

Flood Consequence Assessment

Lidl Lampeter



Presented to: Lidl Great Britain Limited

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Report Details

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Report Title	Flood Consequence Assessment
Site Address	Land off Cwmann Terrace, Cwmann, Lampeter SA48 8DR
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Quality Assurance

Issue No.	Status	Issue Date	Comments	Authors	Technical Reviewers	Authorised (September 2026)
5	DRAFT	10 th September 2026	Updated for submission for Pre-application Consultation (PAC) for new planning application	Cameron Leighton Consultant Liam Stewart Principal	Luke Bland Principal Rachel Shepherd Associate Director	Rachel Shepherd Associate Director

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Reference of Terms

Canal Failure

Canal failure can include a breach or overtopping of a canal system due to the effects of a high intensity rainfall event or structural failure that is not associated with a rainfall event. Such failure can be very dangerous as it can involve the rapid release of large volumes of water at high velocity, however, it is typically limited to reaches of canal that are raised above the surrounding ground level on one or both side and where watercourses or other structures pass beneath the canal. The size and nature of canals themselves can also have a hydraulic control on the mechanisms of flooding associated with a failure, resulting in a rapid peak in flow followed by a gradual reduction as the flow becomes restricted by the capacity of the canal itself to rapidly pass flow to the breach or failure point.

Fluvial Flooding

Fluvial flooding typically occurs when a river's capacity is exceeded, and the excess water overtops the riverbanks. It can also occur when the watercourse has a high level downstream, perhaps due to structures or blockage, thus limiting conveyance. This creates a back-up of water which can overtop the banks. Typical flooding issues occur when the natural floodplain has been urbanised, and the river has been confined.

Groundwater Flooding

Groundwater flooding is caused by the emergence of water from beneath the ground at either point or diffuse locations when the natural level of the water table rises above ground level. This can result in deep and long-lasting flooding of low-lying or below-ground infrastructure such as underpasses and basements. Groundwater flooding can cause significant damage to property, especially in urban areas, and can pose further risks to the environment and ground stability.

Reservoirs Failure

Reservoir failure can be a particularly dangerous form of flooding as it results in the sudden release of large volumes of water that can travel at high velocity. This can result in deep and widespread flooding, potentially resulting in significant damage. The likelihood of reservoir flooding occurring is generally extremely low given that all large reservoirs are managed in accordance with the Reservoirs Act 1975. Under the Reservoirs Act 1975, a large, raised reservoir is defined as one that holds over 10,000 cubic metres of water above the level of the surrounding land. The EA's online reservoir inundation map illustrates the maximum flood extents that could potentially occur in the event of a reservoir failure.

Sewer Flooding

Flooding from sewers primarily occurs when flow entering a system exceeds available capacity or if the network capacity has been reduced through blockage or collapse. In the case of surface water sewers that discharge to watercourses, the same effect can be caused as a result of high water levels in the receiving watercourse. As a result, water can begin to surcharge the sewer network, emerging at ground level through gullies and manholes and potentially causing flooding to highways and properties. If this occurs flooding can represent a significant hazard to human health due to the potential for contaminants in flood water.

Surface Water Runoff

Surface water runoff is defined as water flowing over the ground that has not yet entered a drainage channel or similar. It usually occurs as a result of an intense period of rainfall which exceeds the infiltration capacity of the ground. Typically, runoff occurs on sloping land or where the ground surface is relatively impermeable. The ground can be impermeable either naturally due to the soil type or geology, or due to development which places impervious material over the ground surface (e.g. paving and roads).

Tidal Flooding

Tidal flooding is caused by high tides coinciding with a low-pressure storm system which raises sea and tidal water levels, overwhelming coastal and river defences. This may be made worse by gale force winds blowing the raised body of water up tidal river basins some distance from the coast, due to floodwater being forced up the tidal reaches of rivers and estuaries. Such flooding may become more frequent in future years due to rising sea levels.

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1.0 Introduction

1.1 Appointment

- 1.1.1 Lucion Delta-Simons Ltd (“Lucion”) was instructed by Lidl Great Britain Limited (the “Client”) to carry out a Flood Consequences Assessment (FCA) of Land off Cwmann Terrace, Cwmann, Lampeter SA48 8DR (the “Site”) for the development of a supermarket with associated parking and access.

1.2 Project Understanding

- 1.2.1 The aim of the Scheme is to provide a new food store and associated parking for the town of Lampeter.
- 1.2.2 The Site is shown to be predominantly located within Flood Zone 3 (High Probability) and Flood Zone 2 (Medium Probability) on the NRW Flood Map for Planning therefore a FCA is required to support the development.
- 1.2.3 Lucion have also produced a Detailed Drainage Strategy (DDS) under the Ref:119796.642269 which is attached in Appendix J. The DDS has been approved by the Sustainable Drainage Approval Body (SAB) (application SAB/00691) and should be read in conjunction with the FCA.
- 1.2.4 Hydraulic modelling has been undertaken to support this FCA.

1.3 Aim and Objectives

- 1.3.1 The aim of this FCA is to assess the level of risk of flooding to the scheme and identify the need for mitigation and/or design measures that ensure the development will be safe from flooding and will not increase the risk of flooding elsewhere ensuring alignment with Technical Advice Note (TAN) 15: development, flooding and coastal erosion (March 2026).

1.4 Scope of Works

- 1.4.1 To achieve the overall aim of this FCA, the following tasks have been undertaken:
- Assess flood risk from all sources using best available information, including review of NRW data and mapping, topography and historical records;
 - Outline sequential approach to site selection;
 - Assess previous relevant available third-party studies, local authority plans or strategies;
 - Advise on flood mitigation measures;
 - Assess residual risks;
 - Assess access and egress routes;
 - Advise on availability of flood warnings;
 - Assess compensatory storage requirements; and
 - Prepare FCA report.
- 1.4.2 This report takes into account the following national and local policies:
- Planning Policy Wales (Edition 12) (February 2024)¹;
 - Technical Advice Note (TAN) 15: development, flooding and coastal erosion (2026)²;

¹ <https://www.gov.wales/planning-policy-wales>

² <https://www.gov.wales/technical-advice-note-tan-15-development-flooding-and-coastal-erosion>

- CL-03-16 Flood Consequence Assessments: Climate change allowances³; and
- Carmarthenshire County Council Local Development and Planning Policies.

1.5 Sources of Information

1.5.1 The following sources of information have been reviewed and assessed for the purpose of this FRA:

- Data sourced from Natural Resource Wales (model data),
- Topographic survey of the surrounding land and local watercourses commissioned to support the Scheme,
- NRW Flood Map for Planning⁴
- British Geological Society (BGS) Interactive Map⁵;
- MAGIC Interactive Map⁶;
- Carmarthenshire & Pembrokeshire Council Strategic Flood Consequences Assessment (2019 SFCA);
- South West Wales Strategic Flood Consequences Assessment (2022 SFCA);
- Carmarthenshire Council Local Flood Risk Management Strategy (2024 LFRMS);
- Remada Geo Consultants Phase 1 Site Investigation & Preliminary Risk Assessment REF: 1304.01.01, August 2024 (2024 SI&PRA).

1.6 Project Limitations and Assumptions

- 1.6.1 The hydraulic model for this FCA is subject to a final review and approval by NRW. Therefore, modelled outputs utilised within this assessment may be subject to minor change. Further updates to the model (if required) will be made upon receipt of NRW comments. The assessment has been made using the latest model results. Further detail is included in the modelling report (Appendix H).
- 1.6.2 The wider Lucion limitations are contained within Appendix A.

³ <https://gov.wales/climate-change-allowances-and-flood-consequence-assessments-cl-03-16>

⁴ <https://flood-map-for-planning.naturalresources.wales/>

⁵ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

⁶ <http://www.magic.gov.uk/>

2.0 Site Description

2.1.1 The aim of this section of the report is to outline key environmental information associated with the baseline environment.

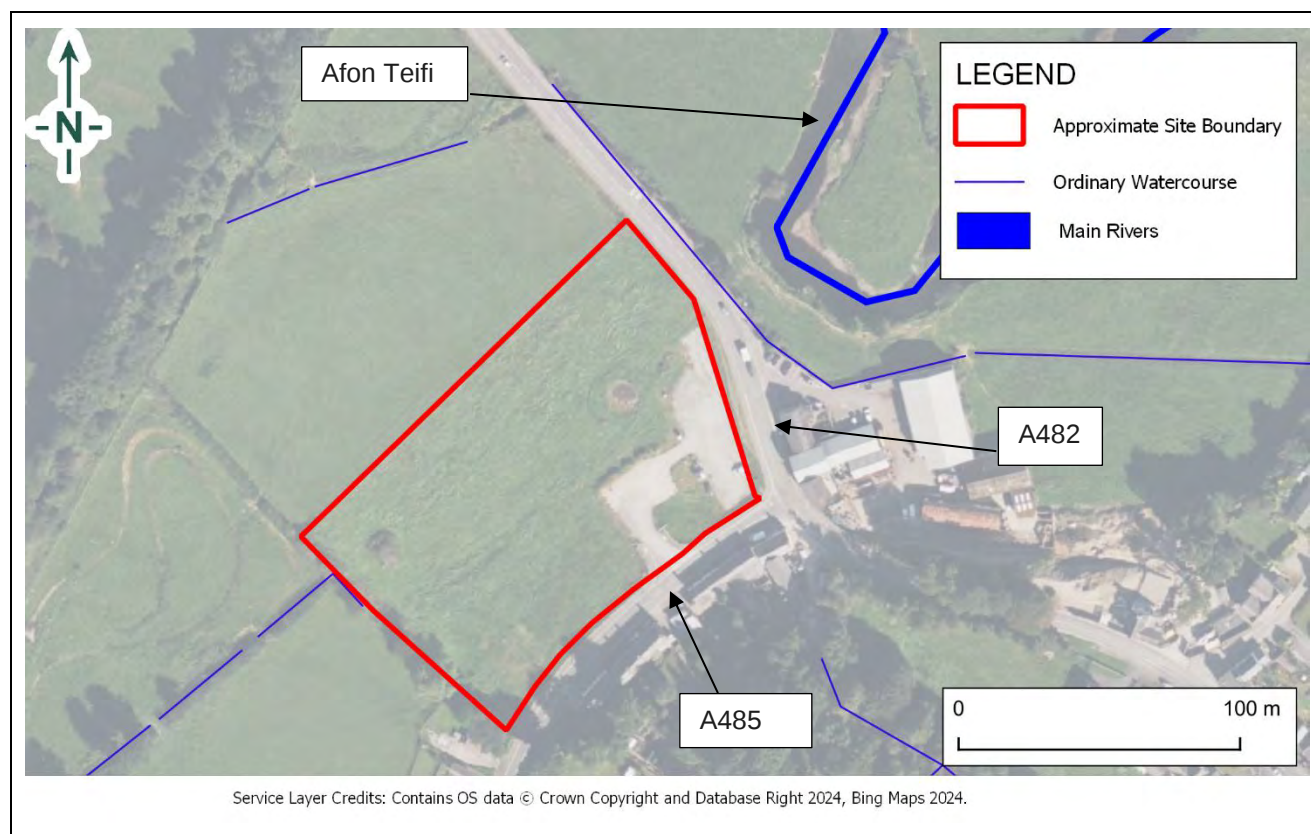


Figure 1: Site Location Plan

Co-ordinates	Centred approximately at E: 258210, N:247359.	Area (approx.)	1.45 ha
Site Location	The Site is located between the towns of Lampeter and Cwmann, approximately 860 m southeast from Lampeter Town Centre.		
Existing Site Conditions	Online mapping (including Google Maps/Google Streetview imagery, accessed September 2026) shows that the Site is a mix of greenfield land and previously developed brownfield land. The Site is bordered by greenfield land to the north and west, the A482 and the Afon Teifi beyond to the east and A485 with residential properties beyond to the south. Access to the Site is provided from the A485 to the south of the Site.		
Topography	A topographical survey has been undertaken by EMP Surveys Ltd in August 2024 and is included in Appendix B. The topographical survey shows that the Site slopes from 115.92 metres Above Ordnance Datum (m AOD) at the entrance to the Site from the A485 to 113.09 m AOD in the northwestern corner of the Site. The A482 lies at approximately 114.8 m AOD to the southeast and 114.3 m AOD to the northeast of the Site. The A485 lies at approximately 115.3 m AOD.		

Key Water Features	<u>Main River</u> Afon Teifi, a Main River (under the jurisdiction of NRW), is located approximately 30 m north of the Site at its closest point. Afon Teifi flows around the Site before flowing in a southerly direction. <u>Ordinary Watercourse</u> The nearest unnamed ordinary watercourse, referred to as Unnamed Ordinary Watercourse 1, is located along the western boundary of the Site. There is a second unnamed ordinary watercourse, referred to as Unnamed Ordinary Watercourse 2, located approximately 12 m north of the Site. Unnamed Ordinary Watercourse 1 and 2 are both tributaries of the Afon Teifi. Unnamed Ordinary Watercourse 1 joins the Afon Teifi approximately 300 m southwest of the Site. Unnamed Ordinary Watercourse 2 joins the Afon Teifi approximately 200 m northwest of the Site.
Geology	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 gravel, sand, silt and clay. The superficial deposits are identified as being underlain by Devils Bridge Formation consisting of mudstone and sandstone, interbedded. The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a Site-specific basis. There are no publicly available BGS boreholes in the vicinity of Site.
Hydrogeology	According to the NRW's Aquifer Designation data, obtained from MAGIC Map's online mapping [accessed September 2026], 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 Devils Bridge Formation is described as a Secondary B Aquifer. Secondary B Aquifers are 'predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers'. Soilscapes mapping [accessed September 2026] indicates that the Site lies in 'freely draining floodplain soils'.
Local Drainage	Sewer locations have been obtained from a survey provided by EMP Surveys Ltd. and are included in Appendix C. The plan shows that there is a 225 – 300 mm diameter surface water sewer within the A482. There are also historic sewers on Site that connect into the A485.
Proposed Development	The proposed development is for a raised food supermarket unit with associated access off the A482, new parking facilities, ramped access from both the car park and street level and associated drainage systems. Proposed development plans are included in Appendix D. The Store is to be located in the south of the Site which lies at approximately 114.5 m AOD with the car park in the north at approximately 113.15 m AOD. It is proposed for the Finished Floor Level (FFL) of the store to be set to 115.05 m AOD. With the car parking to be kept as close to grade as practicable. Some land regrading has been proposed to allow for sufficient gradients for drainage and safety purposes as per Lidl's standard design guidance.

3.0 Relevant Planning Policy and Guidance

3.1 Introduction

- 3.1.1 The aim of this section of the report is to discuss the main aspects of the local and national planning policies that are relevant to any proposed development on the Site and relevant guidance and legislation.

3.2 Assessment of Flood Risk

- 3.2.1 The flood risk from fluvial (Main Rivers) and coastal flooding is assessed using the Welsh Government TAN 15 and the NRW 'Flood Map for Planning'.

- 3.2.2 The NRW 'Flood Map for Planning' (FMfP) defines three zones of different flood risk:

- Zone 1 "Low probability of flooding" – This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river, sea flooding or surface water and small watercourses (<0.1%) including an allowance for climate change;
- Zone 2 "Medium probability of flooding" – This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river or surface water and small watercourse flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year including an allowance for climate change;
- Zone 3 "High probability of flooding" – This zone comprises land assessed as having a 1 in 100 or greater annual probability of river or surface water and small watercourse flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year including an allowance for climate change.

3.3 Planning Policy Wales

Development Vulnerability Classification

- 3.3.1 The proposed development is considered to be 'less vulnerable' development in accordance with Figure 4 of the TAN15.
- 3.3.2 TAN15 states that less vulnerable development can be considered in Flood Zone 2 and 3 subject to justification provided within an FCA proportionate to the nature and scale of the proposal and satisfying specific TAN15 acceptability criteria set out in Figures 5 and 6 of the document. The specific TAN15 'acceptability criteria' are assessed in the following sections.

3.4 Local Policy

- 3.4.1 The Carmarthenshire County Council Local Development Plan contains the following policies relating to flood risk and drainage.

Strategic Policy – SP 16: Climate Change

- 3.4.2 Avoid, or where appropriate, minimise the risk of flooding including the incorporation of measures (such as SuDS and flood resilient design);
- 3.4.3 Development proposals which are located within areas at risk from flooding will not be permitted unless they accord with the provisions of Planning Policy Wales TAN 15.
- 3.4.4 The potential impact of flood risk forms an important consideration in the assessment of the appropriateness of sites for inclusion within the LDP. In this regard, a precautionary approach will be adopted in the identification of sites for inclusion in the Plan. The consideration of any proposals in respect of flooding have regard to the provisions of PPW and TAN15: Development and Flood Risk which provides guidance on assessing developments at risk from flooding.

- 3.4.5 Proposals affected by flood risk will be required to submit a Flood Consequences Assessment as part of any planning application and the Council will consult with Natural Resources Wales (NRW). Where a site is in part impacted upon by flood risk, the developer will need to consider the impact of the risk on the developability of the remainder of the site. Where appropriate they should undertake the necessary evidential work (including a flood consequences assessment) to the satisfaction of NRW.

CCH4: Water Quality and Protection of Water Resources

- 3.4.6 Development proposals must make efficient use of water resources and, where appropriate, contribute towards improvements in water quality. Proposals will be permitted where they do not have an adverse effect upon water resources, water quality, fisheries, nature conservation, public access, or water related recreation use in the County.
- 3.4.7 Where appropriate, SuDS must be implemented with approval required through the Sustainable Drainage Approval Body (SAB).
- 3.4.8 Proposals will be supported if they promote the safeguarding of watercourses through ecological buffer zones or corridors, protecting aspects such as riparian habitats and species, water quality, and providing for flood plain capacity.
- 3.4.9 Development will only be permitted if it can be demonstrated that there is no adverse effect on the integrity of phosphorus sensitive riverine Special Areas of Conservation (SACs). In the hydrological catchment area designated for riverine SACs, development creating wastewater discharges will be required to demonstrate there is no increase in phosphorus levels in the SAC. This can be achieved through implementation of mitigation measures and associated supplementary planning guidance. Where evidence demonstrates that adverse effects on the integrity of river SAC can be avoided or offset using mitigation, these must be agreed with the Council on a case-by-case basis, in consultation with NRW.

3.5 Climate Change

Context

- 3.5.1 Planning Policy Wales (PPW) requires site specific FCA's accompanying planning applications to assess the risk of all sources of flooding to and from the development whilst also taking climate change into account.
- 3.5.2 NRW published updates to their climate change guidance in 2021 for fluvial flows and rainfall intensity. This indicates that climate change is likely to increase peak river flows, sea levels, rainfall intensity, wave height and wind speed in the future. Therefore, allowances need to be considered when developing schemes and associated mitigation, such as drainage strategies, flood alleviation measures, and flood storage and compensation areas to account for the enhanced severity and magnitude associated with future flood events.

Peak River Flow Allowances

- 3.5.3 The Proposed Development lies within the West Wales district. Table 1 shows the climate change allowances for the West Wales District for peak river flow allowances (last updated March 2026).

Table 1: West Wales District Peak River Flow Allowances

Allowance Category	Total Potential Change Anticipated for '2020s' (Present Day to 2039)	Total Potential Change Anticipated for '2050s' (2040 to 2069)	Total Potential Change Anticipated for '2080s' (2070 to 2125)
Upper End	20%	40%	70%
Central	10%	20%	35%

Peak River Flow for the Proposed Development

- 3.5.4 The Welsh Government 'Flood Consequence Assessments: Climate Change Allowances' guidance states that the central allowance for the relevant river basin district should be used as the 'design' event to assess the potential impact of climate change as part of an FCA and to inform design levels.

Table 2: Proposed Development Climate Change Assessment Criteria

Scheme	Criteria
River Basin District	West Wales
Management Catchment	Afon Teifi
Flood Zone	Zone 3
Flood Risk Vulnerability	Low Vulnerability
Lifetime of Development	50 years
Climate Change Allowance to be Assessed	35% Central (Design Event)

Peak Rainfall intensity Allowances for the Proposed Development

- 3.5.5 The predicted increase in the frequency and intensity of storm events as a result of climate change could increase the volumes and rates of water entering the surface water and foul drainage network. Table 3 shows the allowance which needs to be made for increases in peak rainfall intensity for a 1% AEP rainfall event which applies for all of Wales.

Table 3: 1% AEP Peak Rainfall Intensity Allowances

Climate change Epoch Allowance Category	Total Potential Change Anticipated for '2050s' (Present Day to 2060)	Total Potential Change Anticipated for '2080s' (2061 to 2125)
Upper End	35%	40%
Central	20%	30%

- 3.5.6 A DDS has been developed for the Proposed Development to support the planning application (see Appendix J). This sets out how allowances for increases in rainfall intensity (up to 40%) have been taken into account in the design approach for drainage ensuring runoff rates from the Proposed Development do not increase beyond runoff rates for the existing land use. The strategy sets out the approach to managing drainage via the use of SuDS and has been used to develop the drainage design for the scheme which has been approved by the SAB. As the strategy has been designed to the 40% CC allowance the design remains valid and has not been impacted by the March 2026 climate change guidance updates.

3.6 Consultation

- 3.6.1 It should be noted that the below consultation which was conducted in 2024 refers to the NRW Development Advice Maps which are no longer assessed as part of the latest TAN 15 (updated March 2026).

NRW

- 3.6.2 Flood risk considerations were examined in detail during the determination of the previous application.
- 3.6.3 A pre-planning opinion request was submitted to NRW in September 2024 with regards to requirements for the updated hydraulic model. Correspondence with NRW is outlined within Appendix K.
- 3.6.4 A pre-application consultation was submitted to NRW on the 30th of October 2024. A response was received on the 20th of November 2024, and the relevant comments are outlined below.
- 3.6.5 *'Our Flood Risk Map confirms the application site lies within Zone C2 of the Development Advice Maps (DAM) contained in Technical Advice Note (TAN) 15: Development and Flood Risk (2004). The Flood Map for Planning identifies the application site to be at risk of flooding and is within Flood Zone 2 and 3 Rivers.*
- 3.6.6 *Section 6 of TAN15 requires the Local Planning Authority (LPA) to determine whether the development at this location is justified. Therefore, we refer you to the tests set out in section 6.2 of TAN15. If the LPA consider the proposal meets the tests set out in criteria (i) to (iii), then the final test (iv) is for you, the applicant to demonstrate through the submission of a Flood Consequence Assessment (FCA) that the potential consequences of flooding can be managed to an acceptable level.*

- 3.6.7 *We have reviewed the FCA (dated October 2024) submitted in support of the application. We note that the FCA states: "Site specific hydraulic modelling is currently being progressed which will eventually feed into this FCA." Until the hydraulic modelling has been finalised and included within the FCA, we are unable to fully comment.*
- 3.6.8 *We also note that the FCA that the significant depths of flooding in the 1% Annual Probability of Flooding (APF) Scenario when climate change is considered, and these depths are outside the tolerances of Table A1.15 of TAN15.*
- 3.6.9 *To mitigate the risk to the store, we note the proposal is to be built on stilts. This is not a viable proposal as it is possible that any voids underneath the store may be filled and therefore may result in a loss of floodplain storage.*
- 3.6.10 *When formally consulted on this application by the planning authority, we would require a detailed assessment of flood risk to and from the development.'*
- 3.6.11 In its consultation response dated 14 April 2026, NRW confirmed that the 1D-2D hydraulic model prepared by Lucion was suitable to support the FCA and acknowledged that the proposed store would comply with the relevant flood criteria through the raised floor level and stilted construction design. NRW's concerns related principally to the operation and long-term management of the development, including flood warning procedures and maintenance of the flood storage void beneath the building.
- 3.6.12 Following receipt of NRW's comments, a meeting was held between representatives of NRW, CarneySweeney, Lidl and Lucion on 14 May 2026 to discuss the outstanding flood risk matters. During that meeting, NRW confirmed that, whilst it was required to formally record concerns where proposals did not strictly comply with TAN 15, it was not objecting to the application and that the ultimate planning judgement rested with the LPA.
- 3.6.13 The meeting further confirmed NRW's acceptance in principle of the proposed Flood Warning and Evacuation Plan ("FWEP") and the preparation of a maintenance strategy for the flood storage void beneath the store. NRW confirmed that these represented appropriate mechanisms for addressing the concerns raised within its consultation response.
- 3.6.14 NRW also acknowledged that the FCA modelling undertaken by Lucion had already gone a considerable way in assessing flood risk and accepted that additional modelling work was unlikely to materially alter the overall conclusions reached in the assessment.
- 3.6.15 Subsequently, NRW confirmed that the FCA was "in a good state" and could be relied upon to inform the preparation of any flood warning, evacuation or maintenance plans required by the LPA. NRW also confirmed that its previous response remained applicable."

Lead Local Flood Authority

- 3.6.16 A consultation request was submitted to the LLFA in September 2024. A response was received on 27/09/24 and is outlined below.
- 3.6.17 The council note that the Site is located within the floodplain of the Afon Teifi. The entire site is located with the C2 flood zone under the DAMs, with only a sliver of the Site's southern boundary with the A485 located outside of Flood Zone 2 and 3 of the updated Flood Map for Planning. The site is therefore at high risk of flooding and represents a significant constraint to the Site's development.
- 3.6.18 Whilst not classed as a highly vulnerable development, it remains that development can only be justified if the proposal complies with the tests set out in paragraph 6.2 of the current Technical Advice Note 15.
- 3.6.19 The Site has previously been granted planning permission following submission of detailed Flood Consequence Assessments in support of the relevant development for a smaller site.
- 3.6.20 The application Site, the subject of the proposal, is not part of a local authority regeneration initiative, and given the concerns raised above there are doubts as to whether the proposal would serve to sustain an existing settlement.

- 3.6.21 In addition, the majority of the Site cannot be classed as previously developed land. As such there is current doubt as to whether the proposal would comply with either criterion i, ii and iii of paragraph 6.2 of TAN15. These considerations are matters that need to be directly addressed in any submission.

4.0 Assessment of Flood Risk

4.1 Historic Flood Risk

- 4.1.1 The NRW 'Historical Flood Map' (Appendix E) indicates that the Site has previously flooded in 1987, however no further historic events were noted on the historic mapping. There is no further information on the historic flooding from the other sources in the relevant third-party documents.

4.2 Tidal Flood Risk

- 4.2.1 The Site is situated at a minimum of 113.09 m AOD and is significantly above sea level. Furthermore, the Site lies approximately 19.6 km southeast of the coastline at the nearest point. Therefore, the risk of tidal flooding to and from the proposed development is considered Negligible.

4.3 Fluvial Flood Risk

Existing Fluvial Flood Risk

- 4.3.1 The nearest watercourse is Unnamed Ordinary Watercourse 1 which is located along the western boundary of the Site. Unnamed Ordinary Watercourse 1 joins the Afon Teifi approximately 295 m west of the Site. Unnamed Ordinary Watercourse 2 is located approximately 12 m north of the Site, is culverted under the A482 and converges with the Afon Teifi approximately 200 m northeast of the Site. Afon Teifi is located approximately 30 m north of the Site at its closest point. Afon Teifi flows around the area of the Site before flowing in a southerly direction.
- 4.3.2 The Flood Map for Planning indicates that the majority of the Site is situated within Flood Zone 3 which is defined as land that has a 1 in 100 annual probability of flooding without defences. The southern extents of the Site are located within Flood Zone 2 and Flood Zone 1, which have between a 1 in 1000 and 1 in 100 annual probability of flooding and less than 1 in 1000 annual probability of flooding respectively. Consideration for climate change has been incorporated in all these scenarios.
- 4.3.3 The 2019 SFCA does not provide any further information on the flood risk to the Site but does confirm that the Site lies within Flood Zone 3 and Flood Zone 2.
- 4.3.4 The store, which is considered to be less vulnerable development has been sequentially located in the southern extents of the Site and will be set above the modelled flood levels and designed on stilts to limit storage losses. The car park, also considered a less vulnerable development type, will be located in the north and will be graded as per Lidl's standards.
- 4.3.5 Pedestrian access and egress from the Site via ramp and platform to the south onto the A482 is located partially within Flood Zone 3 as indicated on the Flood Map for Planning.

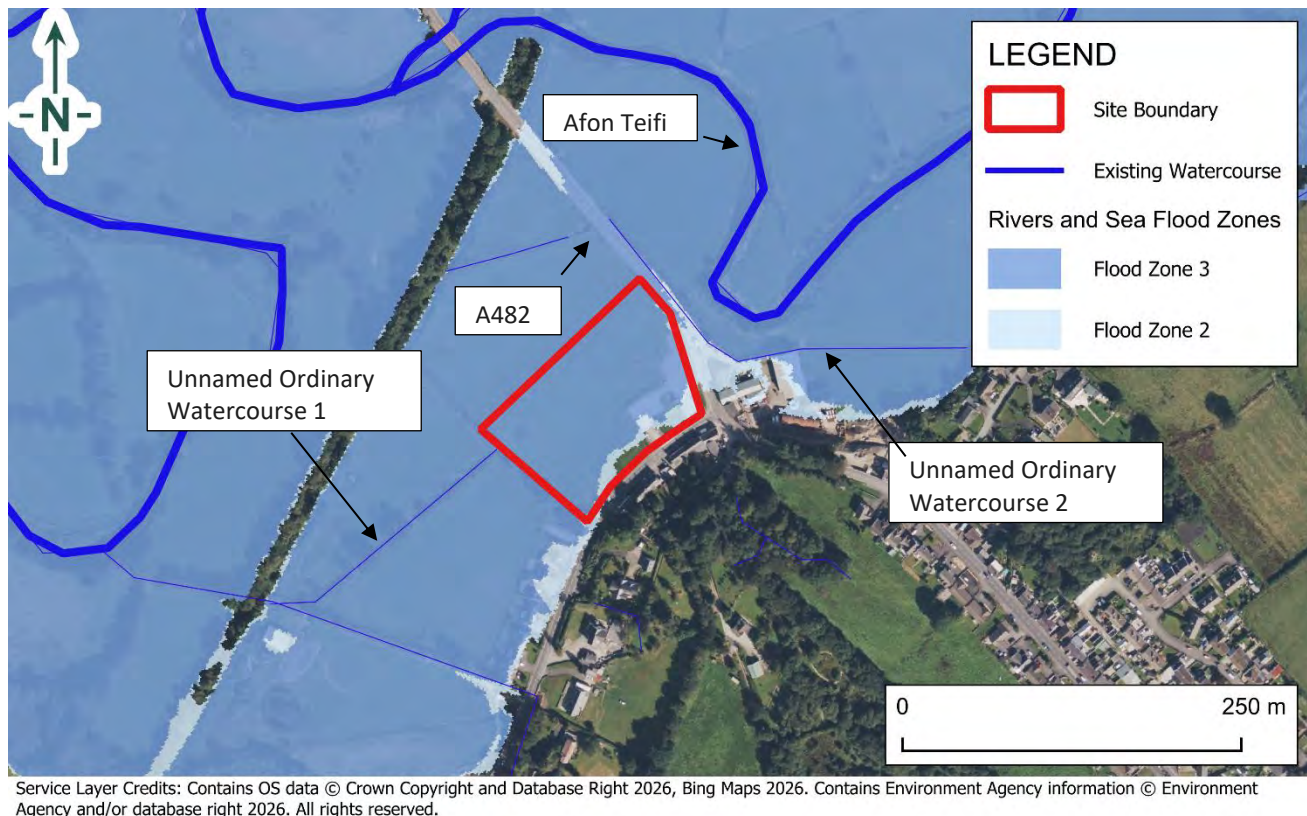


Figure 2: NRW Flood Map for Planning

Baseline Hydraulic Modelling

- 4.3.6 The NRW Afon Teifi 2016 model has been updated using topographical surveys, channel surveys and proposed design updates. Consultation with NRW took place on 10th September 2024 of which general recommendations for model updates and what they expect to see was relayed. Details of this this list can be found in Section 3 of the Hydraulic Model Report (Appendix H) Model updates have been made in accordance with this guidance. The NRW Afon Teifi 2016 model has been updated to help inform the baseline risks and potential impacts of the Scheme. As part of this FCA, the hydraulic model was updated using the latest hydrology (in line with NRW's requirements) including Ordinary Watercourse 2 and a further two channels located at coordinates E: 257994, N: 247205 and E: 258023, N: 247472.

Fluvial Flood Risk to The Development

- 4.3.7 The hydraulic model has been used as a basis for assessing fluvial flood risk to the Development in more detail for the design flood event with an allowance for climate change.
- 4.3.8 The hydraulic model focuses on the water level, depth, extent, inundation rate and velocity associated with the Afon Teifi floodplain including the ordinary watercourse network. Updates to the model include improving the representation of the connectivity of the smaller watercourses and culverts, ultimately improving the representation of local conditions within the model. Topographic surveys of the smaller watercourses were completed in December 2024 by Lucion and were included in Appendix H as part of the hydraulic modelling report. The current assessment has been undertaken using a 30% climate change allowance. Following the publication of updated climate change guidance associated with TAN 15, a revised assessment adopting a 35% climate change allowance is currently being prepared by Lucion and will be incorporated into the final version of the FCA submitted in support of the planning application.

- 4.3.9 While there is shown to be an increase in flood depth due to the updated hydrology, the flood extents still broadly align with the baseline Lampeter model. The Site has been designed in such a way that there is approximately 580 mm freeboard between the maximum water levels in the design event and the FFL of the stores, with pedestrian access from the store achievable in all risk scenarios. Modelled outputs are included in Appendix F.
- 4.3.10 Figure A.7 within Appendix F shows the outputs of the updated model for the 1% AEP event with a 30% increase in peak flows applied for climate change. It also shows modelled extents and flood depths for the baseline (without development) for the design event.
- 4.3.11 The hydraulic model outputs highlight that the development red line boundary would fall within the floodplain of Afon Teifi in the design event and therefore elements of the scheme such as the vehicular access, car park and food store are at risk of fluvial flooding when climate change is considered.
- 4.3.12 The mechanism of flooding is indicated to originate from the west of the Site where Unnamed Ordinary Watercourse 1 backs up from the culvert under the railway line entering the Site from the northwestern corner. The flows propagate from the Afon Teifi to the northeast of the Site flowing through the culvert and down Unnamed Watercourse 2 where they are impounded by the railway line to the north of the Site at (E:258096, N:247453). Waters then flow in a southerly direction along the railway embankment where they are impounded by a farm road (E: 257967, N:247213). This then backfills up Ordinary Watercourse 1 flooding the Site from the northwest. Flooding is also shown to overtop the A482 by the culvert in the lower frequency events.

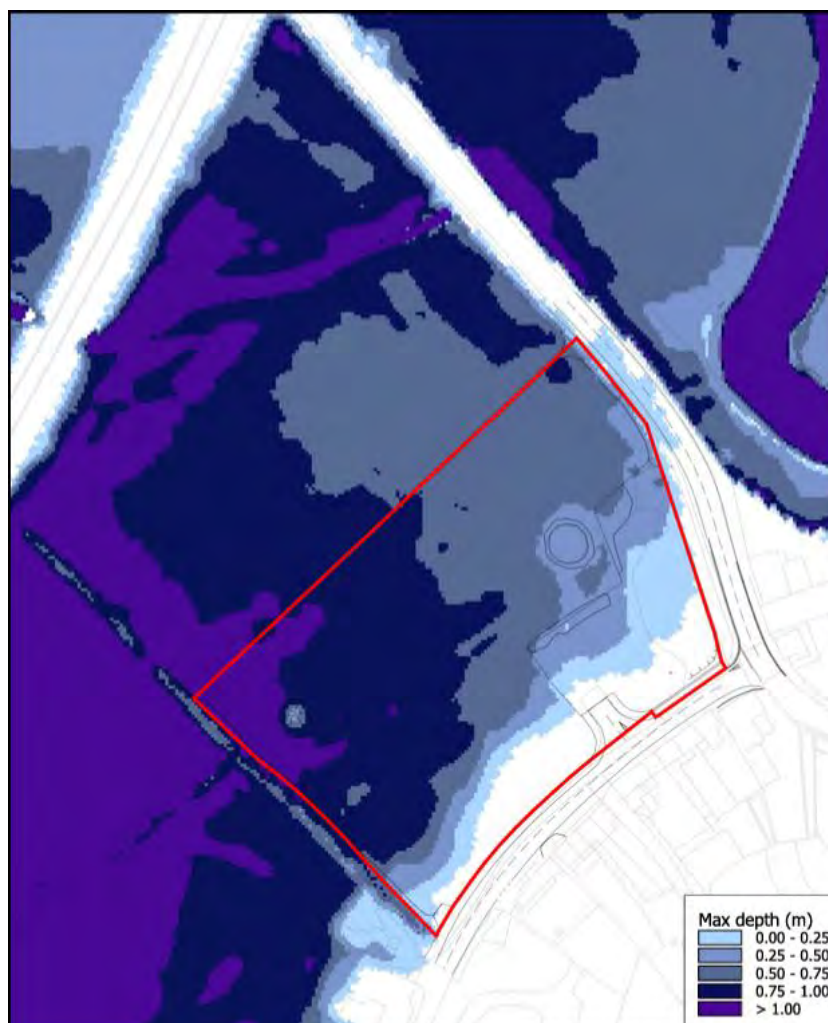


Figure 3: Modelled Design Event Depths

Hydraulic Modelling Maximum Water Level

- 4.3.13 A review of the maximum water level data across all events are shown in Table 4, post-development water levels are provided for two scenarios. The maximum flood level within the design event is indicated to be 114.47 m AOD, this is 0.58 m below the finished floor level of the store and pedestrian access. The store and pedestrian access sit above the maximum water levels in all flood scenarios except the 0.1% AEP + 30% CC event. More detail is provided in Appendices F and H.

Table 4: Hydraulic Modelling Maximum Water Levels

Maximum Water Level (m AOD)								
	50% AEP*	10% AEP	3.33% AEP	1.33% AEP	1% AEP	1% AEP CC**	0.1% AEP	0.1% AEP CC**
Existing	113.72	114.03	114.18	114.29	114.31	114.47	114.75	115.12
Post-Development	-	-	-	-	-	114.47	-	115.19

*Annual Exceedance Probability

** Climate Change allowance of 30% applied

Hydraulic Modelling Flood Depths

- 4.3.14 Utilising the depth data provided as part of the hydraulic mapping, flood depths of up to 1.40 m are indicated during the design event with mean depths on Site at 0.79 m. These flood depths occur in the northwest of the Site however this is to remain as open land as part of the development. The car park and vehicular access road are indicated to be at risk with depths of 0.25 – 0.5 m from the 1 in 10 year event to the 1 in 100 year event. In the design event the flood depths at the access road are indicated to be between 0.5 to 0.75 m. More detail is provided in Appendices F and H.

Hydraulic Modelling Max Velocities

- 4.3.15 Within the updated hydraulic model data, velocities have been provided. In all events up to and including the 1 in 1000 year event mean velocities on Site are largely indicated to be below 0.2 ms⁻¹ with the access to the property at speeds of below 0.1 ms⁻¹. This is below the recommended maximum of 0.3 ms⁻¹ and 0.15 ms⁻¹ for property access and deemed acceptable. However, with the inclusion of Unnamed Watercourse 2, a flow route forms when the drain overtops and some isolated areas of the car park in the north of the Site closest to the drain may have speeds up to 0.5 ms⁻¹ from the 1 in 10 year event. Speeds of up to 0.97 ms⁻¹ could occur in those areas in the design event with a mean velocity at the Site of 0.12 ms⁻¹. The increase in velocities is due to the lowering of ground levels as part of the proposed development. More detail is provided in Appendices F and H.

NRW Inundation Rates

- 4.3.16 Inundation rates obtained from the updated model highlight the time it takes for the maximum peak to occur in hours. The model indicates full inundation of the Site in the 1 in 100, 1 in 100 + 30% CC and the 1 in 1000 year events takes on average over 18 hours. Given that the Site lies within a flood warning area it believed there would be sufficient time for Site users to evacuate. More detail on peak times is provided in Appendices F and H.

Table 5: Hydraulic Modelling Time to Peak

Return Period	Mean Time to peak (hours)	Max Time to peak (hours)
1 in 2	16.93	18.69
1 in 10	19.86	20.15

1 in 30	20.28	20.45
1 in 75	20.59	20.66
1 in 100	20.83	20.93
1 in 1000	18.53	18.55
1 in 100 + 30% CC	19.09	19.16
1 in 1000 + 30% CC	16.52	16.52

NRW Hazard Mapping

- 4.3.17 Hazard mapping outputs provided as part of the hydraulic modelling (Appendix F) highlight that safe access and egress would be possible in all flood risk events. Notwithstanding this, it is recommended to produce a Flood Response Plan to explain the risks to staff and how to achieve safe egress.
- 4.3.18 Safe vehicular and pedestrian access and egress is achievable up to and including the 1 in 10 year event via the main vehicular access point leading onto the A482 as the hazard rating is Low. Safe pedestrian access and egress is achievable in all flood risk events via the ramped pedestrian access to the A482 east of the store. This is a result of the development platform level of 15.05 m AOD which is above all flood levels. The majority of the store footprint is at Low to Moderate hazard with the car park indicated to be at Moderate to Significant Hazard in the design event, which is caused by depths on Site rather than velocities. The store will be raised, therefore the hazard shown across the footprint is representative of that within the voids below the store. More detail is provided in Appendices F and H.

Summary

- 4.3.19 Considering the above the risk of fluvial flooding to the majority of the Site is considered High. Given the proposed final floor level of the store and pedestrian access will sit above the design event, the risk of flooding and ingress is considered Low. The risk across the Site can be managed effectively by adopting a flood response plan and signing up for local flood warnings. Given the inundation rate is above 16 hours for all events there would be sufficient time to receive a warning, implement a Flood Response Plan and evacuate people safely prior to inundation.

Development Impact on Fluvial Flood Risk Elsewhere

- 4.3.20 Hydraulic modelling (Appendix F) demonstrates that, in the design event (climate change) scenario, the development would be located in the modelled flood extent.
- 4.3.21 As depicted in Appendix D, the proposed design will accommodate stilts to ensure minimal interaction with floodwaters. The depth difference map shown in Figure 4 below demonstrates that the development has a negligible impact on flood depth and extent within the red line boundary and beyond. This suggests that given the scale of the floodplain in combination with slow inundation rates and low velocities, the development has a negligible impact on flood water displacement and conveyance.
- 4.3.22 While it may appear that the store is flooding on the mapping, the outputs take into consideration the voids present and as such the mapping indicates flooding that would be present under the store.
- 4.3.23 Access and egress from the Site are indicated to be achievable by the pedestrian access point in all risk scenarios as the lowest point (road level) sits at 114.57 m AOD which is above the design event flood levels.

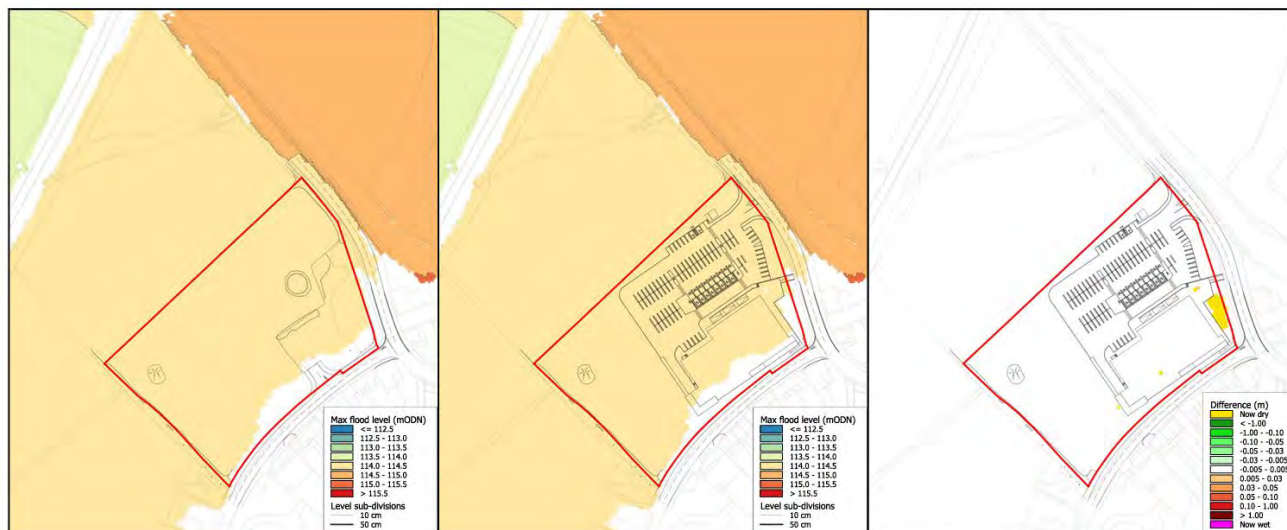


Figure 4: Post Development Impact during the 1% + CC Event

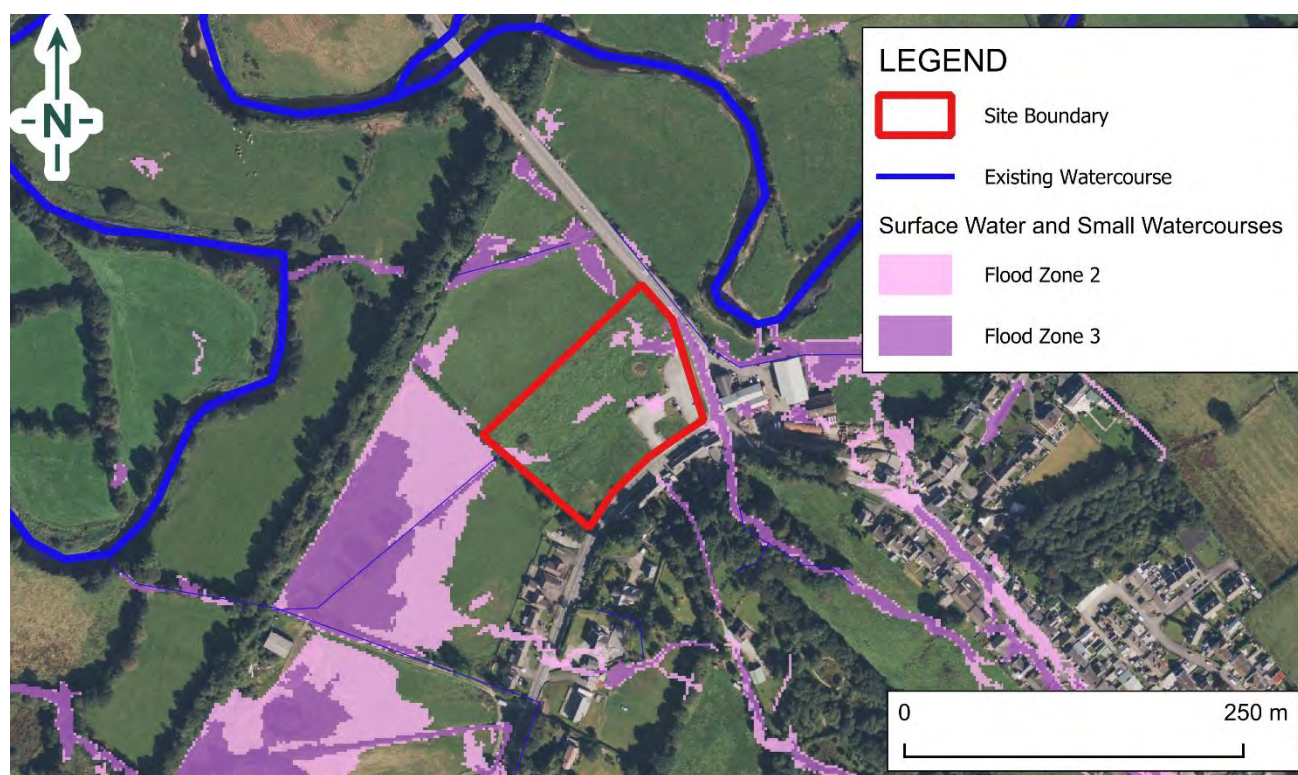
Sensitivity scenario

- 4.3.24 To understand the possible impact of the mesh across the voids gathering debris and the voids becoming blocked, a sensitivity run which assumes the voids to be 100% blocked (represented as a slab in the model) was undertaken. This represents a worst case scenario. The outcome of which resulted in a negligible impact on flood levels to the Site and wider area indicating flooding is not sensitive to a full blockage. Greater detail can be found in Appendix F and Appendix G.
- 4.3.25 After any flood event where the voids become inundated, debris buildup within the mesh protecting the voids will be cleared by Lidl once the flood waters have retreated.

4.4 Surface Water Flood Risk

Existing Surface Water Flood Risk

- 4.4.1 The Flood Map for Planning indicates that the majority of the Site is within Flood Zone 1 (less than 1 in 1000 annual probability) associated with surface water and small watercourse. There is one area in the north of the Site that is indicated to be in Flood Zone 3 (greater than 1 in 100 annual probability) with associated areas of Flood Zone 2 (between 1 in 1000 and 1 in 100 annual probability). There are further areas of Flood Zone 2 in the centre and west of the Site. The maps account for climate change.
- 4.4.2 There is no further evidence of surface water flooding in the SFCA reports.
- 4.4.3 Given the close proximity to the Afon Teifi, it is believed that surface water flooding would be dominated by fluvial influences from the 1 in 20 year event onwards.



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Figure 5: NRW's Flood Risk from Surface Water and Small Watercourses

4.4.4 The NRW National Flood Hazard and Risk Maps have been utilised to indicate potential surface water depths for the Site for the various return periods. The Site is indicated to be wholly flood free in the high risk scenario (>3.3% annual probability). In the medium risk scenario (1 – 3.3% annual probability) there is an isolated area in the north of the Site where depths are indicated to be between 0.15 and 0.3 m. Lastly, in the Low risk scenario (0.1 – 1% annual probability) the Site is largely flood free with isolated areas in the southwest, centre and north with depths indicated to be between 0.1 and 0.3 m.

4.4.5 It can therefore be concluded that the Site is at Low risk of surface water flooding.

Development Impact on Surface Water Flood Risk

4.4.6 The proposed development would lead to an increase in hardstanding area (0.6 ha) through the construction of the store and associated car park and loading bay. As a result, the rate of surface water runoff generated would increase without mitigation. In order to manage this, a DDS has been developed (Appendix J).

4.4.7 The DDS indicates the surface water generated by the scheme can be drained by gravity and proposes an above ground SuDS solution (retention basin) which provides 919.3 m³ for the 1 in 100 + 40% CC event, plus 300 mm freeboard. Infiltration was not deemed appropriate due to the high groundwater levels which are unlikely to be able to support a deep enough dry zone beneath an infiltrating SuDS feature to ensure infiltration remains effective (see Appendix J for further detail).

4.4.8 The proposed SuDS measures will be designed in accordance with The SuDS Manual (CIRIA C753) and have been sized to attenuate the 1 in 100-year event (plus 40% climate change allowance for rainfall intensity) event. The outfall from the pond will discharge to Unnamed Watercourse 1 at a rate of 2.3 l/s equivalent to the 1 in 1 year greenfield rate.

4.4.9 In the event of the Site becoming inundated, fluvial mechanisms will dominate and the drainage system will also become inundated. A pond was chosen as the preferred SuDS attenuation measure as it would be easier to maintain and remediate after a flooding event compared to an underground solution as any system.

4.4.10 Approval was granted by the SAB on 20 June 2025, reference SAB/00691, for the DDS as included in Appendix J. This and the associated conditions mandate the construction of a compliant drainage system to manage post-scheme surface water runoff, as such the scheme will not result in a material change surface water flood risk.

4.4.11 The risk to surface water flooding from the scheme is therefore considered Low. It should be noted that the SuDS features will likely provide multi-functional benefits and will provide water quality benefits alongside an increase in habitat availability and flood storage capabilities.

4.5 Groundwater Flood Risk

Existing Groundwater Flood Risk

4.5.1 Hydrogeological information has been obtained from Defra's online Magic Map, BGS mapping and Soils Mapping. Reference to the BGS online mapping indicates that the Site is underlain by superficial deposits of Alluvium and then by the Devils Bridge Formation.

4.5.2 The 2024 SI&PRA contains Envirocheck data which concludes that there is the potential for groundwater flooding to occur at the surface.

4.5.3 The SFCA states that the Site lies within an area where groundwater levels are either at or very near (within 0.025m of) the ground surface during a 1% event. Given the spatial proximity to the Afon Teifi, groundwater levels may be hydraulically linked with river levels. As such groundwater levels could be influenced during periods of prolonged high water levels in the Afon Teifi.

4.5.4 The FFL of the proposed building will be raised to 115.05 m AOD which is above the surrounding ground level. The risk from groundwater flooding is considered to be Low.

Development Impact on Groundwater Flooding

- 4.5.5 The foundations for the building will likely include piles therefore, there is a possibility for some interaction with groundwater. However, given the lateral extent of the underlying aquifers compared to the scale of the works it is unlikely that groundwater flood risk will be exacerbated.
- 4.5.6 The impact of the development on groundwater flooding is considered Low.

4.6 Artificial Sources Flood Risk

Existing Risk of Sewer Flooding

- 4.6.1 There is no evidence of historic sewer flooding at the Site in the 2019 SFCA. Any potential flooding arising from the 300 mm sewer in Bridge Street would be directed south, into the Site, which acts as a low point in the surrounding area. The 2019 SCFA notes that failures of trunk sewers may surcharge manholes within the catchment affecting low lying land that may already be suffering from other sources of flooding.
- 4.6.2 It can therefore be concluded that the risk of sewer flooding is Low.

Existing Reservoir and Canal Flood Risk

- 4.6.3 There are no canals within the vicinity of the Site and there is no associated flood risk to or from the development.
- 4.6.4 The NRW 'Flood Risk from Reservoirs' map shows that the Site is not at risk of flooding from reservoirs and therefore the risk to the Site is considered Negligible.
- 4.6.5 It can be concluded that the risk to and from the Site with regards to both canal and reservoir flooding is Low.

Development Impact on Artificial Sources Flooding

- 4.6.6 Welsh Water have agreed that the proposed development can discharge to the public foul sewer system. Surface water from the Site will be discharged to the local watercourse network. Therefore, the risk from the development on sewer flooding is Low.

4.7 Summary of Flood Risk

- 4.7.1 Table 6 below summarises flood risk to and from the scheme from all sources and indicates whether mitigation is recommended.

Table 6: Summary of flood risk

Source of Flooding	Risk to the Scheme	Mitigation Recommended	Risk from the Scheme	Mitigation Recommended
Tidal	Negligible	X	Negligible	X
Fluvial	High	✓	Low	X
Surface Water	Low	X	Low	X
Groundwater	Low	X	Low	X
Reservoir	Negligible	X	Negligible	X
Artificial Sources	Low	X	Negligible	X

4.8 Mitigation

- 4.8.1 The Site is identified to be at risk of fluvial flooding with a maximum flood level of between 114.47 m AOD during the 1% AEP plus 30% CC and 115.19 m AOD during the 0.1% AEP plus 30% CC event.
- 4.8.2 Preliminary baseline model outputs were used to provide a steer on the design flood level. As a result of this it was proposed to set FFLs at a minimum of 115.05m AOD. The front elevation of the food store will be on stilts and therefore will allow free movement of floodwaters underneath. This will ensure that the building will remain flood free during the 1% AEP plus 30% CC event. The 0.1% AEP scenarios are considered a residual risk.

- 4.8.3 Works are taking place within Flood Zone 3 which is shown as an area of high fluvial flood risk. Emergency procedures related to the potential for extreme rainfall and flooding will be in place during construction and should be outlined in a Construction Management Plan or similar. This will allow the use of flood warning and rainfall event warnings to allow compound areas to be evacuated and material in flood risk areas to be moved where possible.

Flood Warnings and Evacuation

- 4.8.4 The Site lies within the Afon Teifi at Lampeter Flood Warning Area. Site management should register to receive flood warnings; this is a free service that provides prior warning of a flood event.
- 4.8.5 Site management should prepare a Flood Response Plan to inform Site staff of the flood risk and to provide advice on what to do in the event of a flood. The Plan should include details of the safe evacuation route to be used upon receipt of a flood warning. Safe evacuation is provided via the A482, an area shown to be outside of the design fluvial flood extent as in Appendix H. It is also considered acceptable for Site users to remain within the building and seek refuge at first floor level. People should not evacuate the building into floodwater unless instructed to do so otherwise by the emergency services.
- 4.8.6 The time to max peak is indicated to be at a minimum of 16 hours. This provides enough time for any Site users to evacuate the Site in the event of a Flood Warning.

4.9 Residual Risks

- 4.9.1 The store is indicated to be at a residual risk of flooding from during the 0.1% AEP and 0.1% AEP + 30% CC events. The pedestrian access and egress are indicated to be at residual risk in the 1 in 1000 year event as the water overtops the A482 during this event. As a sensitivity test, a worst case scenario has been adopted which assumes 100% blockage of the voids below the stilts as seen in Appendix G/Drawing C2. The outcome of which also resulted in a negligible impact on flood levels to the Site and wider area. As such the residual risk of flooding from the development is considered Low.
- 4.9.2 The residual impact of a culvert blockage has also been modelled for the nearest culvert beneath the railway embankment (located to the northeast at SN 58088 47468) where a 50% blockage has been assumed. Where the existing design conditions presents a design flood level on site of 114.47 m AOD (mean), the blockage scenario (residual risk) yields an increase of the flood level to 114.79 m AOD, an increase of 0.48 m. This flood level remains 580 mm below the proposed finished flood level of the store. See Appendix H for more details.

Access and Egress

- 4.9.3 Fully dry pedestrian access and egress will be possible during all flood scenarios. It will be prudent however for Lidl representatives to sign up to flood warning services to ensure prompt response and implementation of the Site-specific Flood Response Plan.
- 4.9.4 It may also be beneficial to include some signage within the vicinity of the proposed car park highlighting the risk of flooding to help inform the visitors.

Surface Water Drainage Systems

- 4.9.5 In the event of a flood occurring, the surface water drainage systems on Site would need to be subsequently cleared to ensure the continued optimum hydraulic performance. Given the likelihood of fluvial inundation a pond was chosen as it would be easier to maintain and remediate after a flooding event.

5.0 Justification

- 5.1.1 Section 10 of TAN 15 states that Less Vulnerable proposals will be appropriate in Flood Zone 3 *'if they are essential to the Development Plan Strategy to regenerate an existing settlement or achieve key economic or environmental objectives. Any redevelopment proposal must be consistent with the acceptability considerations in section 11'*. As such a sequential approach to Site selection has been undertaken, see Appendix I for further details. Within the Site, the store was also sequentially located to the lowest area of risk.
- 5.1.2 Where development is justified the assessment can be used to establish whether suitable mitigation measures can be incorporated within the design to ensure that 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.
- 5.1.3 A summary of the adherence of the development with the requirements of Section 11 and Figure 5 (Flood Events in which development must remain flood free), Figure 6 (Tolerable conditions in an extreme flood event) and Figure 7 (Flood Hazard Matrix) of TAN 15 is summarised in Table 7 below.

Table 7: Adherence with Figure 5, 6 and 7 of TAN 15

	Requirement	Comment
1	Is the Less Vulnerable development flood free during a 1% AEP + CC event for Rivers	The food store and pedestrian access point will be flood free based on FFLs of 115.050 m AOD during the 1% AEP + 30% CC event however the car park is indicated to flood. This is further explained in paragraph 5.1.6 below.
2	Is the Less Vulnerable development flood free during a 0.5% AEP + CC event for the Sea	Yes.
3	Are the flood depths at the Less Vulnerable development less than 600 mm during a 0.1% AEP event	The food store and pedestrian access point are anticipated to experience flood depths of 70 mm based on FFLs of 115.050 m AOD. The pedestrian access will see some flooding below the 600 mm threshold as it ramps down to the A482 to the east and the car park is indicated to be at risk.
4	Is the flood velocity at the development less than 0.15 ms ⁻¹ during a 0.1% AEP event	Within the car park speeds of up to 0.7 ms ⁻¹ could occur in the north, with the majority of the car park at 0.2 – 0.3 ms ⁻¹ .
5	Are the flood depths on the access route less than 600mm during a 0.1% event	Yes, the pedestrian access route will be flood free based on FFLs of 115.050 m AOD. The pedestrian access will see some flooding below the 600 mm threshold as it ramps down to the A482 to the east. Vehicular access is restricted in this event.

6	Is the flood velocity on the access route less than 0.3 ms ⁻¹ during a 0.1% event	Yes, as the pedestrian access route at road level will have speeds of 0.1 – 0.2 ms ⁻¹ . Vehicular access is indicated to have speeds of up to 0.3 ms ⁻¹ .
7	Is the maximum rate of rise of flood waters less than 0.3m/hr during a 0.1% event	Yes, as the maximum depth on Site is indicated to be 1.69 m in the car park in the design event with a time to maximum peak of 18.5 hours which gives a rate 0.09 m/hr.
8	Is the maximum speed of inundation of flood risk area less than 2hrs	Yes, maximum speed of inundation is indicated to be 16 hours.
9	Will the development have an impact on third parties	Hydraulic modelling with updated hydrology confirms that there is no impact from the development on third parties.
10	Will there be a loss of flood storage capacity	Hydraulic modelling confirms that there is not a notable loss of flood storage capacity from the development and a retention pond in the west of the Site would provide additional storage in a flood event.

- 5.1.4 A FFL of 115.05 m AOD complies with the TAN15 guidance which states that commercial and retail properties can have a maximum depth of flooding of 600 mm. The building is set 580 mm above the 1% AEP plus 30% climate change event and internal flooding would not occur. The car park is indicated to have areas of flooding with depths above 600 mm however pedestrian access from the Site will still be achievable in the 0.1% AEP event along the A482 to the east of the Site which is indicated to have depths of less than 250 mm. It is recommended that signage is posted in the car park that there is a risk of flooding to the car park and given the significant time to peak inundation at the Site, it is considered achievable to evacuate all vehicles in advance. It is noted that similar developments within the vicinity of the Site and Lampeter experience similar flood conditions within their car parks.

6.0 Conclusions

6.1 Conclusions

- 6.1.1 The proposed development is for a supermarket, parking and access located between the towns of Lampeter and Cwmann, approximately 860 m southeast from Lampeter Town Centre.
- 6.1.2 The Site is located predominantly within Flood Zone 3 on the NRW Flood Map for Planning.
- 6.1.3 The main potential source of flooding at this Site is fluvial flooding from the Afon Teifi, which is the dominant source in the area.
- 6.1.4 The NRW Afon Teifi 2016 model has been updated using topographical surveys, channel surveys and the proposed design to understand the baseline conditions and the impact of the development on flood risk elsewhere.
- 6.1.5 Estimated flood levels have been obtained from Site specific hydraulic modelling and show that proposed building will be set above the 1% AEP + 30% CC (previous design event, to be updated to 35%) maximum flood levels. The flood depths, velocities and time to max peak for the food store are within the tolerable limits.
- 6.1.6 Hydraulic modelling demonstrates that, in the design climate change scenario, the development would be located in the flood extent. The impact from the development is negligible on flood depth and extent within the red line boundary and beyond.
- 6.1.7 Safe evacuation is available from the Site for pedestrians via the A482 to the east of the Site which is indicated to remain flood free in the 1% AEP + 30% CC event with shallow flooding present in the worst case 1 in 1000 year event. This is still within tolerable limits detailed by the TAN15 guidance. Additionally with a long time to inundation and the area being served by flood warnings, it is believed there would be sufficient time to implement a Flood Response Plan and safely close the store and evacuate the Site.
- 6.1.8 Whilst groundwater levels may become very shallow in the area of the Site and groundwater emergence is possible, the store's elevation above the design.
- 6.1.9 Proposed FFLs and the absence of any below ground levels reduce the risk. While the foundations will likely involve the use of piles, given the lateral extent of the underlying aquifers compared to the scale of the works it is unlikely that groundwater flood risk will be exacerbated as a result of the development.
- 6.1.10 The risk from all other sources to and from the development is considered Low.

6.2 Recommendations

Flood Risk

- Set finished floor levels to 115.05 m AOD, above the design flood level (1% AEP + 30% CC).
- Site management to sign up to flood alerts and warnings to receive updates on flood events.
- Implement an appropriate Flood Response Plan, which recognises the risks, roles and responsibilities, and details what action is to be taken by staff in the event of a flood to put Site users in a place of safety.
- Include for an enhanced surface water drainage maintenance programme to ensure the hydraulic performance of the system remains fully functional particularly after a flood event.
- Appropriate signage within the car park highlighting the risks of flooding.
- Regular clearing of the mesh between the voids to avoid debris build up.

Other

- Flood Risk Permit for works within the floodplain.
- Land Drainage Consents for discharge to a watercourse.

Appendix A – Limitations

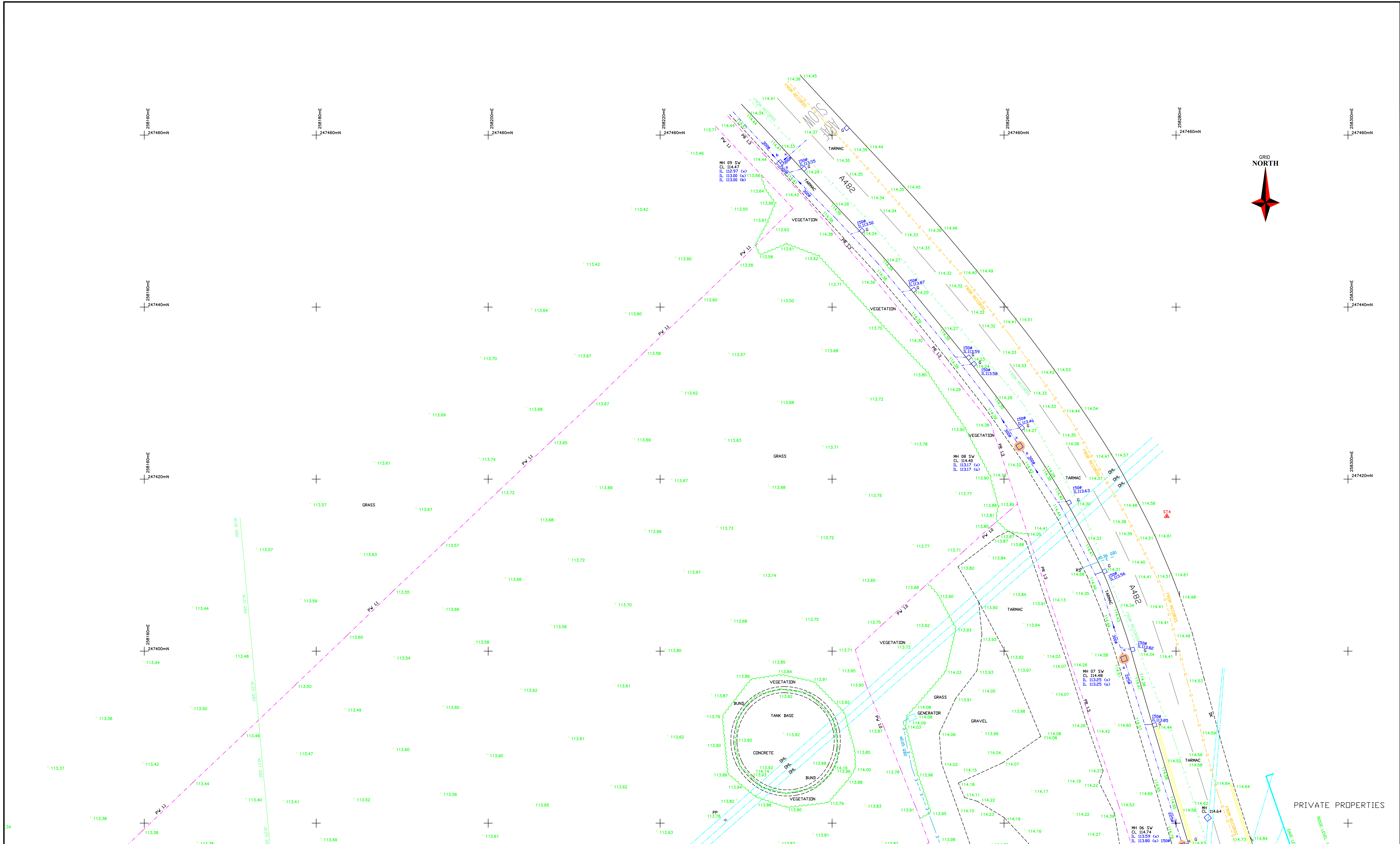
Limitations

The recommendations contained in this Report represent Lucion professional opinions, based upon the information listed in the Report, exercising the duty of care required of an experienced Environmental Consultant. Lucion does not warrant or guarantee that the Site is free of hazardous or potentially hazardous materials or conditions.

Lucion obtained, reviewed and evaluated information in preparing this Report from the Client and others. Lucion conclusions, opinions and recommendations has been determined using this information. Lucion does not warrant the accuracy of the information provided to it and will not be responsible for any opinions which Lucion has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

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Appendix B – Topographic Survey



Company details:
Address - Unit 4, Dales Court Business Center, 95 Dales Road, Ipswich IP1 4JR
Email- info@empdrainage.co.uk or gina@empdrainage.co.uk
Contact No - 01473 748 704 or 07595 314 790

NOTES:
The accuracy and content of this drawing are dependent on the original specification and EMP should be consulted before use at other scales.
Where underground services are shown, all reasonable care has been taken within the original specification and requirement. Before use of this information the user should satisfy themselves of the completeness and accuracy of such detail and consult EMP before undertaking any works. Due to the nature of this work and limitations imposed by ground conditions and the detection equipment, no guarantee can be given that all services have been recorded. PAS128 Type A Trial holes/excavations should be dug at critical locations.
Our aim is to produce the best possible results for our clients, within the agreed specification and cost constraints. All reasonable care has been taken in the survey detail represented on this drawing. Any discrepancies must be reported immediately to EMP and any other comments or feedback is most welcome.
Levels shown at kerbs are channel level unless stated.

Control: All levels and co-ordinates are related to the datums described.
The horizontal and vertical control of this survey is based on the Ordnance Survey National Grid and level datum via Network RTK GPS.
We have applied no reverse scale factor to this survey.

Original Drawing Size: A1

LEGEND

Features:
ACD Drainage Channel
AV Air Valve
AB Air Brick
BCL Base Depth
BOD Blocked
BOL Bolt
BS Bus Stop
BT British Telecom Cover
C Cable Duct
CL Cover Level
CLD Cable TV Cover
CLO Closed
D Drop Kerb
DPC Damp Proof Course
E End of Trace
ER Earth Road
F Fire Hydrant
FV Vent
G Gas Valve
Gully
H Inspection Cover
I Invert Level
J Junction Box
K Kerb
KO Kerb Outlet

Surfaces & Finishes:
B Brick
CB Close Boarded
CL Concrete
CLT Casing Tiles
CPC Concrete Paving Slabs
CPT Carpet
F Floor Tiles
L Linoleum
LND Larch Laid
P Pavement
R Render
S Stone
T Tarmac
TSP Textured Safety Paving
W Wire Mesh Fence

Boundary Types:
BW Barbed Wire
CB Close Boarded
CL Chainlink
CPC Concrete Paving
K Kerb
L Larch Laid
P Pavement
R Render
S Stone
T Tarmac
TSP Textured Safety Paving
W Wire Mesh Fence

Services:
C CATV cables
CS Combined Sewer
D Data cables
E Electric cables
F Foul water
G Gas pipes
H Empty duct
I Storm water
J Telecom cables
K Unidentified
L Unidentified Rider Trace
M Water pipes
N Pipe Diameter/Flow
O Overhead Lines
P Service depth

Survey Station
Fence
Gate
Painted Road Markings
Edge of Vegetation
Kerb/Drop Kerb
Tree
Banks
Building
Overhead Building Detail
Wall

PAS 128:2014 Quality Level Guide

Quality Level	Description
Q1	A utility is expected to exist but cannot be detected - (Q1) Assumed route
Q2	Revealed location only using one geophysical technique
Q3	Revealed location only using one geophysical technique - eg GPR, or Radar
Q4	Revealed location only using one geophysical technique - eg GPR, or Radar
Q5	Revealed location only using one geophysical technique - eg GPR, or Radar
Q6	Revealed location only using one geophysical technique - eg GPR, or Radar
Q7	Revealed location only using one geophysical technique - eg GPR, or Radar
Q8	Revealed location only using one geophysical technique - eg GPR, or Radar
Q9	Revealed location only using one geophysical technique - eg GPR, or Radar
Q10	Revealed location only using one geophysical technique - eg GPR, or Radar

Job No.	Surveyor	Checked	Date	Scale
1118	M.Cable	M.Wood	Aug 2024	1:200

Drawing No.	Revision
1118/T&S/01-04	-

Rev	Job No.	Date	Revision Detail	Surveyor	Checked

CLIENT DETAILS

Lidl Waterton Industrial Estate
Off Cowbridge Road
Bridgend
CF31 3PH

PROJECT DETAILS

Land off A485
Lampeter
Gwmann
SA48 8JN

Appendix C – Sewer Plans

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DO NOT SCALE!
ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE WORK COMMENCES

BOUNDARY BASED ON TITLE DEEDS: WA591812

SUBJECT TO TOPOGRAPHICAL SURVEY AND LEVELS REVIEW

SUBJECT TO FURTHER DESIGN DEVELOPMENT

SUBJECT TO LANDSCAPE ARCHITECT DESIGN

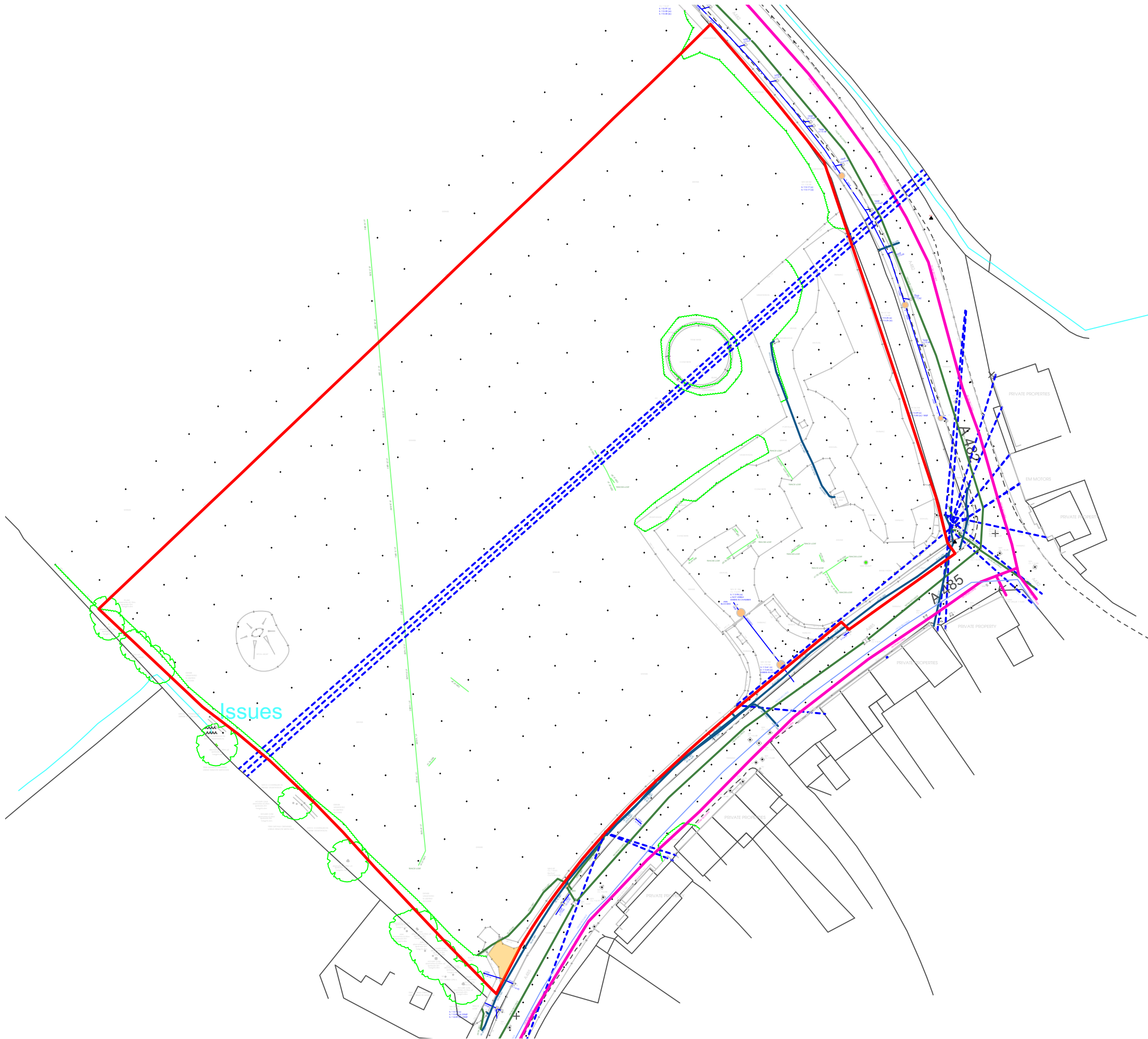
SUBJECT TO TREE SURVEY AND ECOLOGIST REPORT/REVIEW

SUBJECT TO HIGHWAYS DESIGN AND REVIEW

SUBJECT TO DRAINAGE DESIGN AND REVIEW

SUBJECT TO FLOOD RISK ASSESSMENT

BOUNDARY BASED ON TOPOGRAPHICAL SURVEY 1118 Lampeter
Topographic and Utilities Survey Final



Issues

KEY:

- EXISTING OVERHEAD LINE
- RADAR FEATURE
- CATV
- COMBINED SEWER
- DATA CABLES
- ELECTRIC
- FOUL
- GAS
- SERVICE DUCT
- STORM
- WATER
- VEGETATION



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client
Lidl GB Ltd.



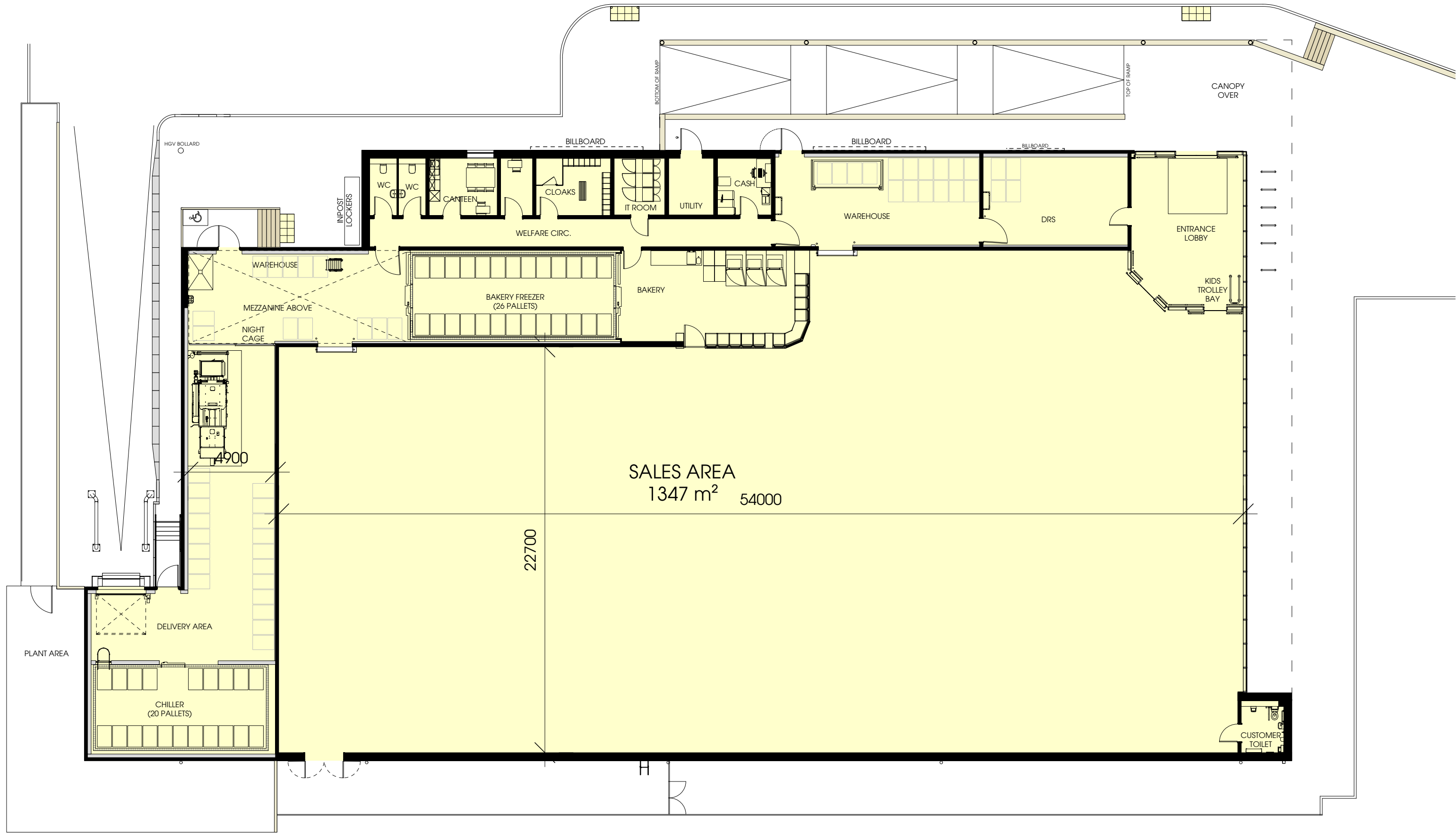
project
Lampeter

drawing title
Existing Utilities

date August 2024
status Planning
scale 1:750 @ A3
drawn KA checked BM
job no. 3384 dwg no. P407 rev.

Rev.	Date	Description	Drawn
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Appendix D – Proposed Development Plans



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client
Lidl GB Ltd.



project
Cwmann,
Lampeter
drawing title
Ground Floor Plan

date June 2026
status Planning
scale 1:200 @ A3
drawn NG checked BMS
job no. 3384 dwg no. P1100 rev.

Rev	Date	Description	Drawn
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Appendix E – Historic Flooding

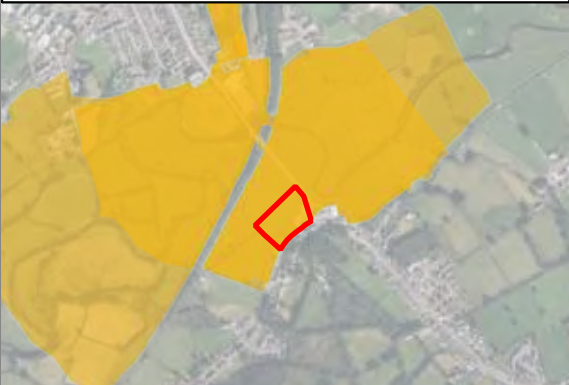


Legend

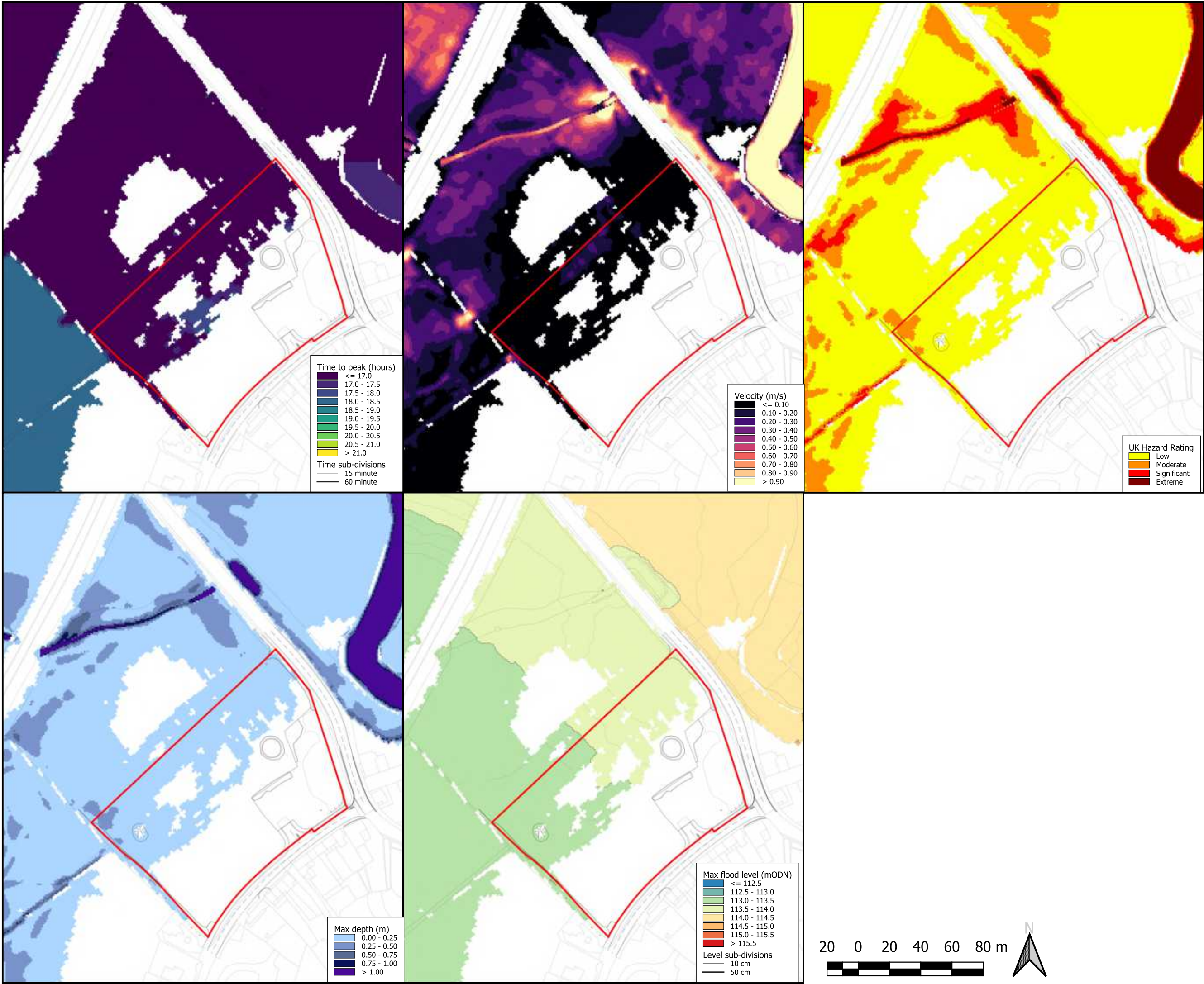
- Approximate Site Boundary
- NRW Historic Flood Extents



Figure		
Historic Flooding		
Job		
Land off Cwmann Terrace, Cwmann, Lampeter SA48 8DR		
Client		
Lidl		
Figure No.	Revision	Date
D	1	16 October 2024
Drawn by	Checked by	Scale
CL	LB	1:1,250
Job No.		
119796.642269		



Appendix F - Hydraulic Modelling Results



TITLE

EXISTING CONDITIONS
50%AEP EVENT
PRESENT DAY

LEGEND

Site boundary

DETAILS

NOTES

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3	3rd issue	28-01-2025
4	4th issue	04-04-2025
5	5th issue	11-08-2025
6	6th issue	16-12-2025

CLIENT

LUCION GROUP

PROJECT

LIDL, LAMPETER

SCALE

1:2191 @ A3

PROJECT No.

4112

INITIALS

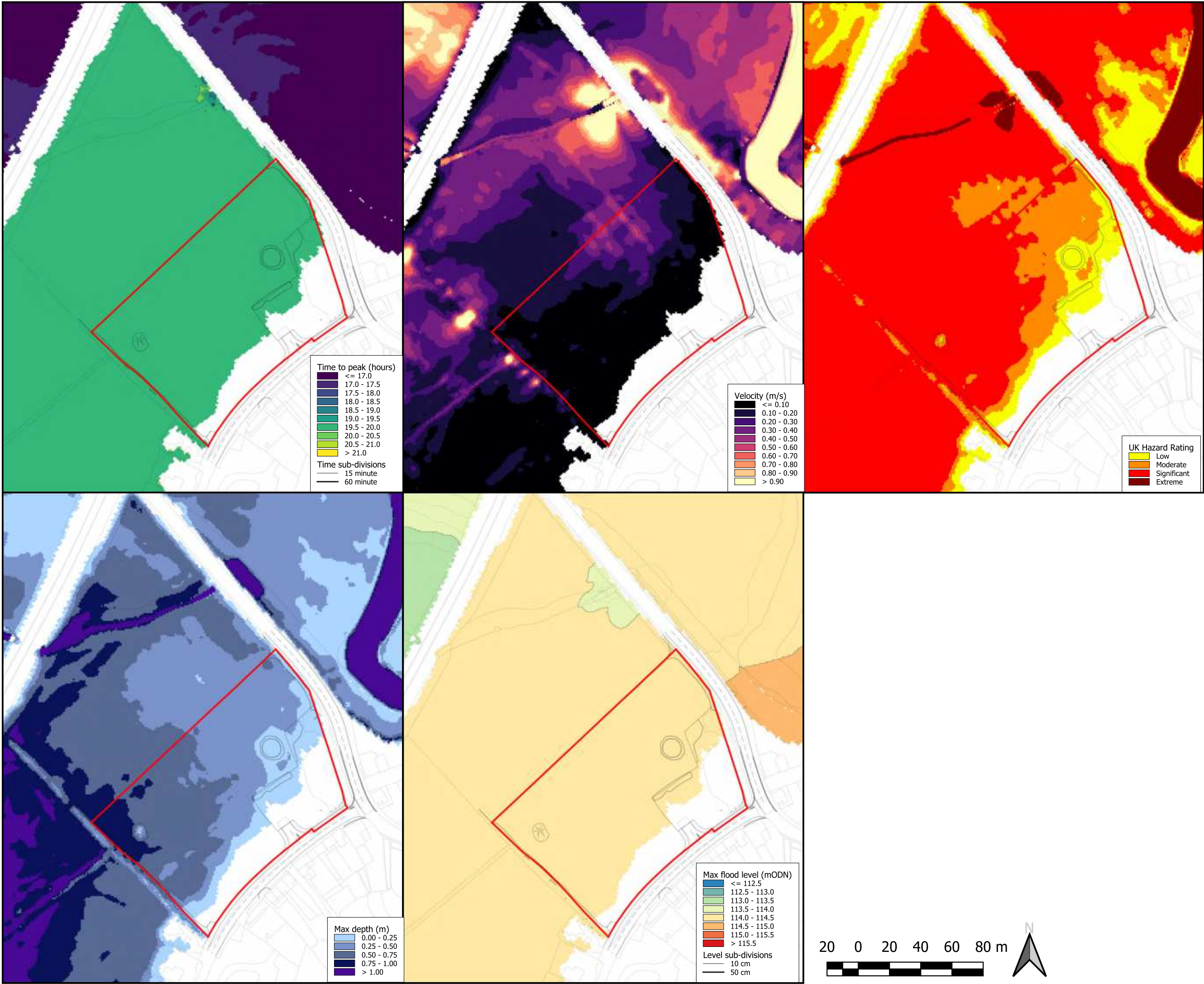
NW

CHECKED BY

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DRAWING No.

A.1



TITLE

EXISTING CONDITIONS
10%AEP EVENT
PRESENT DAY

LEGEND

 Site boundary

DETAILS

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5	5th issue	11-08-2025
6	6th issue	16-12-2025

CLIENT

LUCION GROUP

PROJECT

LIDL, LAMPETER

SCALE

1:2191 @ A3

PROJECT No.

4112

INITIALS

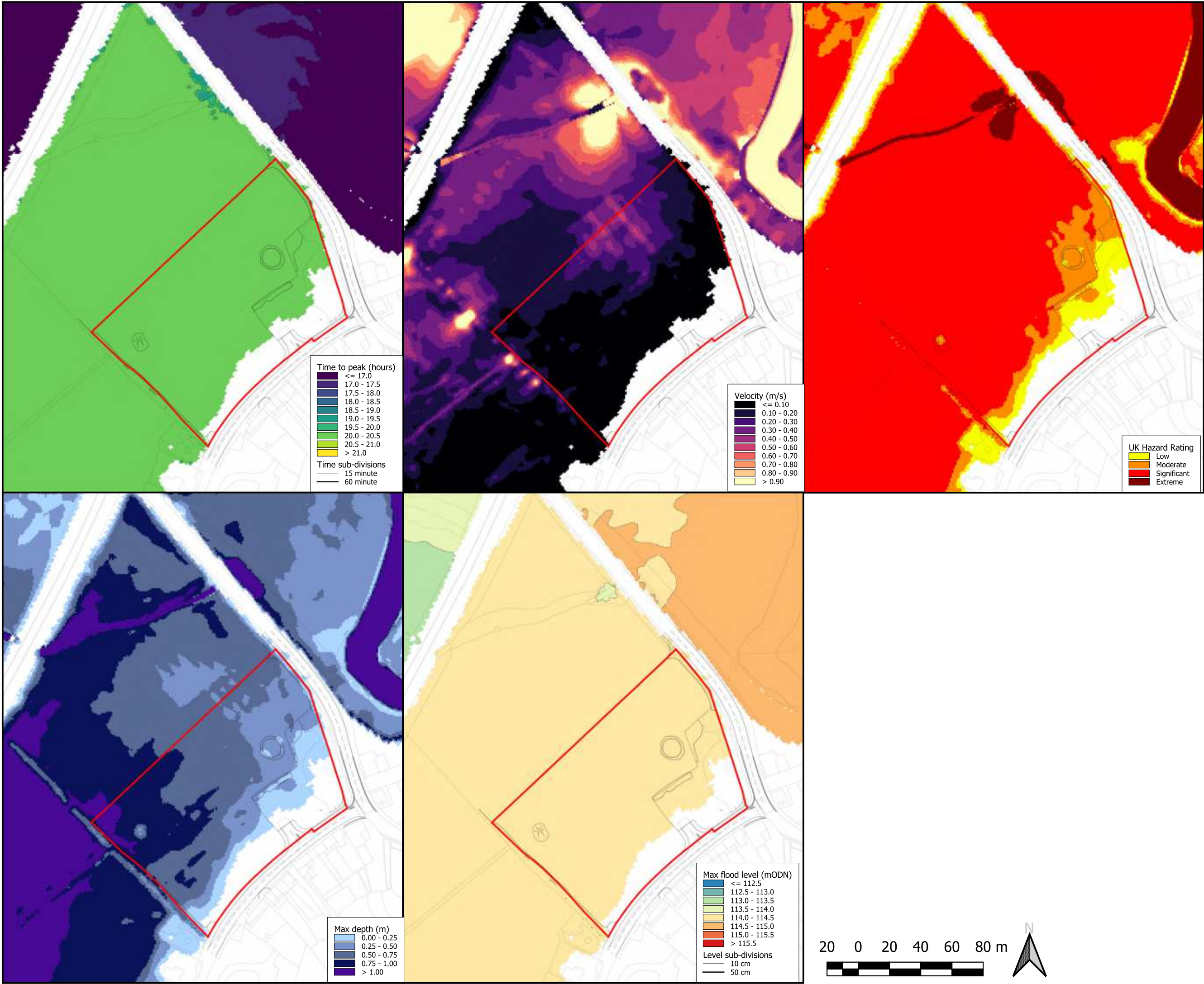
NW

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DRAWING No.

A.2



TITLE

EXISTING CONDITIONS
3.3%AEP EVENT
PRESENT DAY

LEGEND

 Site boundary

DETAILS

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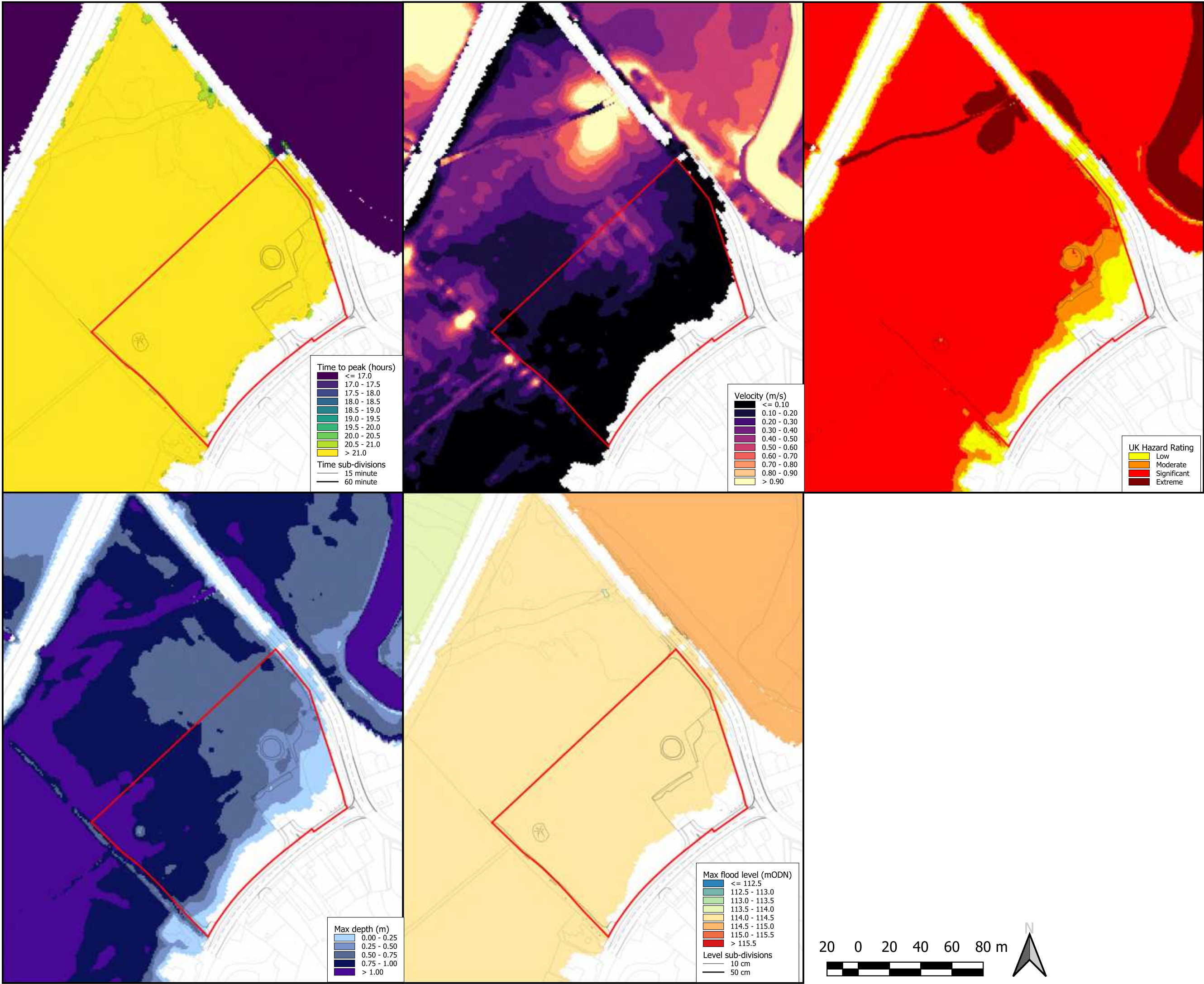
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6	6th issue	16-12-2025

CLIENT	LUCION GROUP		
PROJECT	LIDL, LAMPETER		
SCALE	PROJECT No.	INITIALS	CHECKED BY
1:2191 @ A3	4112	NW	--
DRAWING No.	A.3		



TITLE

EXISTING CONDITIONS
3.3%AEP EVENT
YEAR 2125

LEGEND

Site boundary

DETAILS

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6	6th issue	16-12-2025

CLIENT

LUCION GROUP

PROJECT

LIDL, LAMPETER

SCALE

1:2191 @ A3

PROJECT No.

4112

INITIALS

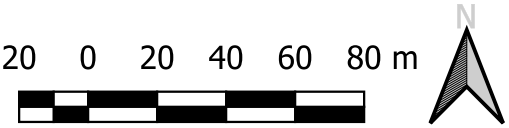
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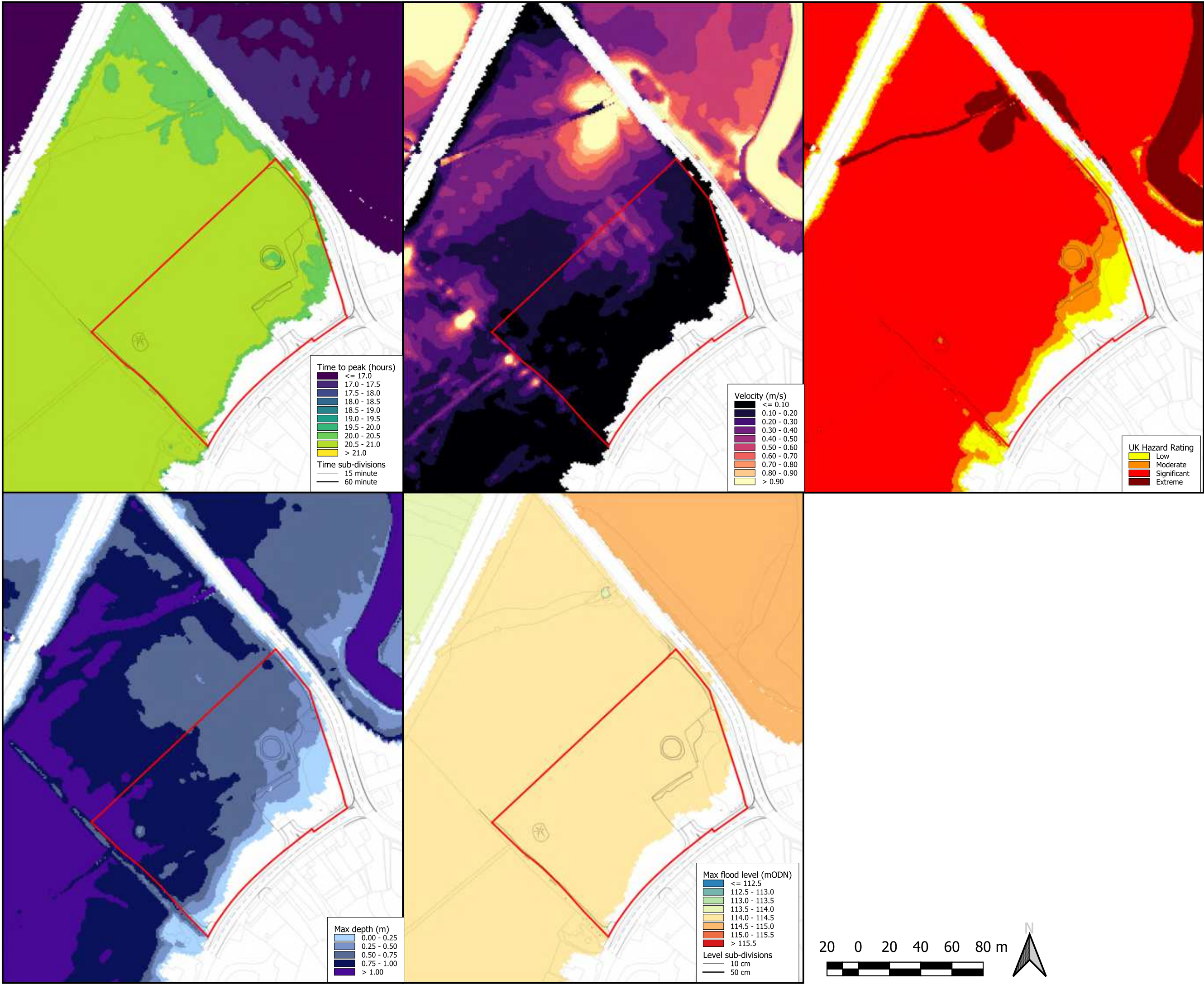
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DRAWING No.

A.4





TITLE
EXISTING CONDITIONS
1.25%AEP EVENT
PRESENT DAY

LEGEND
 Site boundary

DETAILS

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CLIENT
LUCION GROUP

PROJECT
LIDL, LAMPETER

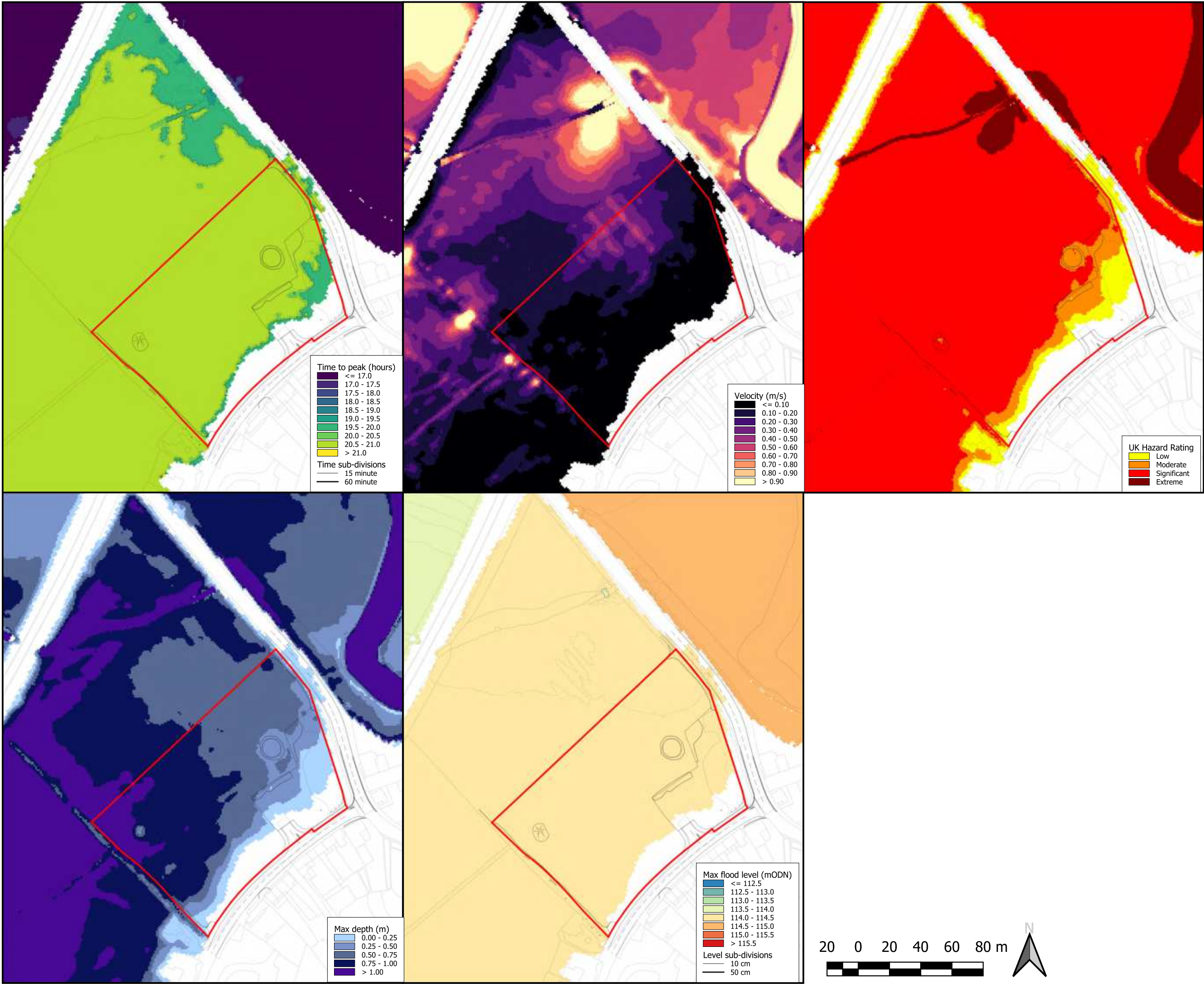
SCALE
1:2191 @ A3

PROJECT No.
4112

INITIALS
NW

CHECKED BY

DRAWING No.
A.5



TITLE
EXISTING CONDITIONS
1% AEP EVENT
PRESENT DAY

LEGEND
 Site boundary

DETAILS

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6	6th issue	16-12-2025

CLIENT
LUCION GROUP

PROJECT
LIDL, LAMPETER

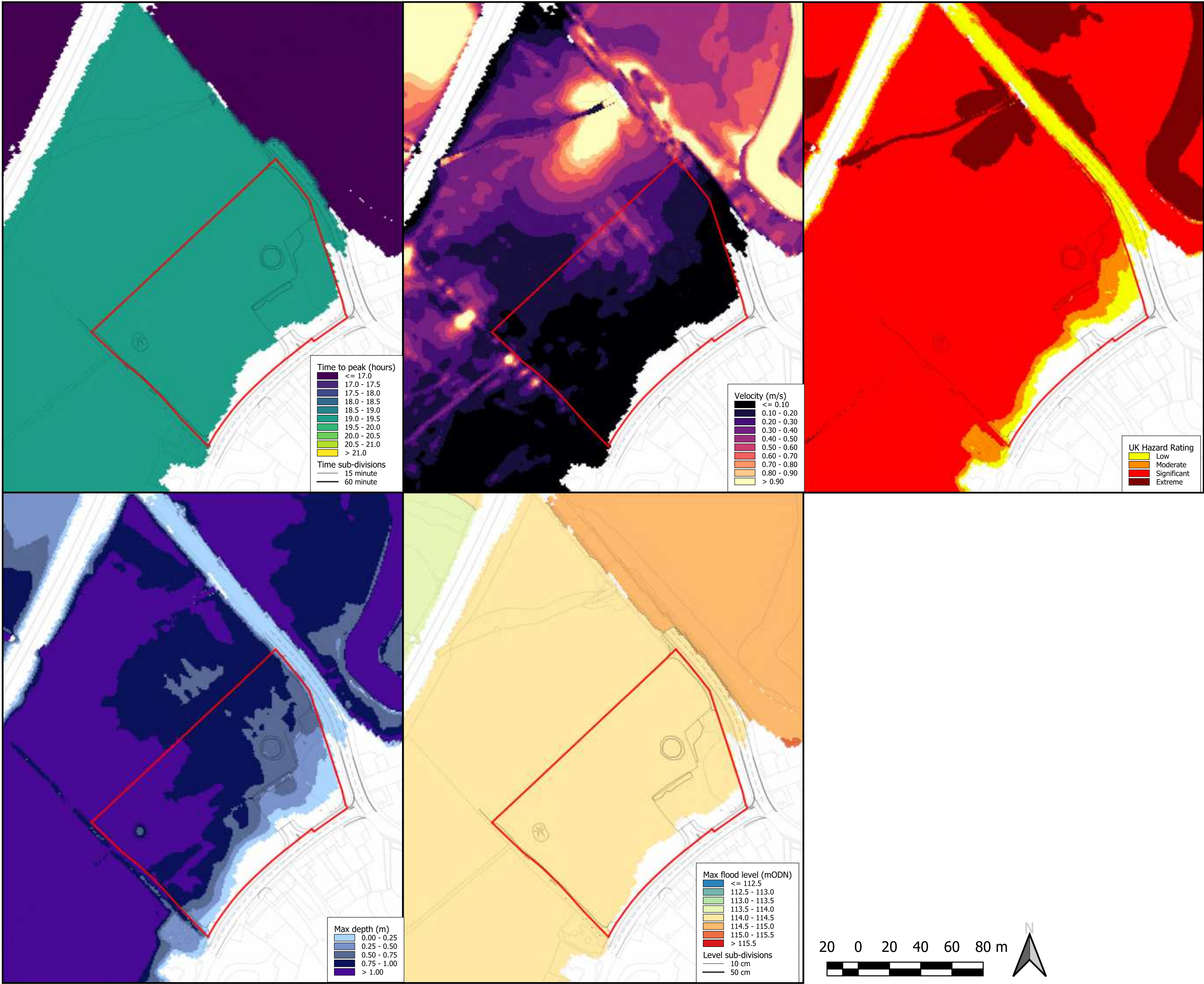
SCALE
1:2191 @ A3

PROJECT No.
4112

INITIALS
NW

CHECKED BY

DRAWING No.
A.6



TITLE

EXISTING CONDITIONS
1% AEP EVENT
YEAR 2125

LEGEND

Site boundary

DETAILS

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5	5th issue	11-08-2025
6	6th issue	16-12-2025

CLIENT

LUCION GROUP

PROJECT

LIDL, LAMPETER

SCALE

1:2191 @ A3

PROJECT No.

4112

INITIALS

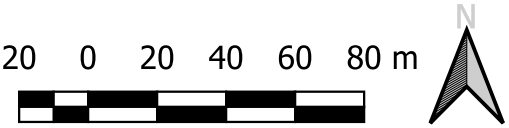
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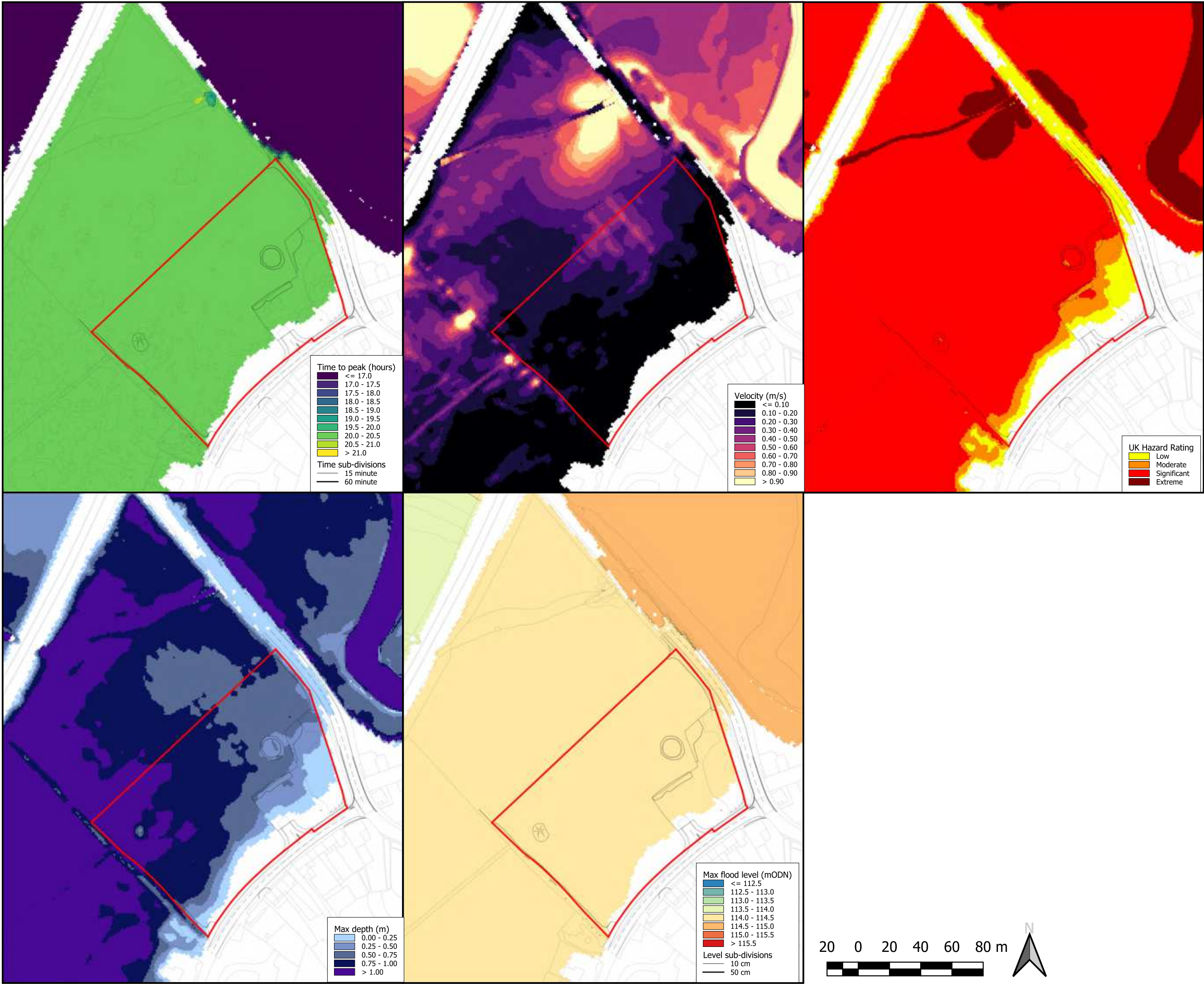
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DRAWING No.

A.7





TITLE
**EXISTING CONDITIONS
0.5% AEP EVENT
PRESENT DAY**

LEGEND
 Site boundary

DETAILS

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6	6th issue	16-12-2025

CLIENT
LUCION GROUP

PROJECT
LIDL, LAMPETER

SCALE
1:2191 @ A3

PROJECT No.
4112

INITIALS
NW

CHECKED BY
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DRAWING No.
A.8