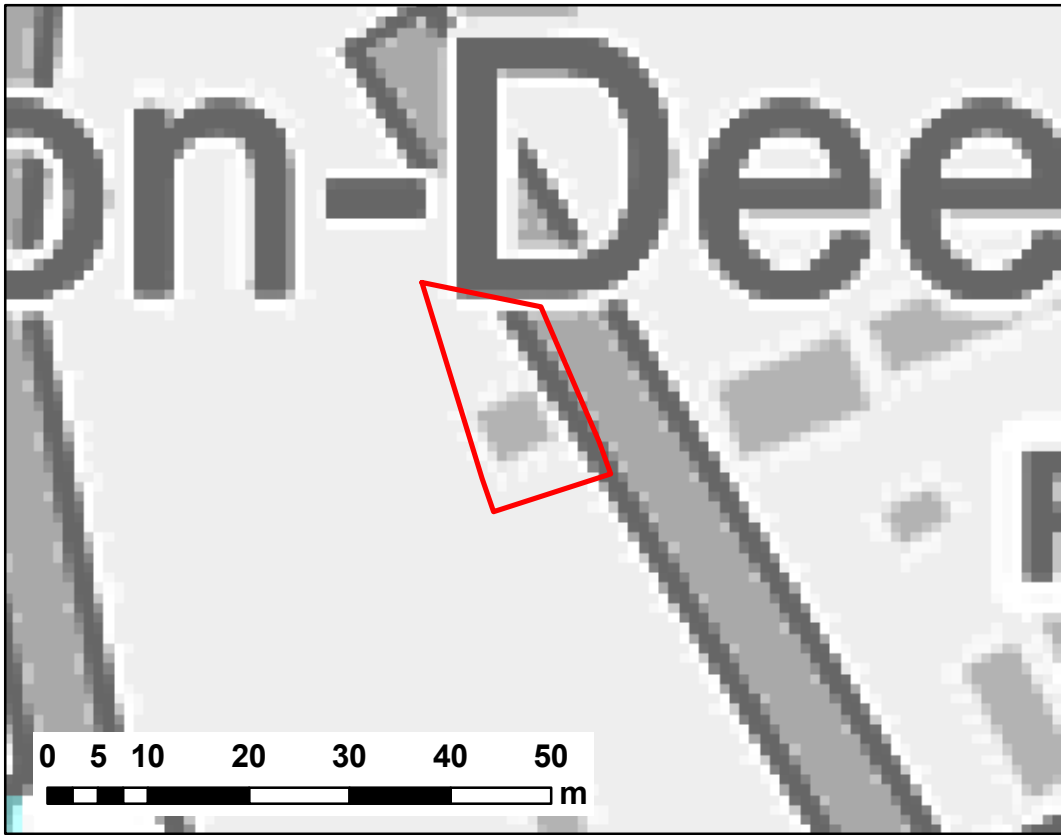
SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT (DEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

PLOT STATUS: **FINAL** DATE: 22/02/2019

DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
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PLOT NAME: w10866-DEF_Q100_D REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

CLIENT:
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www.waterco.co.uk

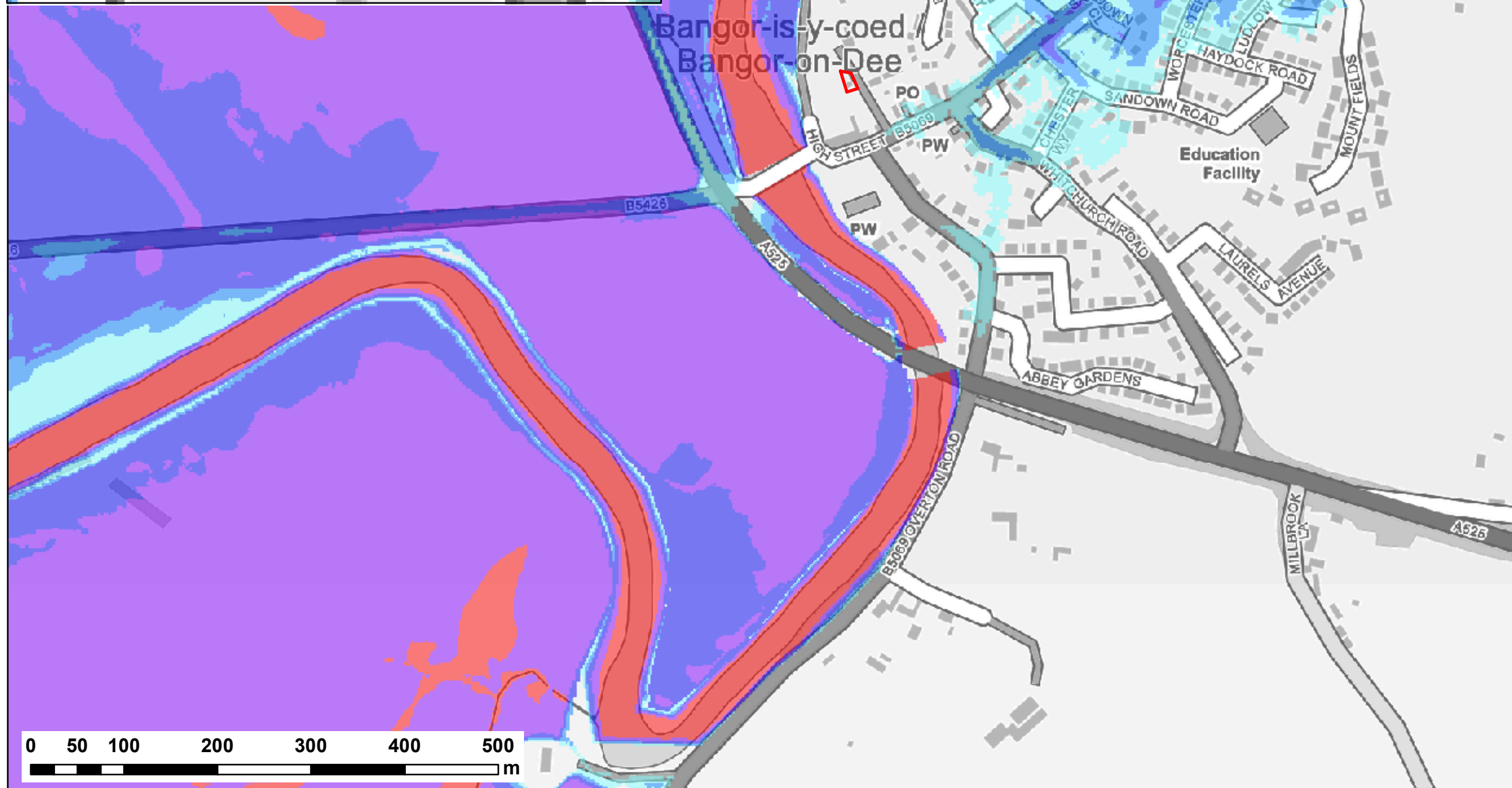
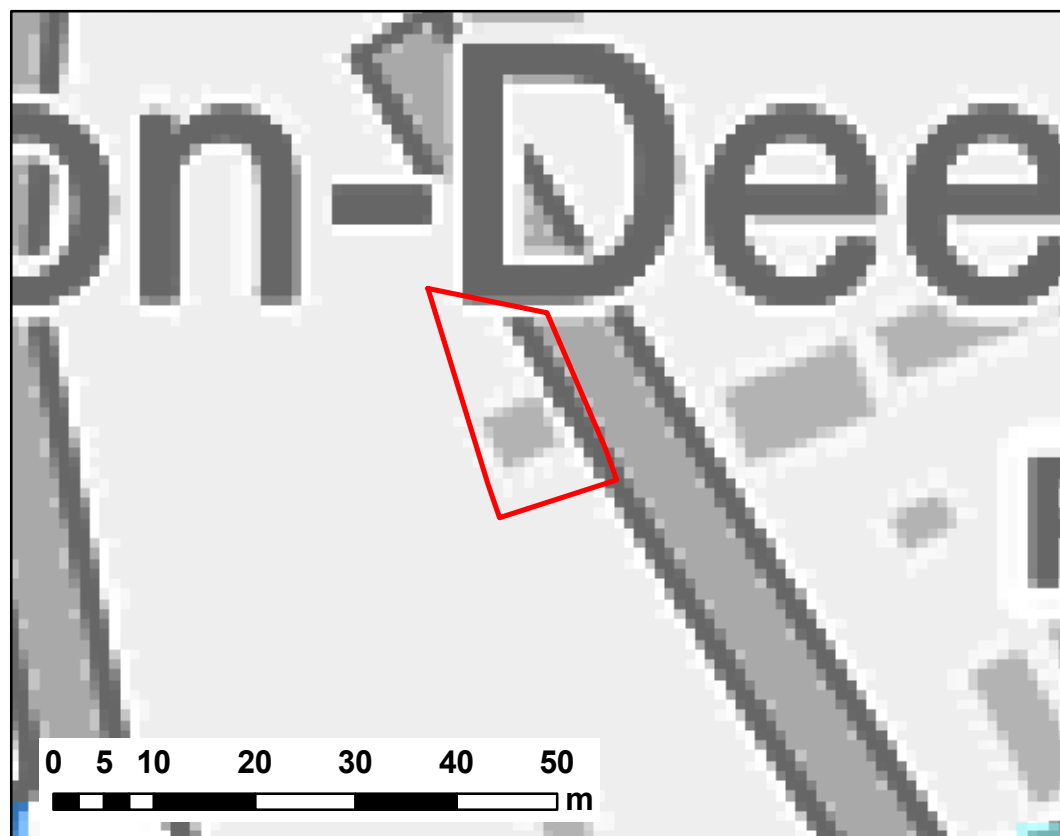
SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP + CC (20%) FLUVIAL EVENT (DEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

PLOT STATUS: **FINAL** DATE: 22/02/2019

DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
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PLOT NAME: w10866-DEF_Q100CC_D REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

 Site Boundary

Maximum Flood Depth (m)

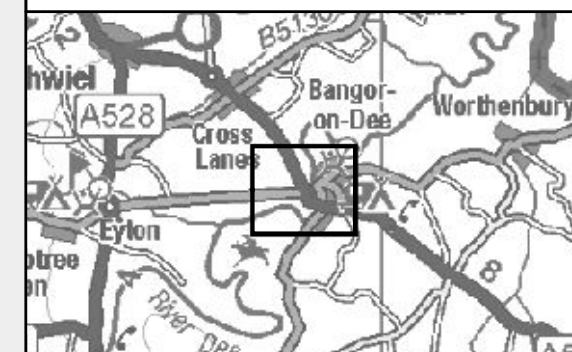
 0 - 0.3

0.3 - 0.6

0.6 - 1.2

1.2 - 2.4

$\square > 2.4$



CLIENT:

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COMPANY LTD**



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SCHEME:

**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:
MAXIMUM FLOOD DEPTH
0.1% AEP FLUVIAL EVENT (DEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

PLOT STATUS:

FINAL

DATE:

22/02/2019

DRAWN:

CM

CHECKED:

JR

APPROVED:

VG

: PLOT SCALE @ A3:

1:5,000

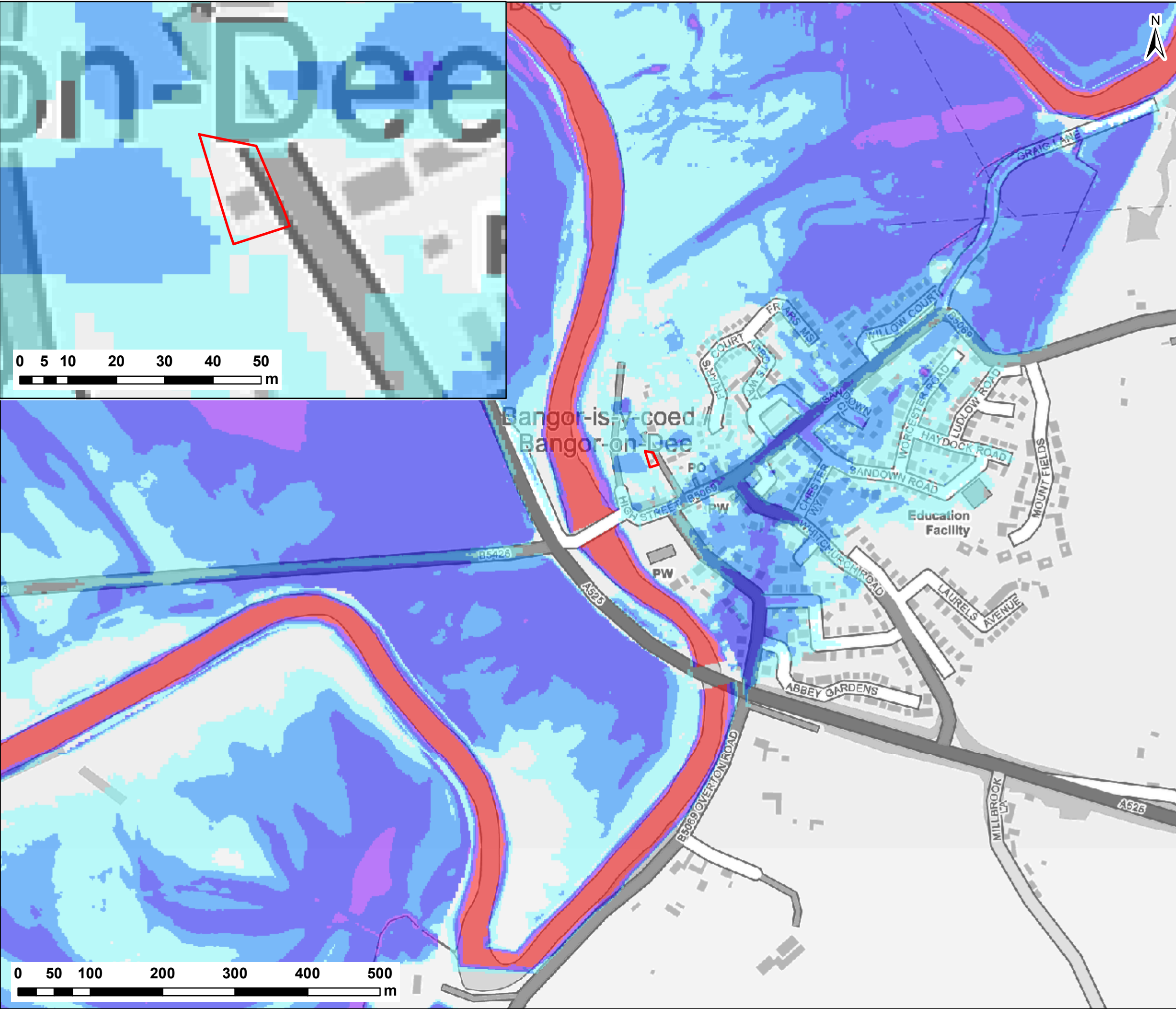
(UNLESS STATED OTHERWISE)

PLOT NAME:

w10866-DEF_Q1000_D

REV:	
------	--

1



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

	0 - 0.3
	0.3 - 0.6
	0.6 - 1.2
	1.2 - 2.4
	> 2.4

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SCHEME:

HIGH STREET, BANGOR ON DEE

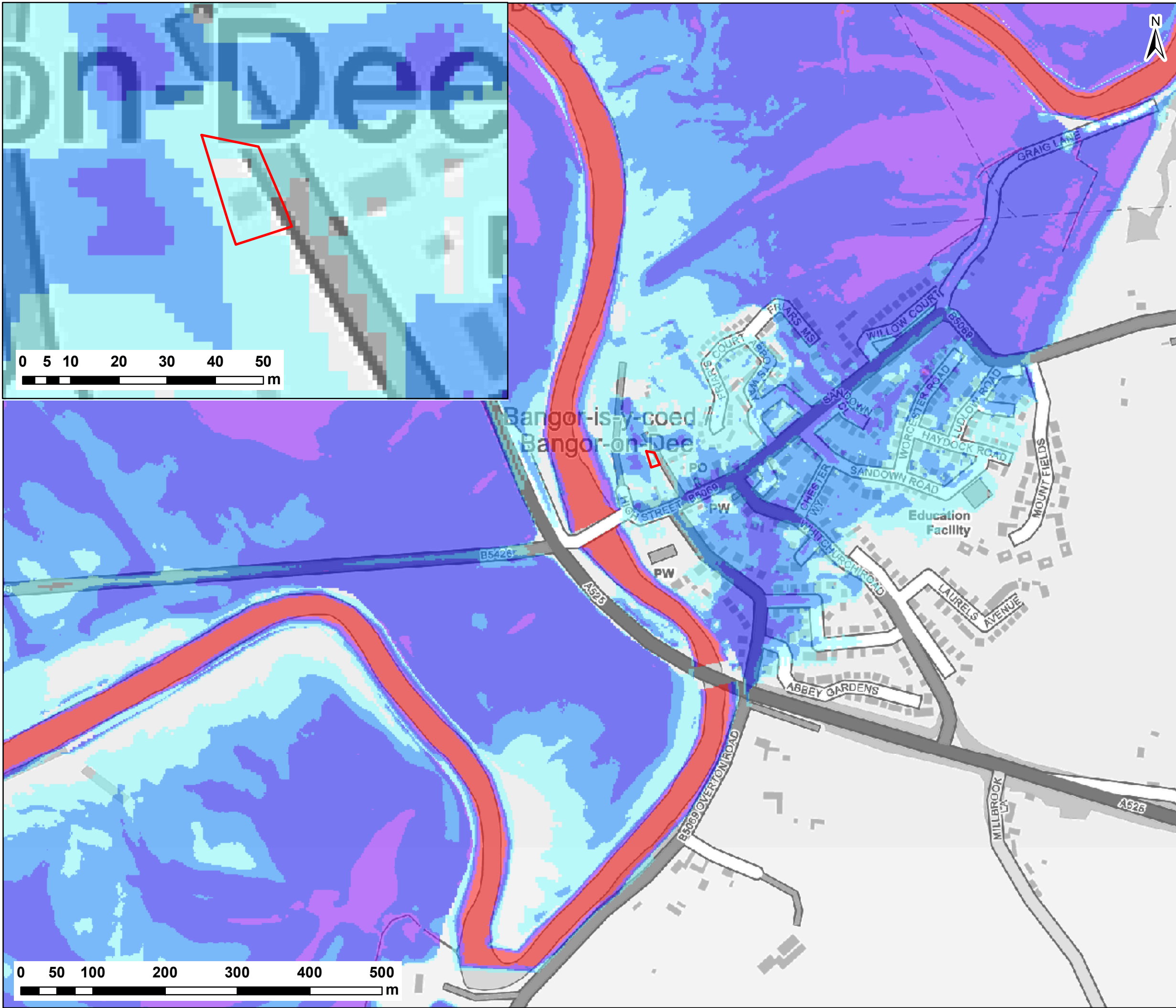
PLOT TITLE:

MAXIMUM FLOOD DEPTH
5% AEP FLUVIAL EVENT (UNDEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

PLOT STATUS:			DATE:
FINAL			22/02/2019

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE @ A3:
CM	JR	VG	1:5,000
			(UNLESS STATED OTHERWISE)

PLOT NAME:	REV:
w10866-UNDEF_Q20_D	-



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

CLIENT:

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SCHEME:

HIGH STREET, BANGOR ON DEE

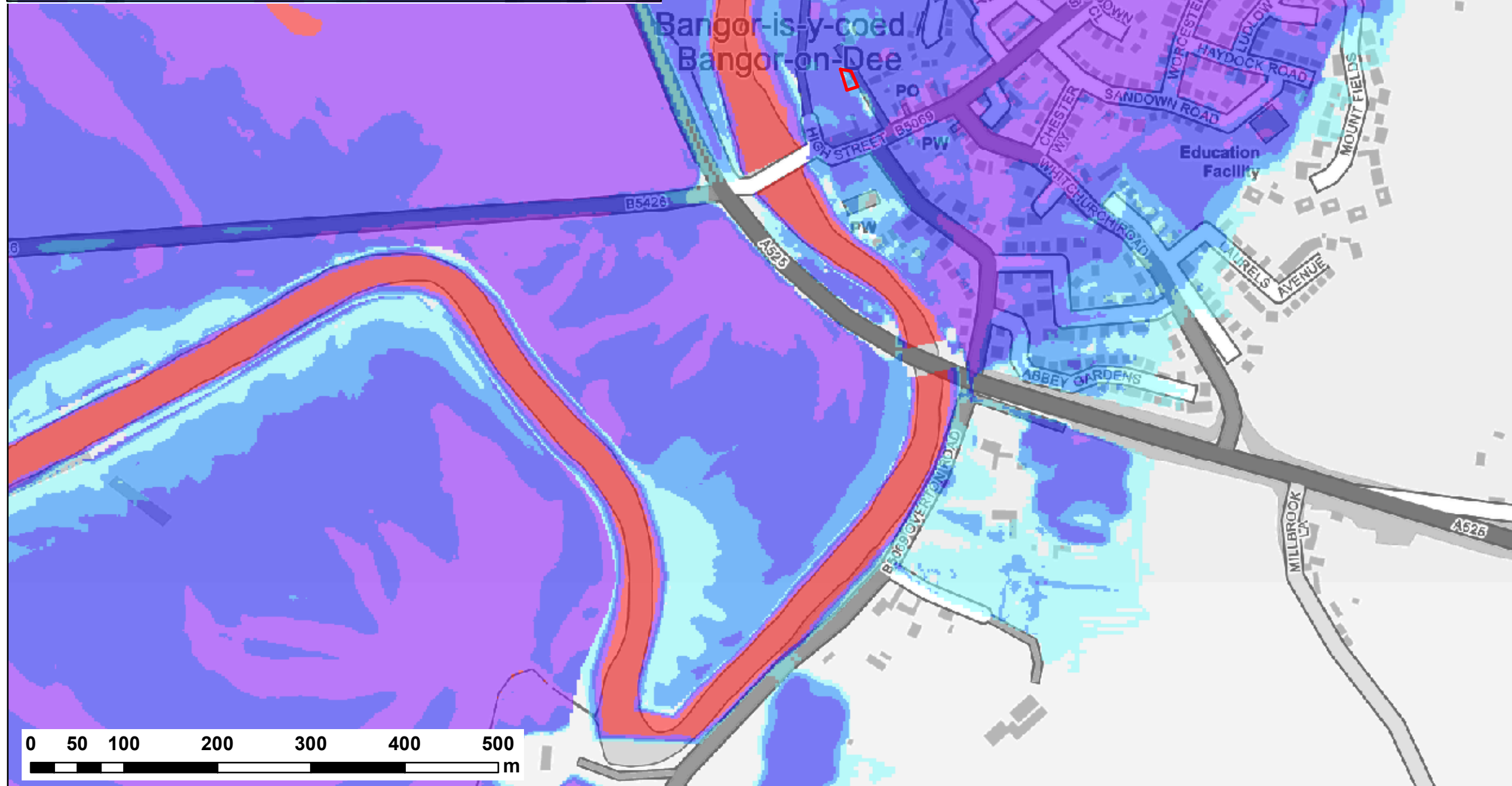
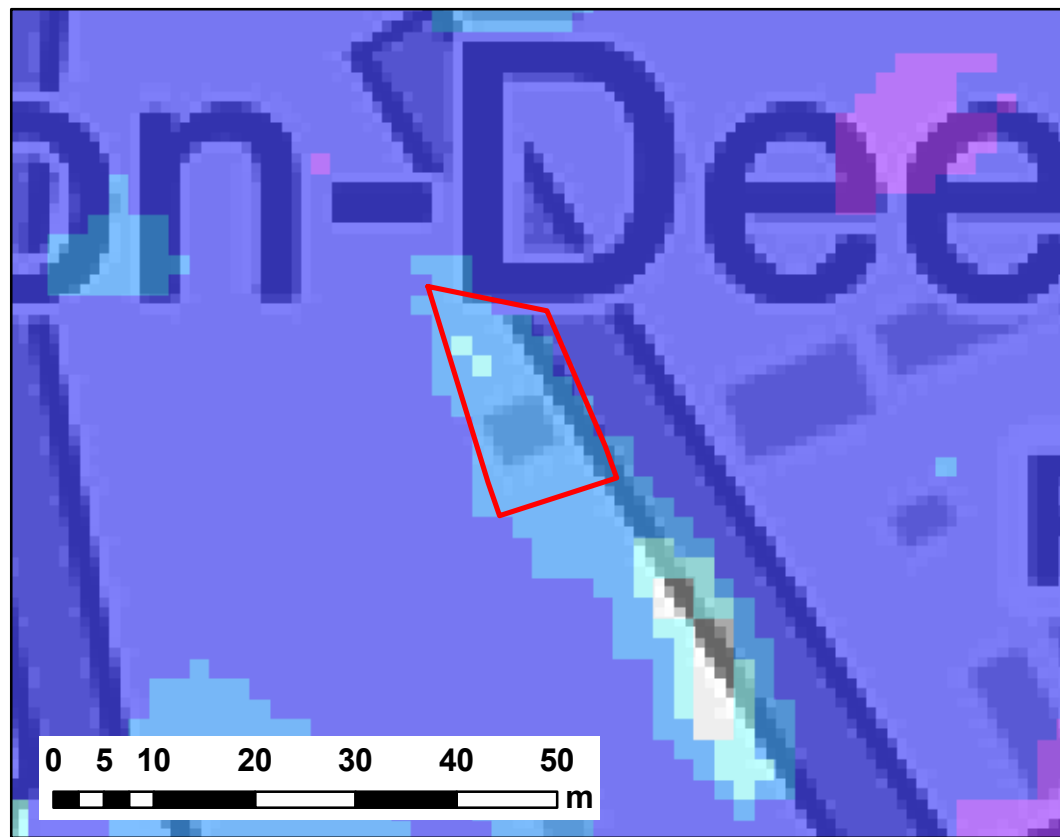
PLOT TITLE:

MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT (UNDEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

PLOT STATUS: **FINAL** DATE: 22/02/2019

DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
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PLOT NAME: w10866-UNDEF_Q100_D REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

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SCHEME:

HIGH STREET, BANGOR ON DEE

PLOT TITLE:

MAXIMUM FLOOD DEPTH
0.1% AEP FLUVIAL EVENT(UNDEFENDED)
EXISTING SITE LAYOUT
NORMAL FLOW CONDITIONS

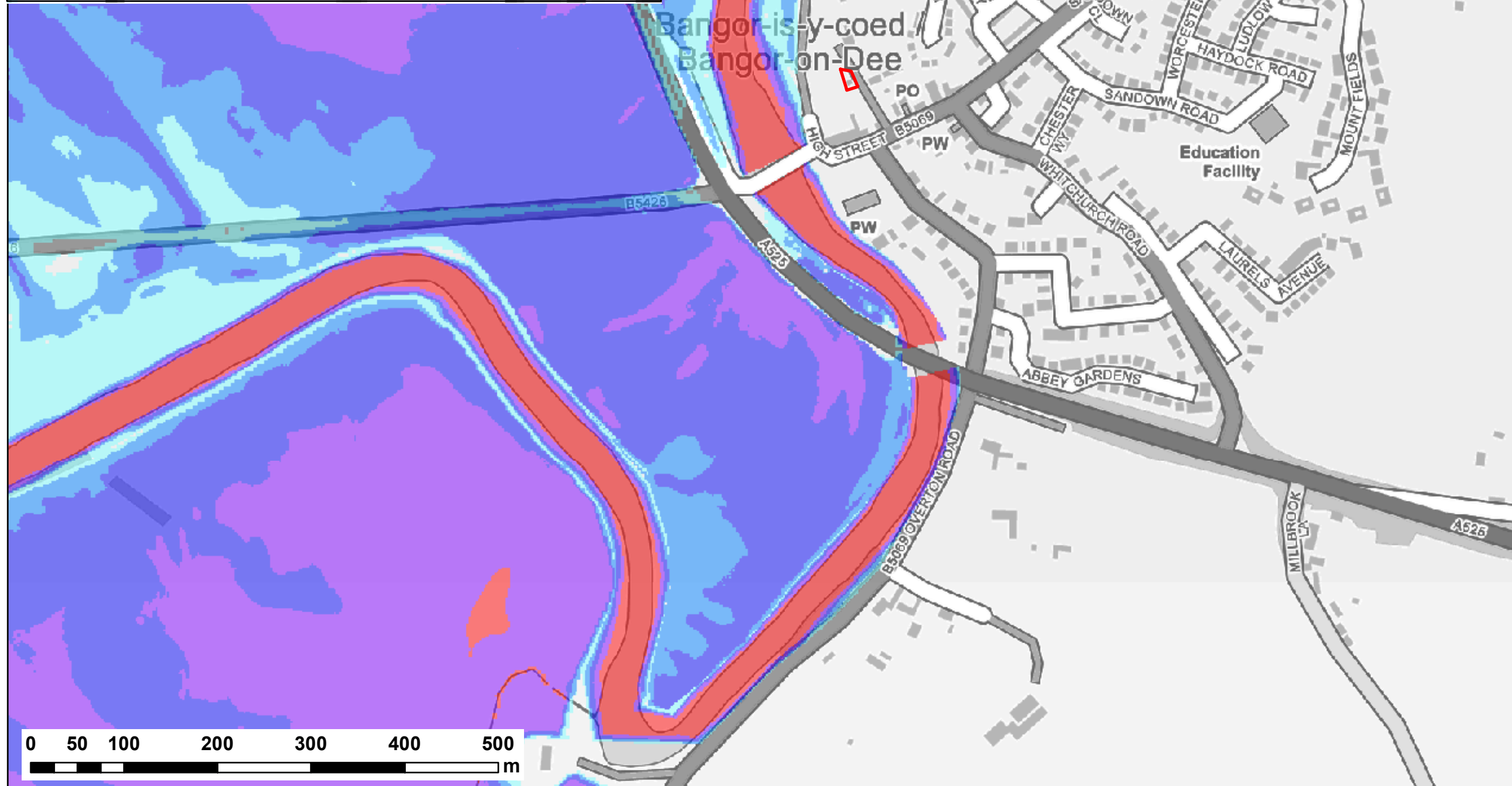
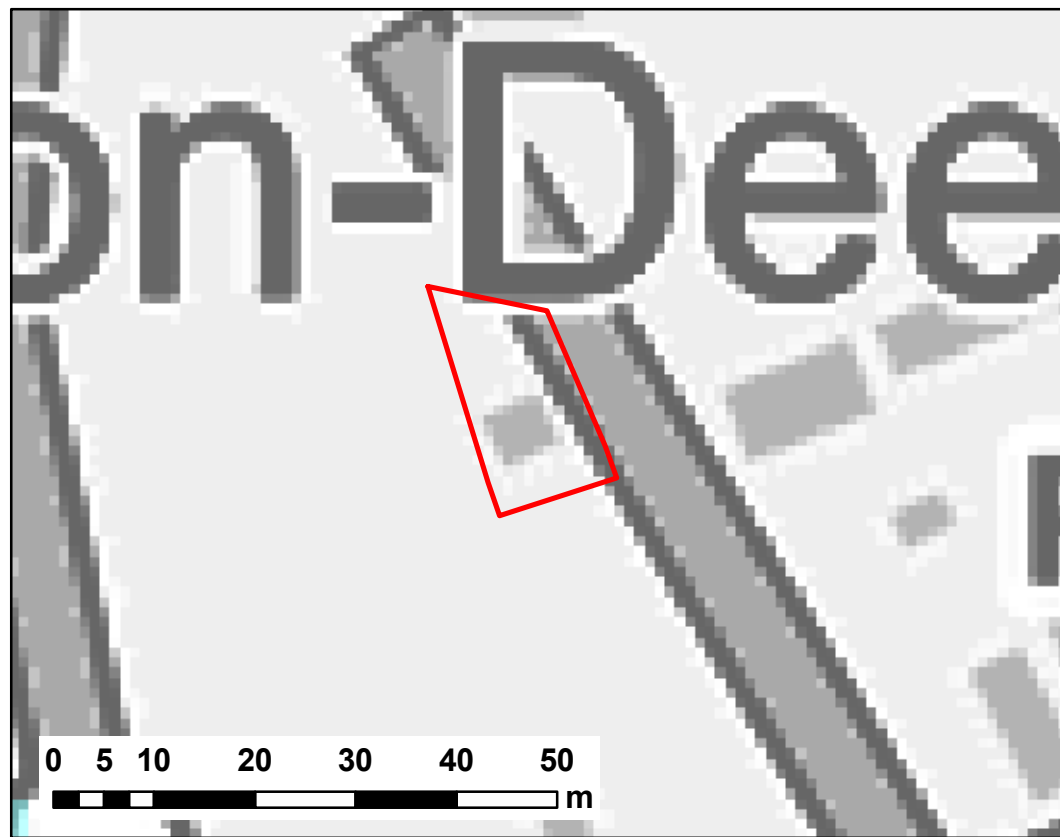
PLOT STATUS: FINAL

DATE: 22/02/2019

DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
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PLOT NAME: w10866-UNDEF_Q1000_D

REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

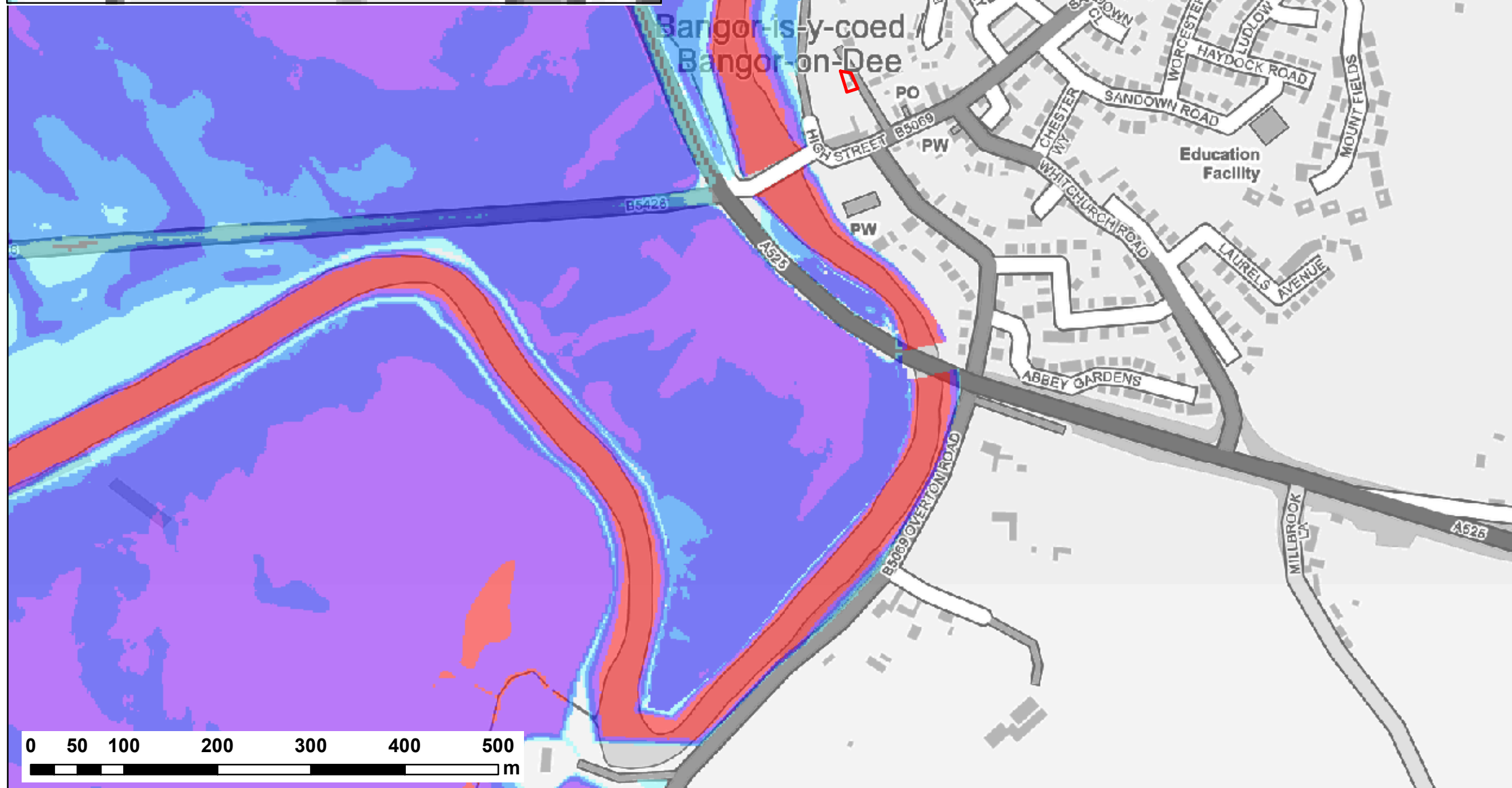
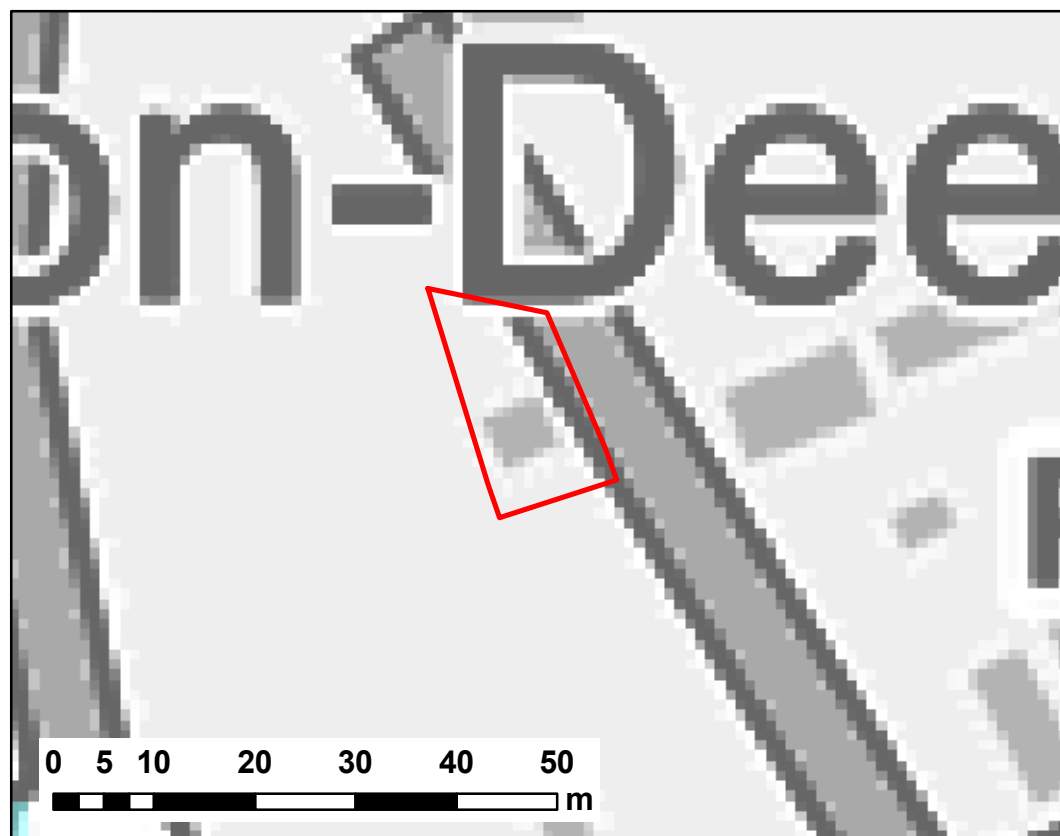
CLIENT:
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waterco
www.waterco.co.uk

SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SITE LAYOUT
BLOCKAGE 1 (80%)

PLOT STATUS: FINAL			DATE: 22/02/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-B1H_Q100_D			REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

 Site Boundary

Maximum Flood Depth (m)

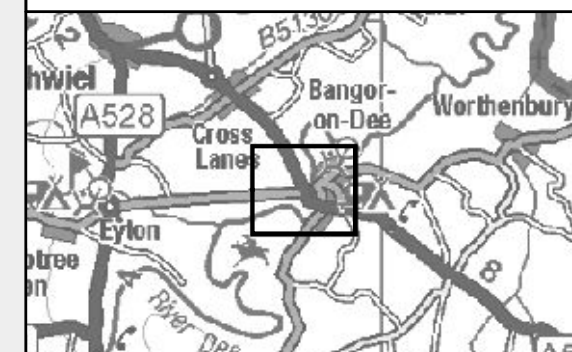
0 - 0.3

0.3 - 0.6

0.6 - 1.2

1.2 - 2.4

$\square > 2.4$



CLIENT:

**WREXHAM LAGER BEER
COMPANY LTD**



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SCHEME:

**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:

TITLE:
MAXIMUM FLOOD DEPTH
1% AEP + CC (15%) FLUVIAL EVENT
EXISTING SITE LAYOUT
BLOCKAGE 1 (80%)

PLOT STATUS:

FINAL

DATE:

22/02/2019

DRAWN:

CP

CHECKED:

JR

APPROVED:

VG

: PLOT SCALE @ A3:

1:5,000

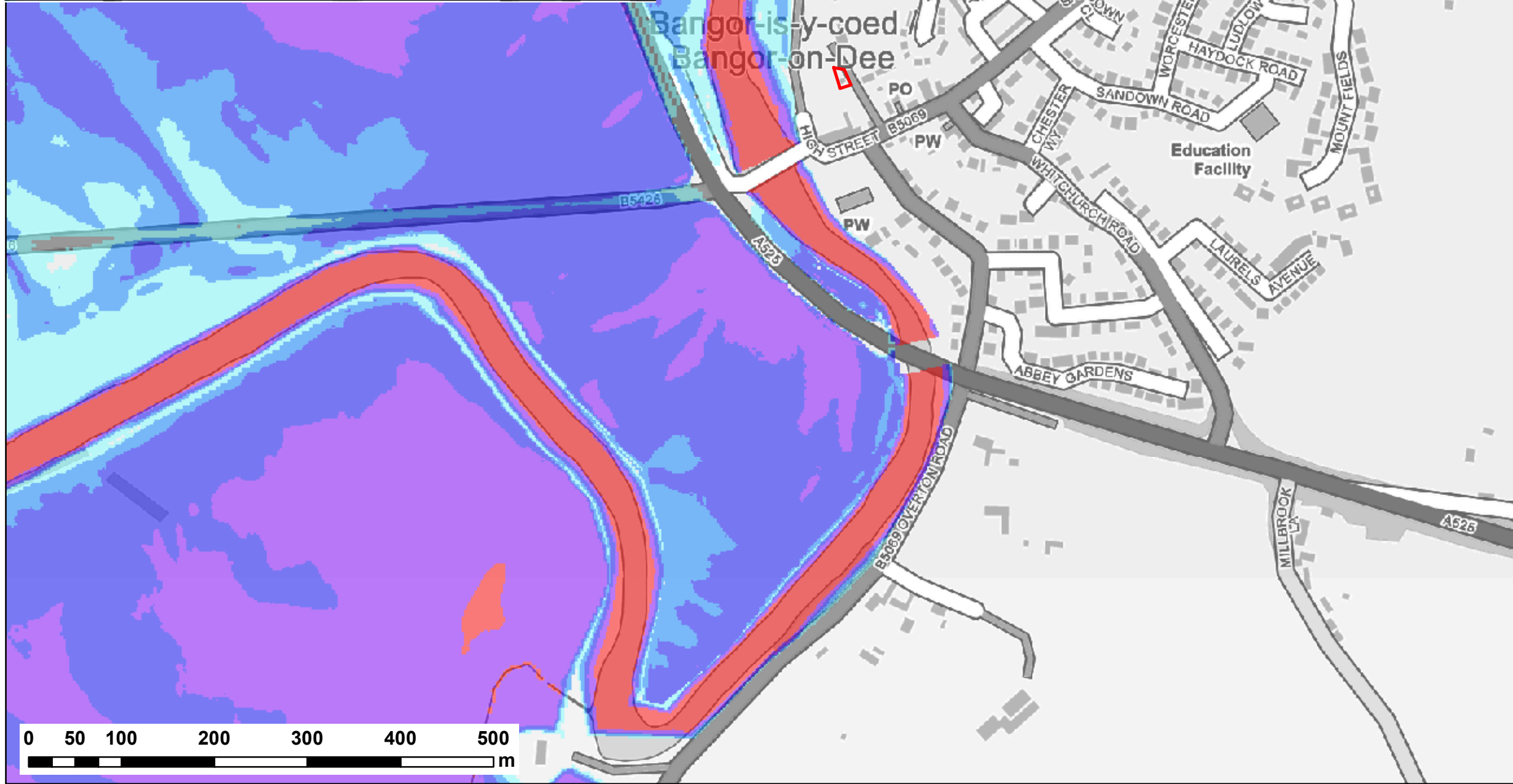
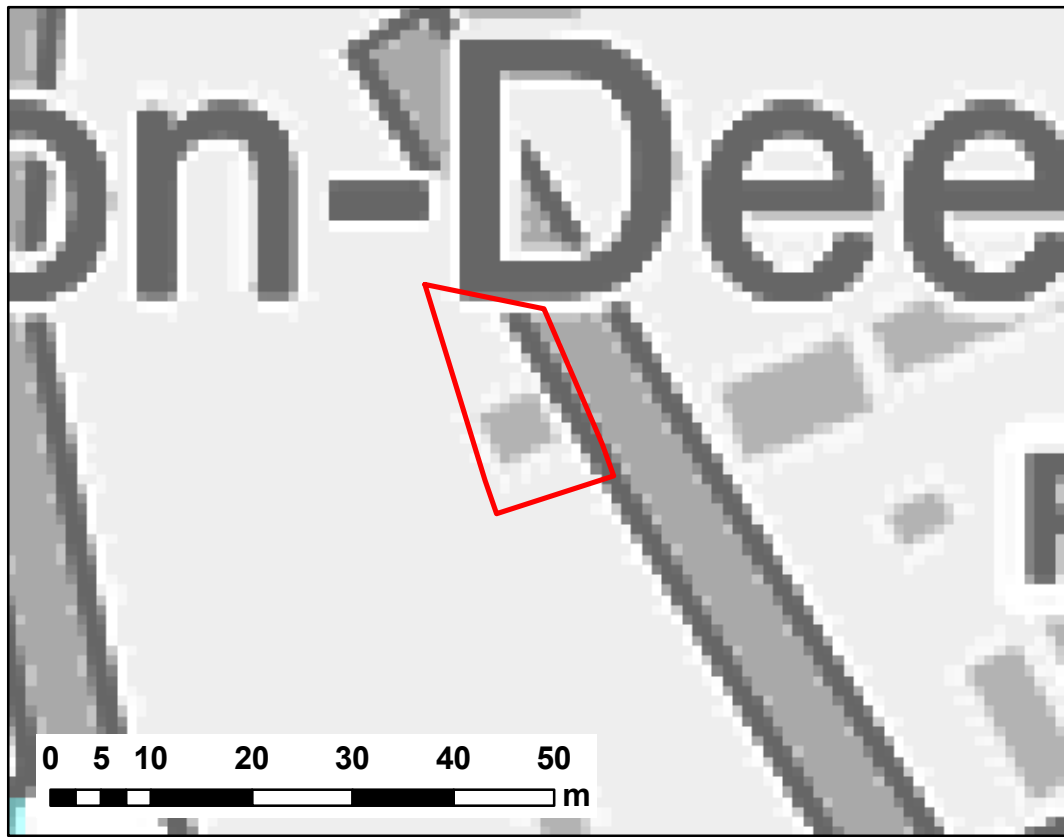
(UNLESS STATED OTHERWISE)

PLOT NAME:

w10866-B1H_Q100CC_D

REV:	
------	--

11



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

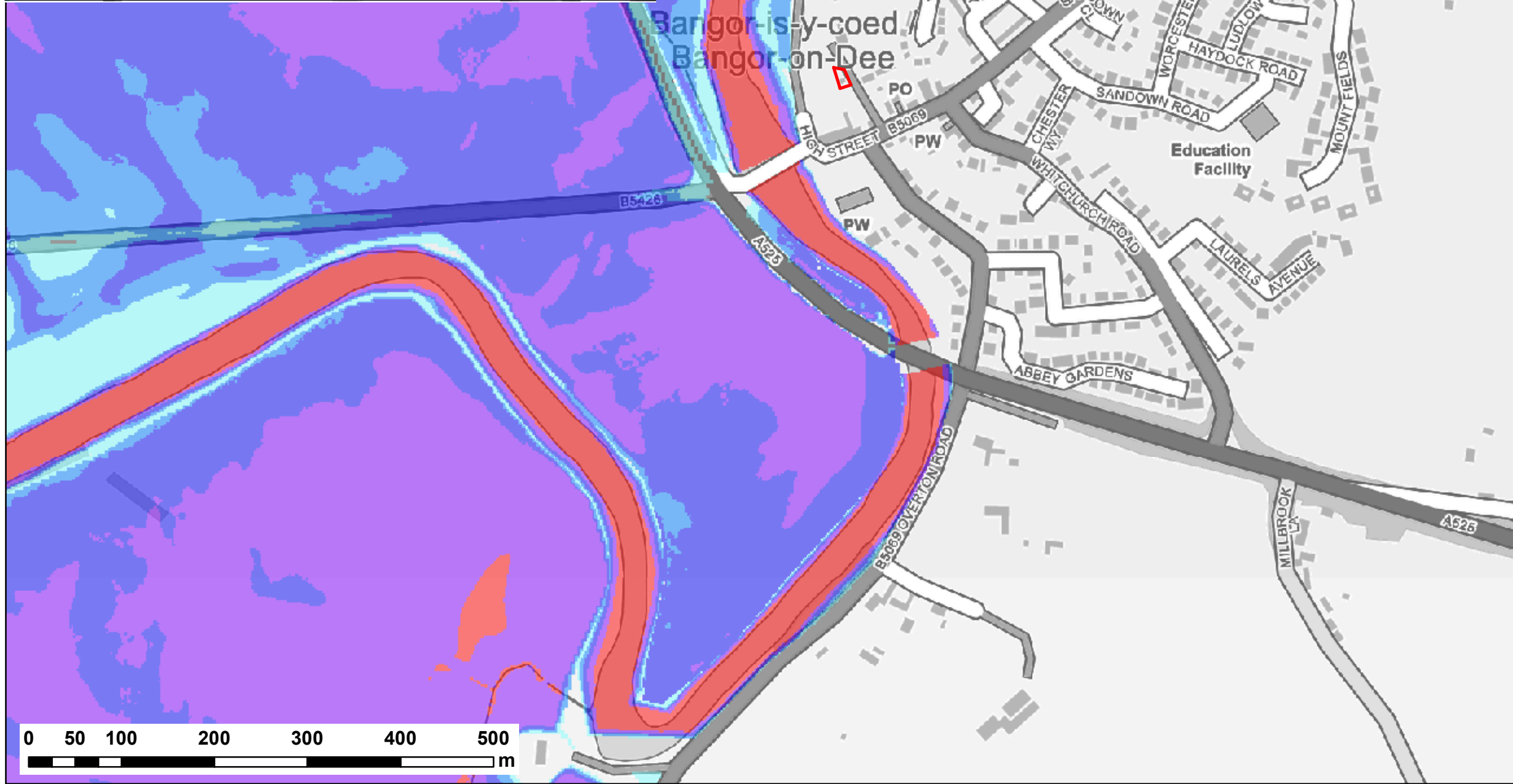
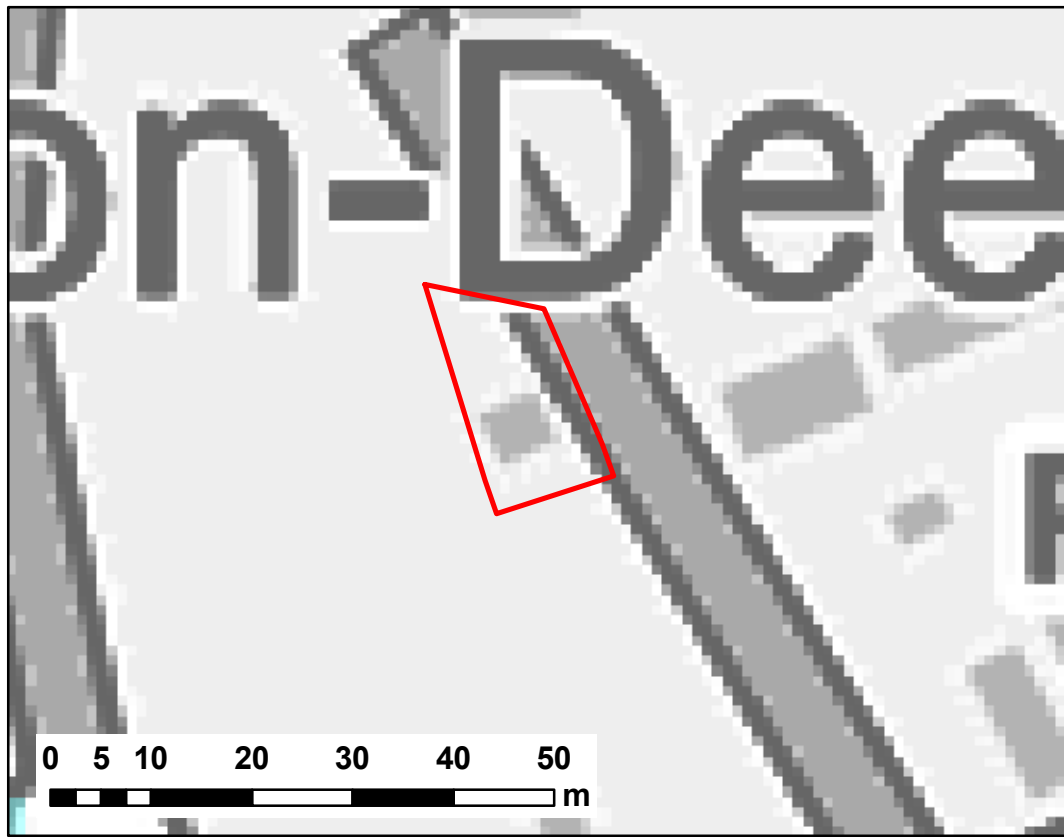
CLIENT:
WREXHAM LAGER BEER COMPANY LTD

waterco
www.waterco.co.uk

SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SITE LAYOUT
BLOCKAGE 2 (80%)

PLOT STATUS: FINAL			DATE: 22/02/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-B2H_Q100_D			REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

Site Boundary

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

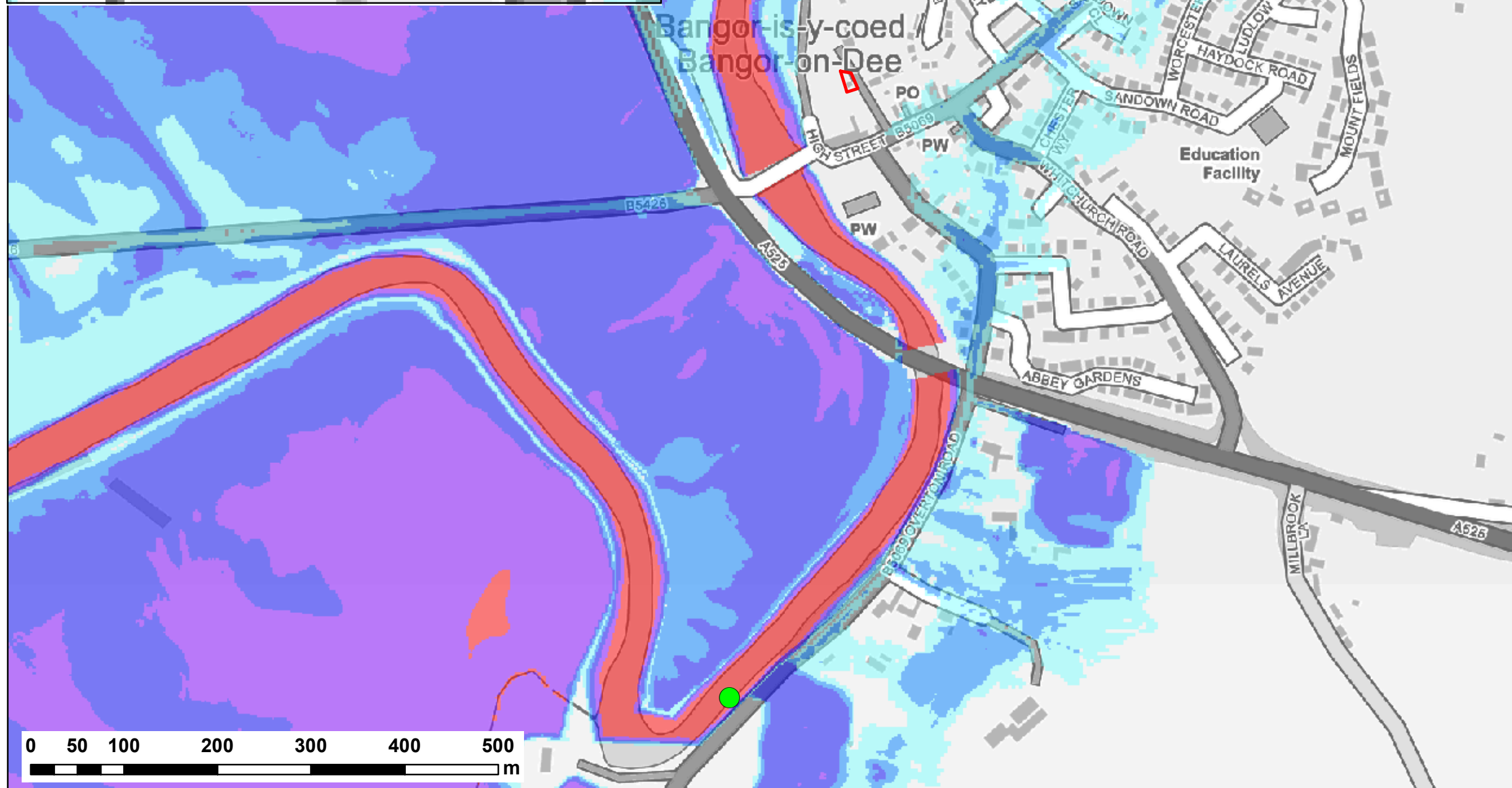
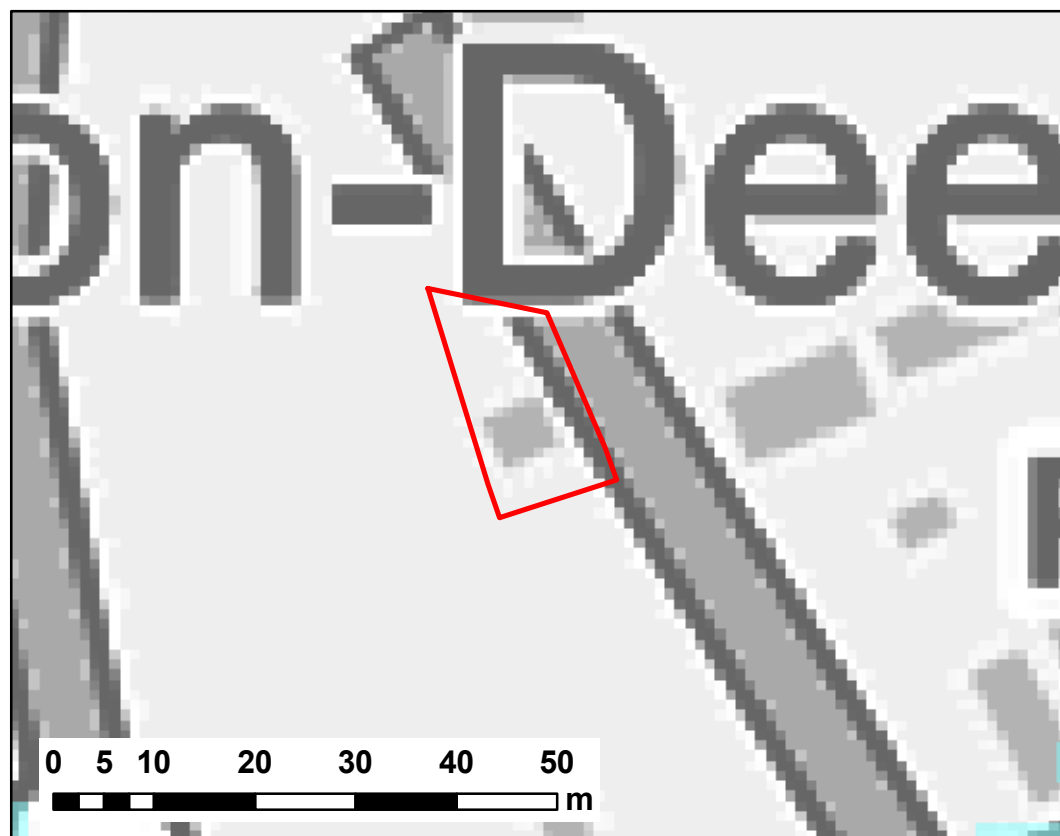
CLIENT:
WREXHAM LAGER BEER COMPANY LTD

waterco
www.waterco.co.uk

SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP + CC (15%) FLUVIAL EVENT
EXISTING SITE LAYOUT
BLOCKAGE 2 (80%)

PLOT STATUS: FINAL			DATE: 22/02/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-B2H_Q100CC_D			REV: -



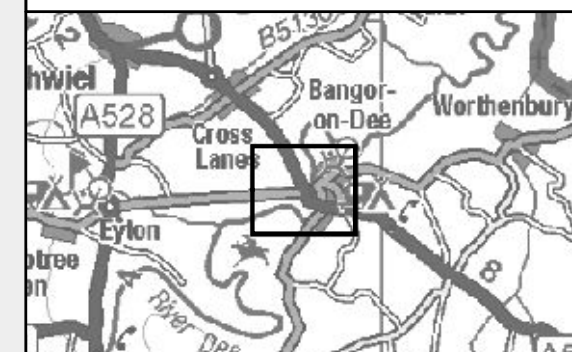
NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

-  Site Boundary
-  Breach 1 - Turn of Dee

Maximum Flood Depth (m)

- 0 - 0.3
0.3 - 0.6
0.6 - 1.2
1.2 - 2.4
> 2.4



CLIENT:

**WREXHAM LAGER BEER
COMPANY LTD**



www.waterco.co.uk

SCHEME:

**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:

TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SITE LAYOUT
BREACH - TURN OF DEE

PLOT STATUS:

FINAL

DATE:

DATE: 22/02/2019

DRAWN:

CP

CHECKED:

JR

APPROVED:

VG

: PLOT SCALE @ A3:

1:5,000

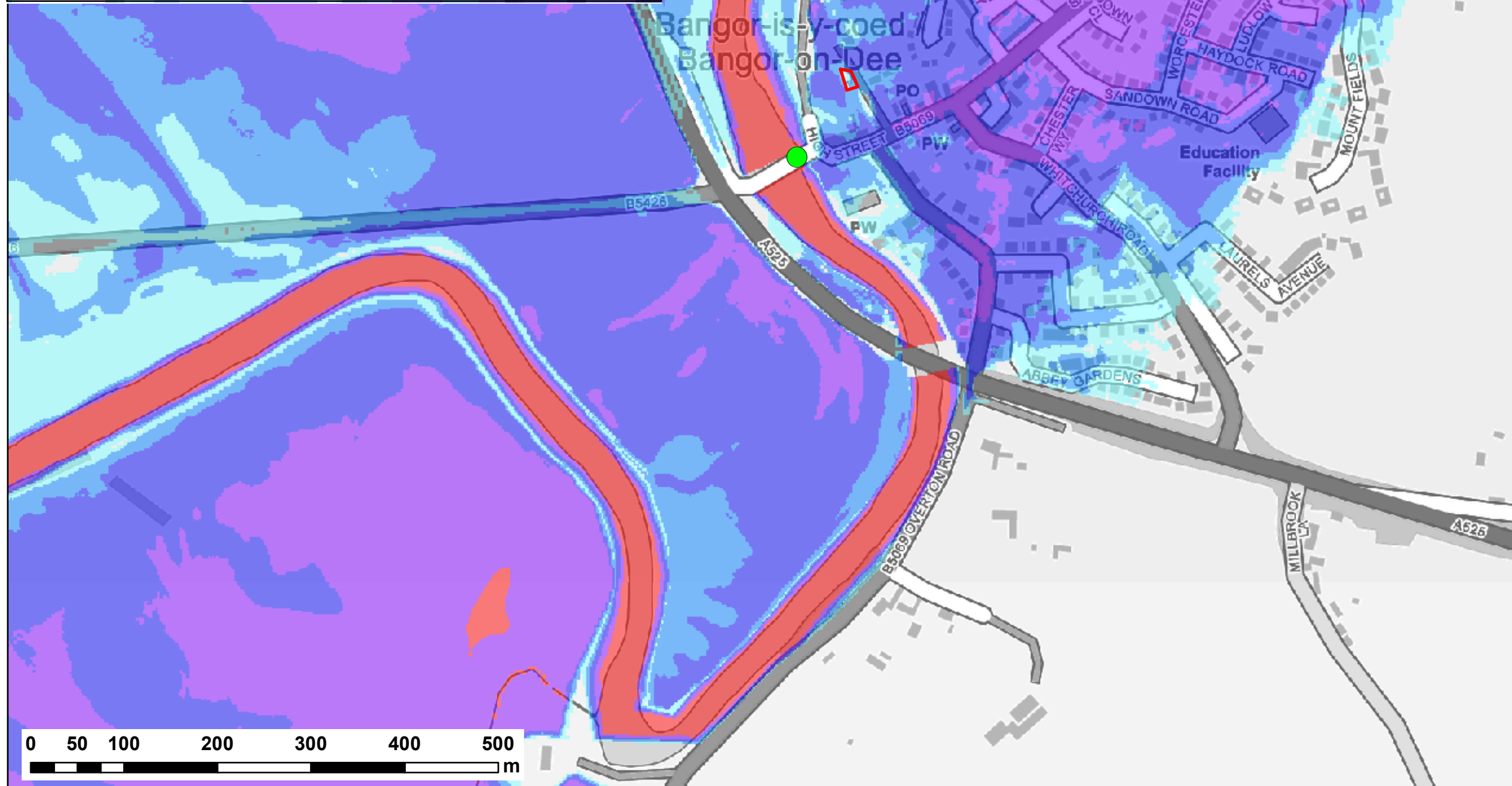
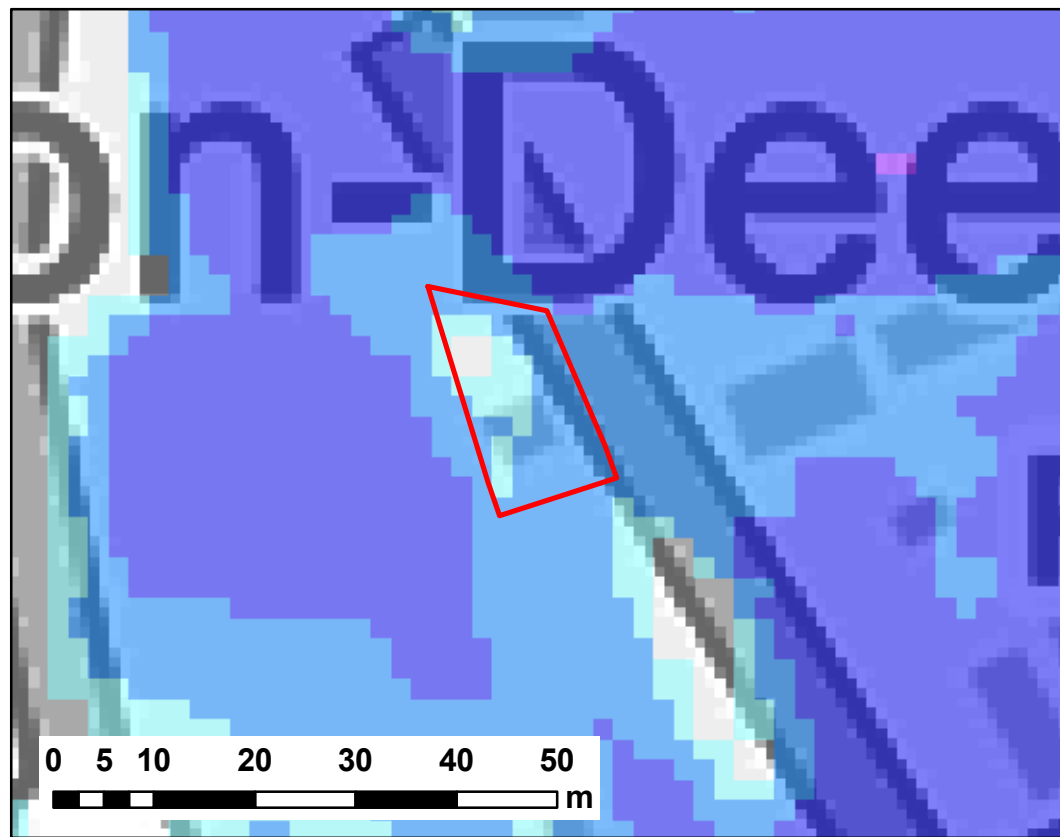
(UNLESS STATED OTHERWISE)

PLOT NAME:

w10866-B1_Q100_D

REV:	
------	--

100



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

- Site Boundary
- Breach 2 - Old Dee Bridge

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

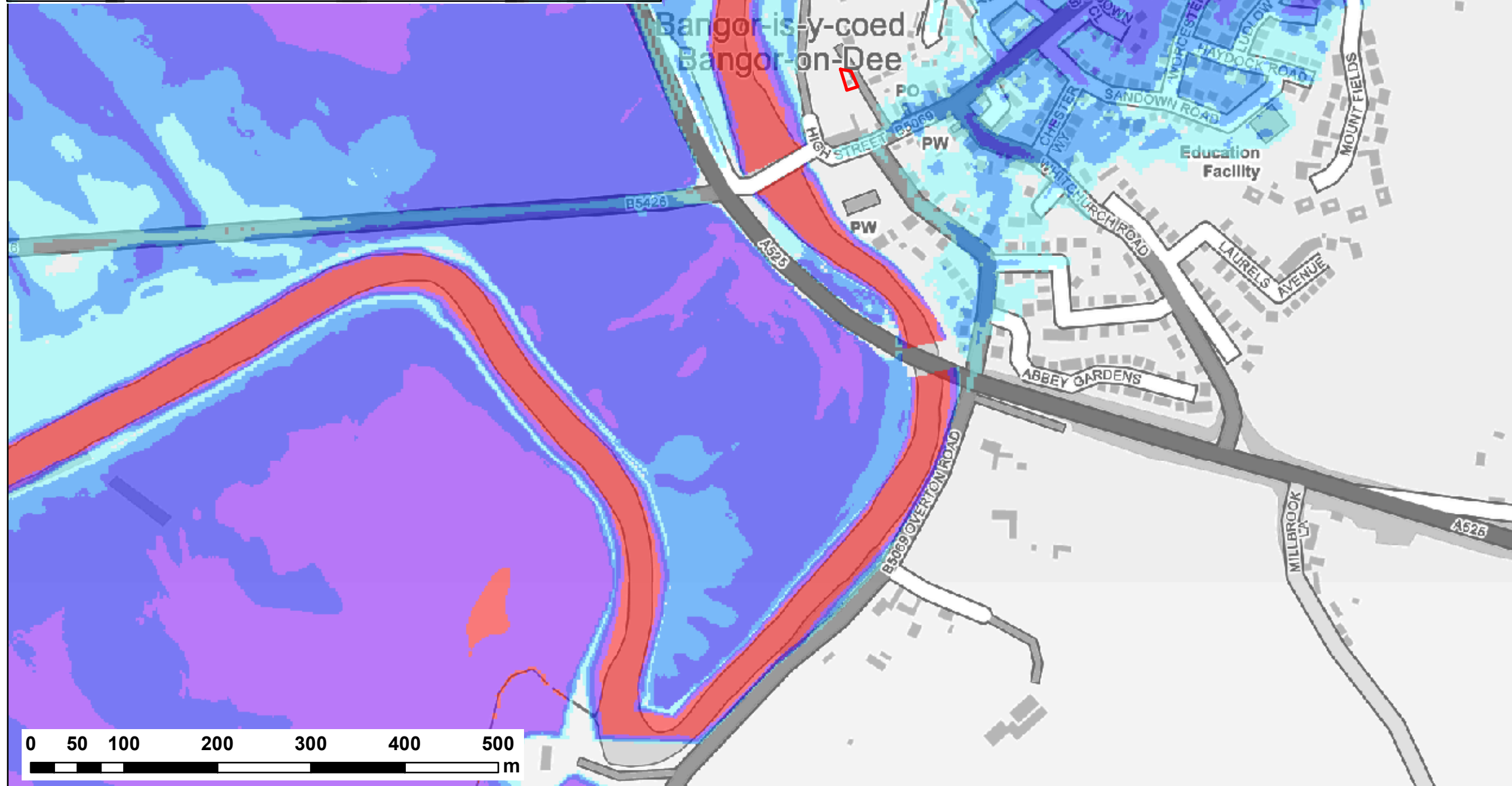
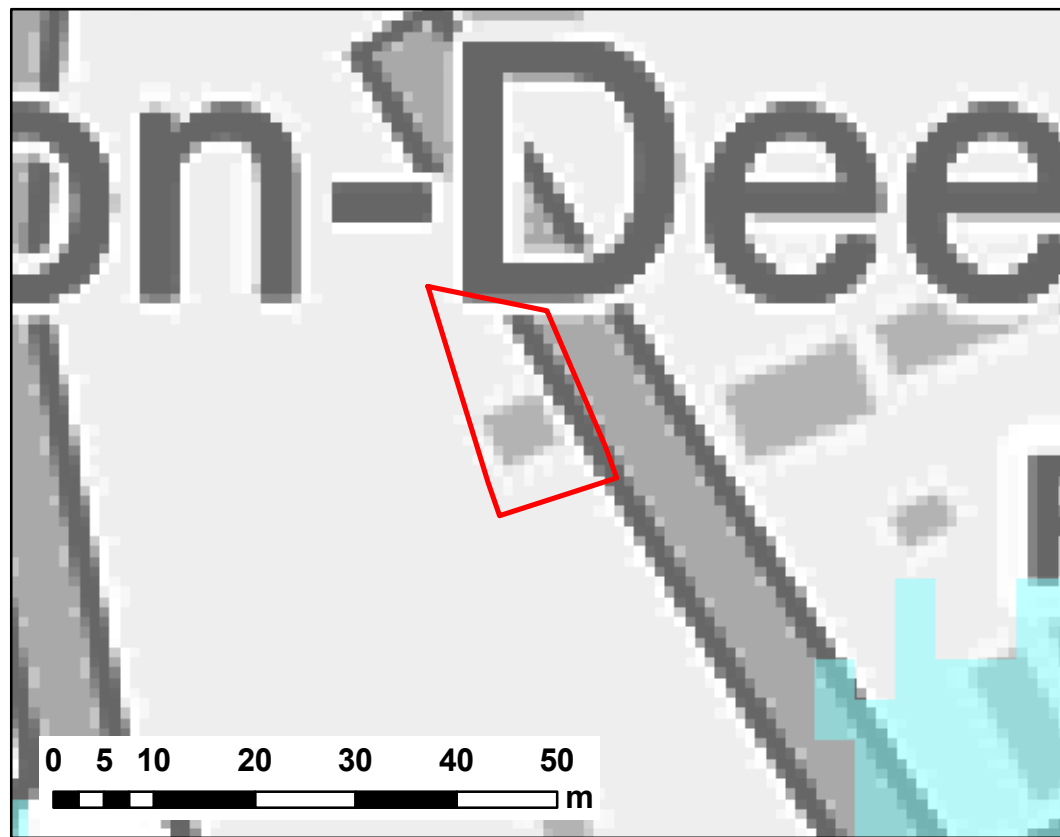
CLIENT:
WREXHAM LAGER BEER COMPANY LTD

waterco
www.waterco.co.uk

SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SITE LAYOUT
BREACH - OLD DEE BRIDGE

PLOT STATUS: FINAL			DATE: 22/02/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-B2_Q100_D			REV: -



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

- Site Boundary
- Breach 3 - The Graig

Maximum Flood Depth (m)

- 0 - 0.3
- 0.3 - 0.6
- 0.6 - 1.2
- 1.2 - 2.4
- > 2.4

CLIENT:
WREXHAM LAGER BEER COMPANY LTD

waterco
www.waterco.co.uk

SCHEME:
HIGH STREET, BANGOR ON DEE

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SITE LAYOUT
BREACH - THE GRAIG

PLOT STATUS: FINAL			DATE: 22/02/2019
DRAWN: CM	CHECKED: JR	APPROVED: VG	PLOT SCALE @ A3: 1:5,000 (UNLESS STATED OTHERWISE)
PLOT NAME: w10866-B3_Q100_D			REV: -



**Cyfoeth
Naturiol
Cymru
Natural
Resources
Wales**

Ein cyf/Our ref: CAS-76855-J3Z6

Eich cyf/Your ref:

Ebost/Email: northplanning@cyfoethnaturiolcymru.gov.uk

Ffôn/Phone: 03000 65 4099

Date: 01/02/2019

FAO Johanne Williams (Waterco):

Dear Johanne,

PRELIMINARY PRE-APPLICATION ADVICE

DEVELOPMENT – CONVERSION TO TWO HOLIDAY UNITS.

LOCATION – BUCK HOUSE HOTEL, HIGH STREET, BANGOR ON DEE

Thank you for consulting Natural Resources Wales about the above proposed development at pre-application stage.

We have considered your enquiry in relation to our Development Planning [checklist](#). We advise that the following matters are relevant to the proposed development and suggest you consider these further prior to the submission of any planning application:

Flood Risk

The application site lies entirely within Zone C1 as defined by the Development Advice Map referred to under TAN 15 Development and Flood Risk (July 2004), and is shown to be located within the 1% (1 in 100) annual exceedance probability (AEP) event flood outline on the NRW Flood Risk Map. The site is located approximately 90 m east of the River Dee. The site lies within the historic flood map outline for the River Dee flood event in 1964, which occurred due to overtopping of defences.

The proposal included within this pre-application request is for a small extension and change in use of an existing garage to form two 1 bedroom holiday accommodation units. The proposals would therefore result in two new 'highly vulnerable' units being located in Zone C1.

Given the nature of the proposals and the C1 designation a Flood Consequences Assessment (FCA) would need to be prepared in support of a planning application at this site.

The FCA for the proposed development would need to demonstrate compliance with the requirements of section 6, 7 and Appendix 1 of TAN15. The FCA would also need to take the following into consideration:

- Technical guidance documents OGN100, GN008, and GN028 modelling for flood consequences assessments available on our website:

<https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/development-and-flood-risk/?lang=en>

- Welsh Government guidance 2016 CL-03-16 for climate change allowances and the lifetime of the development:

<https://gov.wales/topics/planning/policy/policyclarificationletters/2016/cl-03-16-climate-change-allowances-for-planning-purposes/?lang=en>

The FCA would need to assess the impacts from all sources of flood risk over the lifetime of development. Fluvial flood risk from the River Dee will need to be assessed for the 1% AEP event with an allowance for climate change (for assessing compliance with A1.14 of TAN15) and the 0.1% AEP event (for assessing compliance with A1.15 of TAN15). The site benefits from the presence of a raised earth embankment defence located to the north / east of the site, and we would therefore expect the impact of a breach in the River Dee defences to be assessed, to quantify the impact of defence failure at the site. We would also expect an assessment of a potential blockage to the Old Dee bridge to be assessed within the FCA, including the impact a blockage could have on increasing the probability of a breach event.

There is an existing model available for the River Dee adjacent to Bangor-on-Dee, which may be used as a starting point for further assessment. This can be requested through datadistribution@cyfoethnaturiolcymru.gov.uk. The FCA should consider any limitations of the existing 2012 Bangor-on-Dee model, and should assess whether any updates are required in order to refine the model (e.g. updates to hydrology or floodplain topography).

Please note the view expressed in this letter is a response to a pre-planning enquiry only. We trust these comments will prove helpful but they should not set a precedent for any future Natural Resources Wales' response to any formal application for planning permission or other legal consent. Such applications shall be assessed on the information submitted and regulations of relevance at that time. The details contained in this letter are based on the information available to date.

If you have any queries on the above please do not hesitate to contact us.

Yn gywir / Yours sincerely,

Daniel Davies
Cynghorydd Cynllunio Datblygu / Development Planning Advisor
Cyfoeth Naturiol Cymru / Natural Resources Wales



**Cyfoeth
Naturiol
Cymru
Natural
Resources
Wales**

Ein cyf/Our ref: CAS-73711-B7S9

Eich cyf/Your ref: P/2018/1028

Ebost/Email: northplanning@cyfoethnaturiolcymru.gov.uk

Ffôn/Phone: 03000 65 4099

19/12/2018

For the attention of Kevin Hughes:

Dear Kevin,

TOWN AND COUNTRY PLANNING ACT 1990
DEDDF CYNLLUNIO GWLAD A THREF 1990

PROPOSAL:

**EXTENSION AND CONVERSION OF EXISTING REAR GARAGE TO FORM 2 NO. ONE
BEDROOM HOLIDAY ACCOMMODATION UNITS**

LOCATION:

The Buck House Hotel, High Street, Bangor-On-Dee, Wrexham

Thank you for consulting Natural Resources Wales (NRW) about the above, which was received on 11/12/2018.

We have significant concerns with the proposed development as submitted. We recommend that you should only grant planning permission if the scheme can meet the following requirements. We would object if the scheme does not meet these requirements.

Requirement 1: FCA is submitted which demonstrates compliance with the requirements of A1.14, A1.15 and A1.12 of TAN15.

Flood Risk

The application site lies entirely within Zone C1 as defined by the Development Advice Map referred to under TAN 15 Development and Flood Risk (July 2004), and is shown to be located within the 1% (1 in 100) annual exceedance probability (AEP) event flood outline on the NRW Flood Risk Map. The site is located approximately 90 m east of the River Dee. The site lies within the historic flood map outline for the River Dee flood event in 1964, which occurred due to overtopping of defences.

We note that the proposals are for the extension and change in use of an existing garage (which is used for storage purposes) to form two 1 bedroom holiday accommodation units. The proposals would therefore result in two new 'highly vulnerable' units being located in Zone C1.

Given the nature of the proposals and the C1 designation a Flood Consequences Assessment (FCA) needs to be prepared in support of this application. In the absence of a FCA, we therefore raise significant concerns with this application.

The FCA for the proposed development will need to demonstrate compliance with the requirements of section 6, 7 and Appendix 1 of TAN15. The FCA will also need to take the following into consideration:

- Technical guidance documents OGN100, GN008, and GN028 modelling for flood consequences assessments available on our website:
<https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/development-and-flood-risk/?lang=en>
- Welsh Government guidance 2016 CL-03-16 for climate change allowances and the lifetime of the development:
<https://gov.wales/topics/planning/policy/policyclarificationletters/2016/cl-03-16-climate-change-allowances-for-planning-purposes/?lang=en>

The FCA would need to assess the impacts from all sources of flood risk. Fluvial flood risk from the River Dee will need to be assessed and given that the site benefits from the presence of a raised earth embankment defence located to the north / east of the site, we would expect the impact of a breach in the River Dee defences to be assessed, to quantify the impact of defence failure at the site. We would also expect an assessment of a potential blockage to the Old Dee bridge to be assessed within the FCA, including the impact a blockage could have on increasing the probability of a breach event.

The design events that should be considered are the 1% AEP breach/blockage event with an allowance for climate change for assessing compliance with A1.14 of TAN15 and the 0.1% (1 in 1,000) AEP breach/blockage event for assessing compliance with A1.15 of TAN15. The FCA would need to demonstrate that the proposals would not result in any increased flood risk elsewhere, in accordance with the requirements of A1.12 of TAN15.

There is an existing model available for the River Dee adjacent to Bangor-on-Dee, which may be used as a starting point for further assessment. This can be requested through datadistribution@cyfoethnaturiolcymru.gov.uk. The FCA should consider any limitations of the existing 2012 Bangor-on-Dee model, and should assess whether any updates are required in order to refine the model (e.g. updates to hydrology or floodplain topography).

Based on the above, we raise significant concerns and request that a FCA is submitted which demonstrates compliance with the requirements of A1.14, A1.15 and A1.12 of TAN15.

If, contrary to the requirements of TAN15, your Authority is minded to grant permission contrary to our advice, we should be informed of all matters that influence this decision, prior to granting permission, allowing sufficient time for further representations to be made.

Protected Species

We note that there is no information about protected species with the application and, therefore, are assuming that your Authority has screened the application and concluded that there is not a reasonable likelihood of protected species being present.

Please do not hesitate to contact us if you require further information or clarification on any of the above.

Our comments above only relate specifically to matters that are listed in our 'Consultation Topics' document (September 2018) which is published on our website: (<https://cdn.naturalresources.wales/media/686847/dpas-consultation-topics-august-2018-eng.pdf?mode=pad&rnd=131819256840000000>). We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests, including environmental interests of local importance.

Yn gywir / Yours sincerely,

Daniel Davies

Daniel Davies

Cynghorydd Cynllunio Datblygu / Development Planning Advisor

Cyfoeth Naturiol Cymru / Natural Resources Wales

AnnS Jones

From: Anna Irwin
Sent: 20 December 2018 12:17
To: planning_admin
Cc: Kevin Hughes
Subject: FW: P/2018/1028 - The Buck, Bangor

Please can you scan to file P/2018/1028.

Many Thanks

Anna

From: Anna Irwin
Sent: 20 December 2018 12:17
To: Kevin Hughes
Subject: P/2018/1028 - The Buck, Bangor

Kevin,

I raise no objections to the principle of conversion of the existing garage to guest accommodation. The site is located within the Bangor-on-Dee Conservation Area, set far back within the carpark of the public house. The existing building is of limited architectural or historic interest and the proposed alterations to the public face of the building offer a relatively sympathetic change, subject to further approval of window details.

The drawings submitted are however incorrect in respect of the roof construction. The rear elevation, having been extended, will have a gable end rather than a pitched roof. Drawings will need to be amended accordingly. I would also query whether the shallow pitch of the extension will be able to accommodate a slate roof. If not an alternative roof design will need to be considered.

Kind Regards

Anna

Anna Irwin

Conservation and Environment Lead | Arweiniwr Cadwraeth a Amgylchedd



01978 298760

Planning Services, Community Wellbeing & Development, 16 Lord Street, Wrexham, LL11 1LG

Adran Cynllunio, Pennaeth Adran Lles Cymuned a Datblygiad, 16 Stryt yr Arglwydd, Wrecsam, LL11 1LG

wrexham.gov.uk | wrecsam.gov.uk

twitter.com/wrexhamcbc | twitter.com/cbswrecsam

facebook.com/wrexhamcouncil | facebook.com/cyngorwrecsam



MEMORANDUM

From: Ian Jones Public Protection
Service Manager

To: David Williams Planning
Control Manager

Our Ref:

Your Ref: P/2018/1028

Date: 18-12-2018

Town and Country Planning Act 1990

Town and Country Planning (General Development Procedure) Order 1996

Re: P/2018/1028, THE BUCK HOUSE HOTEL HIGH STREET BANGOR ON DEE WREXHAM

EXTENSION AND CONVERSION OF EXISTING REAR GARAGE TO FORM 2 NO. ONE BEDROOM HOLIDAY ACCOMMODATION UNITS

Contaminated Land - No Comments

No Comments

A22NA - MINOR DEVELOPMENT CONSTRUCTION NOISE

All works in relation to the implementation of this permission, including deliveries to and /or leaving the site, should be undertaken only between the hours of 07.30 to 18.00 Monday to Friday, 08.00 to 14.00 on a Saturday, and at no time on a Sunday or a Bank Holiday. Outside these times, any works which are audible beyond the site boundary have the potential to cause unreasonable disturbance to neighbouring premises.

The applicant is advised that the Council has the option to control construction noise by serving a Control of Pollution Act 1974, Section 60, Notice where deemed necessary, and failure to comply with such a Notice can result in prosecution.

The applicant should adhere to the times given above wherever possible. For further information and advice regarding construction noise please contact the Council's Environment and Planning Department on 01978 292040.

A23N - BURNING OF WASTE ADVICE

Burning of waste generated from construction activities is not considered to be an appropriate method of disposal and action may be taken as follows:

- Under the Environmental Protection Act 1990 anyone found disposing of construction site waste by burning is likely to be in breach of their duty of care with regard to waste disposal;
- Under the same Act an abatement notice may be served where smoke is judged to be causing a nuisance to neighbouring properties. Failure to comply with the requirements of such a notice can result in prosecution;
- Under the Clean Air Act 1993 it is an offence for a commercial activity to burn anything that gives rise to dark smoke.

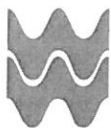
To prevent offences under the above named Acts there should be no bonfires on the site, to include the prohibition of the burning of cleared vegetation. The applicant should contact the Council's Environment and Planning Department on 01978 292040 for further advice and information.

A25N - DUST MANAGEMENT ADVICE (SCHEME NOT REQUIRED BY CONDITION)

The Applicant is advised that under the Environmental Protection Act 1990, dust from construction and/or demolition activities can be judged to be causing a statutory nuisance to neighbouring properties. A legal notice can be served requiring that any dust nuisance is abated and failure to comply with the requirements of the notice can result in prosecution. The applicant should contact the Council's Environment and Planning Department on 01978 292040 for further advice and information.

.....

Head of Planning and Environment



Dŵr Cymru
Welsh Water

Developer Services
PO Box 3146
Cardiff
CF30 0EH

Tel: +44 (0)800 917 2652
Fax: +44 (0)2920 740472
E.mail: developer.services@dwrcymru.com

Gwasanaethau Datblygu
Blwch Post 3146
Caerdydd
CF30 0EH

Ffôn: +44 (0)800 917 2652
Ffacs: +44 (0)2920 740472
E.bost: developer.services@dwrcymru.com

Wrexham County Council
16 Lord Street
WREXHAM
LL11 1LG

Date: 13/12/2018
Our Ref: PLA0039163
Your Ref: P/2018/1028

Dear Sir

Grid Ref: SJ3886245535 338862 345535

Site: Rear of the Buck House Hotel, High Street, Bangor on Dee

Development: Extension & conversion of existing garage to form 2no 1 bedroom holiday accommodation units

We refer to your planning consultation relating to the above site, and we can provide the following comments in respect to the proposed development.

Having reviewed the proposal, we note it is proposed for foul flows from the proposed development to be disposed of via the public sewerage system and surface water is to be discharge into a soakaway system. These drainage arrangements are acceptable in principle. However, given the omission of a detailed drainage plan/ layout, we would kindly request that if you are minded to grant Planning Consent for the above development that the following **Condition and Advisory Notes** are included within the consent to ensure no detriment to existing residents or the environment and to Dwr Cymru Welsh Water's assets.

SEWERAGE

Condition

No development shall commence until a drainage scheme for the site has been submitted to and approved in writing by the local planning authority. The scheme shall provide for the disposal of foul, surface and land water, and include an assessment of the potential to dispose of surface and land water by sustainable means. Thereafter the scheme shall be implemented in accordance with the approved details prior to the occupation of the development and no further foul water, surface water and land drainage shall be allowed to connect directly or indirectly with the public sewerage system.

Reason: To prevent hydraulic overloading of the public sewerage system, to protect the health and safety of existing residents and ensure no pollution of or detriment to the environment.



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

We welcome correspondence in
Welsh and English

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

Rydym yn croesawu gohebiaeth yn y
Gymraeg neu yn Saesneg

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

Advisory Notes

The applicant may need to apply to Dwr Cymru / Welsh Water for any connection to the public sewer under S106 of the Water Industry Act 1991. 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 Gravity 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

The applicant is 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 us in dealing with the proposal the applicant may contact Dwr Cymru Welsh Water. Under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

Our response is based on the information provided by your application. Should the proposal alter during the course of the application process we kindly request that we are re-consulted and reserve the right to make new representation.

If you have any queries please contact the undersigned on 0800 917 2652 or via email at developer.services@dwrcymru.com

Please quote our reference number in all communications and correspondence.

Yours faithfully,



Alaw Jones
Development Control Officer
Developer Services



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

We welcome correspondence in
Welsh and English

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

Rydym yn croesawu gohebiaeth yn y
Gymraeg neu yn Saesneg

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

MEMORANDUM



From: Planning Control Manager

To: Head of Environment and Planning

Our Ref: EP/DC/P/2018/1028

Your Ref: P/2018/1028

Date: 11th December 2018

TOWN AND COUNTRY PLANNING ACT 1990

TOWN AND COUNTRY (GENERAL DEVELOPMENT PROCEDURE) ORDER 1995

Location: O. S Grid Ref: 388 454 The Buck House Hotel, High Street, Bangor on Dee, Wrexham.

Development: Extension and conversion of existing rear garage to form 2 no. one bedroom holiday accommodation units.

I refer to your consultation dated 11/12/2018 in respect of the above.

I cannot fully assess the application due to lack of information.

Please ask the applicant to provide the following:

- A suitably scaled plan indicating the existing 20 no. parking spaces within the existing car park plus the proposed spaces for the holiday accommodation. Please indicate how existing / proposed vehicles turn within the car park when full.
- Details of the total public floor space of the existing public house for parking assessment purposes

peter o'neill

pn Planning Control Manager

Johanne Williams

From: North Planning <NorthPlanning@cyfoethnaturiolcymru.gov.uk>
Sent: 08 February 2019 10:56
To: Johanne Williams
Subject: RE: W10866 - Buck House Hotel, High Street, Bangor on Dee (Pre-App Free)
W10866 - NRW Response NRW:03591122

Hi Johanne,

Thank you for your email.

In respect to the blockage allowances, we would refer you to our [OGN100 document](#), which outlines the guidance in respect to bridge blockage allowances.

In respect to the potential impact a blockage could have on the likelihood of a breach, we would expect you to comment on how a blockage could increase the risk of a breach upstream of the old bridge, as this would help justify the breach location chosen. This is referred to in the modelling report provided as part of the data request that was submitted for this site. We would not expect you to undertake a detailed combined assessment of a modelled blockage and breach.

Please note that any additional advice on this site would fall under our charged discretionary planning advice service.

Thanks,

Daniel

----- Original Message -----

From: Johanne Williams;
Received: Thu Feb 07 2019 10:53:51 GMT+0000 (GMT Standard Time)
To: North planning; North Planning Mailbox Queue; North Planning ;
Subject: RE: W10866 - Buck House Hotel, High Street, Bangor on Dee (Pre-App Free) W10866 - NRW Response NRW:03591122

Hi Daniel,

Thank you for the prompt pre-planning response.

We have now received the Products 5 and 6 flood data for the site, in which we have received data for the 100 + CC + 80% blockage. Please could you confirm that consideration an 80% blockage would be acceptable to NRW in this situation. The Product 5 states; *The design event simulations undertaken show that there are only relatively small changes in predicted peak water levels within the River Dee... The limited change is largely as a result of the size of the structure and the bypass route via the floodplain on the left hand bank that limit any rise in water level. Similarly, there is no visible impact on the predicted flood extents, as the flooding is constrained topographically although local water levels on the floodplain are increased by up to 110mm for the high blockage scenario (80%) during the 1% and 15 plus climate change events... This assessment has shown the model (and resultant flood risk) to be relatively insensitive to reasonable degrees of blockage at Old Dee Bridge. As stated above this is largely a result of the overall size of the structure (that means that it is very unlikely to become fully blocked) and the flow route around the bridge*

on the left hand bank. With the exception of the increase in the loading on the embankment, there is no direct increase in the flood risk to Bangor on Dee as a result of blockage at this structure.

Furthermore, please could you confirm if a qualitative assessment would be acceptable in considering the impact of the blockage on a breach event.

I look forward to hearing from you.

Kind regards,

Johanne Williams LLB (Hons) PgDip MCIWEM
Environmental Consultant

Office: 01824 702220



Assessment, Modelling, Design
Ruthin - Chester - Manchester - London

For email confidentiality, limitations and company details please see our disclaimer webpage. Registered in Wales under company no. 3577754. Waterco Ltd, Eden Court, Ruthin LL15 1NJ. Please click for our GDPR policy.

From: North Planning <NorthPlanning@cyfoethnaturiolcymru.gov.uk>
Sent: 01 February 2019 10:20
To: Johanne Williams <Johanne.Williams@waterco.co.uk>
Subject: W10866 - Buck House Hotel, High Street, Bangor on Dee (Pre-App Free) W10866 - NRW Response NRW:03591122

Dear Johanne

Please find attached our response to the above application, if you have any queries please do not hesitate to contact me.

Kind Regards
Daniel Davies

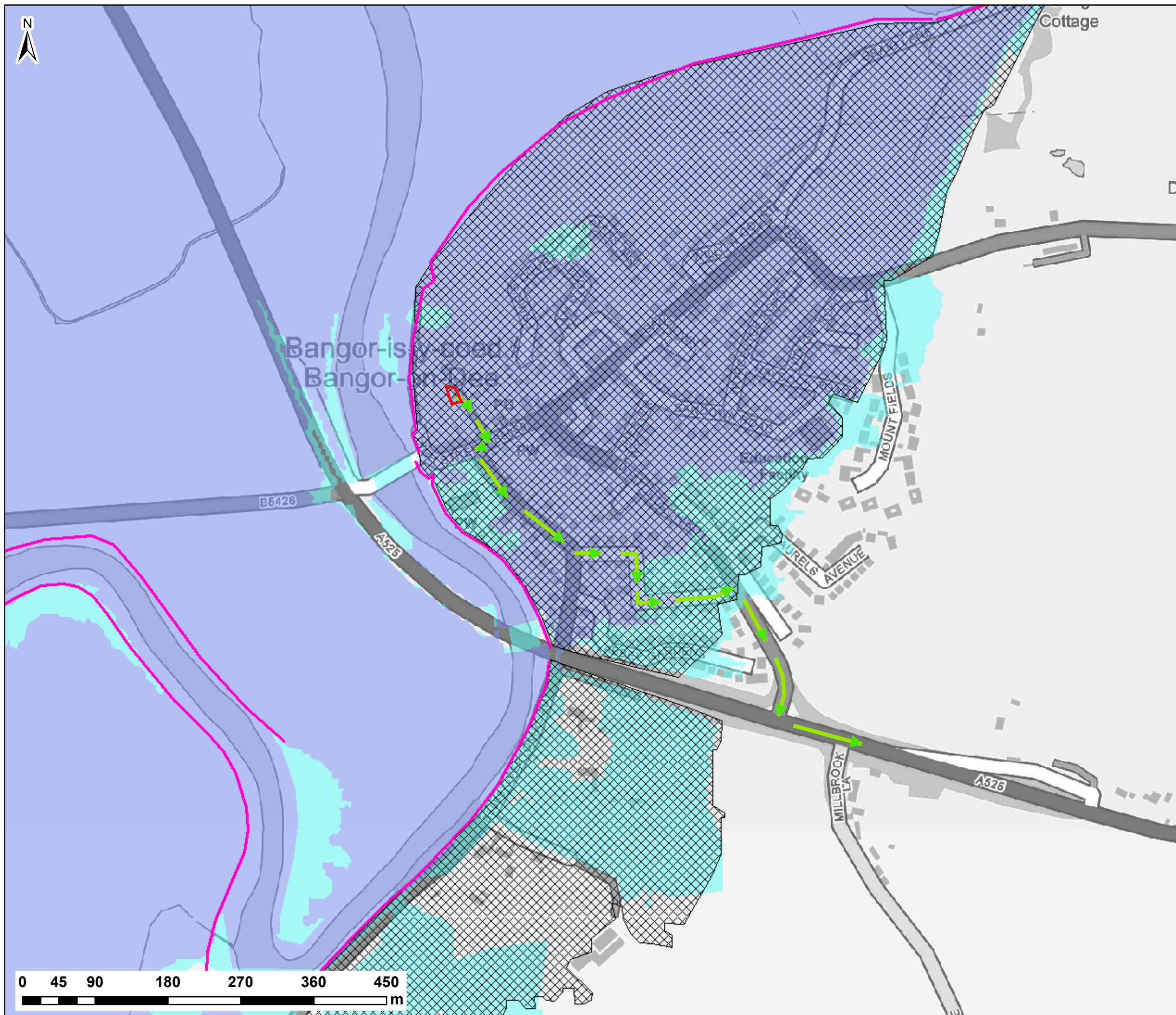
Tîm Cynllunio Datblygu / Development Planning Team
Cyfoeth Naturiol Cymru / Natural Resources Wales

Ffôn / Tel: 03000 654099
www.cyfoethnaturiolcymru.gov.uk / www.naturalresourceswales.gov.uk

Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy / Proud to be leading the way to a better future for Wales by managing the environment and natural resources sustainably.

**Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi /
Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.**

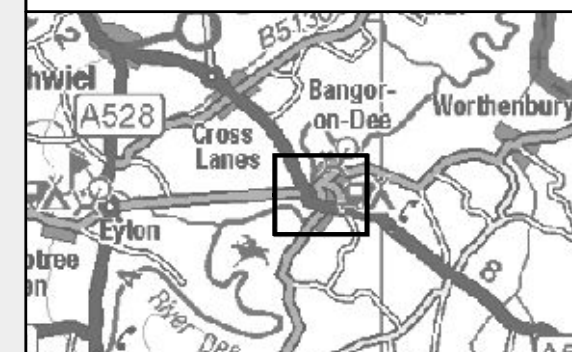
Appendix F Evacuation Route Plan



NOTES:
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

-  Site Boundary
-  Flood Evacuation Route
-  NRW Flood Defences
-  Areas Benefitting from Defences
-  NRW Flood Zone 3
-  NRW Flood Zone 2



CLIENT:

**WREXHAM LAGER BEER
COMPANY LTD**



www.waterco.co.uk

SCHEME:

**HIGH STREET,
BANGOR ON DEE**

PLOT TITLE:

**FLOOD EVACUATION PLAN
FEBRUARY 2019**

PLOT STATUS:

FINAL

DATE:

22/02/2019

DRAWN:

CM

CHECKED:

JR

APPROVED:

VG

PLOT SCALE @ A3:

1:4,500

(UNLESS STATED OTHERWISE)

PLOT NAME:

w10866-Flood_Evacuation_Plan

REV:

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