Proposed Lidl Store, Pontymister, Risca

Flood Consequences Assessment & Drainage Strategy

January 2025

Waterco

Assessment | Modelling | Design

Project Information	
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Document History		
Revision	**Date**	**Comment**
01	29/11/2024	First issue
02	24/01/2025	Second issue – Updated with revised site layout

This report will remain valid for a period of twelve months (from the date of last issue) after which the source data should be reviewed in order to reassess the findings and conclusions on the basis of latest available information.

Contents

Appendices

Figures

Tables

Introduction

Waterco has been instructed to prepare a Flood Consequences Assessment (FCA) and Drainage Strategy in respect of a proposed Lidl Store at land south of Commercial Street, Pontymister, Risca, NP11 6EE.

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

This Flood Consequences Assessment has been supported by and should be read in conjunction with the Waterco Hydraulic Modelling Report (document reference 15679-HMR-01).

Existing Conditions

The site covers an area of 1.071 hectares (ha) and is located at National Grid Reference (NGR) 324388, 189885. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed November 2024) shows that the site comprises a storage yard (used for storage of building materials, containers etc). The site is bordered by Commercial Street, commercial buildings and a petrol filling station to the north, the B4591 (Newport Road) to the east, the Ebbw River to the south and commercial land use to the west. Access to the site is provided from Commercial Street.

Historical aerial imagery (Google Earth, accessed November 2024) shows that the site was previously occupied by a large industrial unit, covering an approximate footprint of 3,200m² (shown in place from prior to 2001 and demolished circa 2009 - 2010). The current use of the site for a storage yard has been in place since 2018.

Local Topography

A topographical and utilities survey has been undertaken by EDI Surveys Ltd in December 2023. The topographical survey shows that the site is relatively flat with levels varying from 44.41 metres Above Ordnance Datum (m AOD) in the north-east to 43.78m AOD in the south-west.

Topographic levels to m AOD have also been derived from a 1m resolution NRW composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). The LiDAR data generally corroborates with the topographical survey. Topographical data is included in Appendix B.

Ground Conditions

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 the St Maughans Formation consisting of argillaceous rocks and interbedded sandstone.

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

The closest historical BGS borehole record (BGS reference: ST28NW35) is located approximately 25m south-east of the site and is included in Appendix C together with a borehole location plan. The borehole record identifies:

- Medium dense fill (black ash clayey at base) to 1.50 metres below ground level (m.bgl).
- Fill (black clayey silty fine to coarse sand and gravel with a little ash from 1.5m.bgl to 2.76m.bgl.
- Medium dense and dense brown fine to coarse rounded sand and gravel and occasional cobbles from 2.76m.bgl to 10m.bgl.
- Groundwater was encountered at 2.90m.bgl.

According to NRW's Aquifer Designation data, obtained from the BGS GeoIndex online mapping [accessed November 2024], the superficial Alluvium deposits and underlying St Maughans Formation are classified as Secondary A Aquifers. 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'.

Local Drainage

Public sewer records have been obtained from Dwr Cymru Welsh Water (DCWW) and are included in Appendix D. The public sewer records show that there is a 900m public combined sewer in Commercial Street to the north of the site flowing east. There is also a 1200mm public surface water sewer located along the eastern boundary of the site. The public surface water sewer flows south and discharges into the Ebbw River, crossing the south-eastern corner of the site.

Existing utility records for the site, included in Appendix E, identify 2no. existing storm drains in the north-western extent of the site flowing north towards the public combined sewer in Commercial Street.

Development Proposals

The proposed development is for a Lidl Store with an associated access road and car park. Proposed development plans are included in Appendix E. Access will be provided via a new junction off Newport Road to the east and also from Commercial Street. The proposed finished floor level for the Lidl Store is 44.409m

AOD.

The proposed development will include hardstanding in the form of the Lidl Store, the site access road and the car park. Hardstanding will cover approximately 7,790m^2 or 73% of the developable site area. The remaining permeable, soft landscaped areas will occupy approximately 2,920m^2 or 27% of the developable site area. The total hardstanding area has been measured from a PDF copy of the Proposed Setting Out Plan (drawing 3067 P402U Proposed Setting Out Plan) and is approximate only.

Flood Zone Category and Policy Context

Flood Zone Category

The Welsh Government Development Advice Map, included in Appendix F, 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 F), shows that the site is located within Flood Zone 3 – an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding, including the effects of climate change.

Development Vulnerability Classification

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

TAN15 states that less 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 in the following sections. It is noted that 'less vulnerable' land use is currently present at the site. The development therefore retains the 'less vulnerable' land use classification.

Local Policy

The Caerphilly County Borough Council Local Development Plan (adopted November 2010) contains the following guidance relating to flood risk and drainage:

'*Promote resource efficient settlement patterns*

1.40 As a general principle the Plan seeks to locate development away from the floodplain. However where development is considered appropriate having regard to the role and function of settlements and can be justified within the context of TAN 15, suitable mitigation measures will need to be incorporated within the design of any new development to ensure that it is as safe as possible. In particular, where development is proposed in vulnerable areas, the need for a flood consequences assessment will be highlighted as a requirement of any future planning application on sites allocated in the LDP. These assessments will be prepared in consultation with the Environment Agency. Wherever possible in such locations, redevelopment will also be planned in such a way as to provide increased protection for existing vulnerable urban areas.'

Local guidance documents including the South East Wales Strategic Flood Consequences Assessment (SFCA) (November 2022) and the Caerphilly County Borough Council Preliminary Flood Risk Assessment (PFRA) (May 2011) have been reviewed and inform this report.

Consultation

A pre-development enquiry request was submitted to DCWW in November 2024 with respect to connecting development foul flows to the public combined sewer in Commercial Street. A response is included as Appendix D. DCWW have stated that:

'We have no objection for the domestic foul flows generated from this development to connect to the public sewer. Due to the size and strategic importance of the 900mm public trunk sewer in Commercial Street we advise that the flows can be communicated to the 225mm public combined sewer at or downstream of manhole ST24893901 located in Llanarth Square at the junction with Commercial Street as indicated on the extract of public sewer record provided. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted…

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

DCWW have also requested a 4m and 3.85m easement from the centre line of the 350mm water main and 110mm water main located within the western extent of the site respectively. The proposed store is located over 4m from the water mains.

Sources of Flooding and Probability

Fluvial

The nearest watercourse is the Ebbw River which is located immediately south of the site. The Ebbw River flows south-east in this location. Other watercourses in the area include 2no. unnamed watercourses located approximately 245m south of the site. Both watercourses become culverted in this location and are assumed to join the Ebbw River.

Fluvial flooding could occur if the Ebbw River overtopped its banks during or following an extreme rainfall event. Flooding could also occur or be exacerbated by a blockage of the B4591 (Newport Road) bridge located immediately south-east of the site.

The NRW 'Recorded Flood Extents' map (Appendix F) indicates that the western extent of the site falls within the extent of river flooding which occurred in December 1979. Since the December 1979 flooding, flood defences in the form of high ground and a flood wall have been constructed on the northern bank of the Ebbw River. The defences have a standard of protection of 100 years (meaning they protect the site and

surrounding area during a flood event with a 1 in 100 annual probability of occurrence).

Waterco Modelled Fluvial Output Data

The NRW integrated 1-Dimensional (1D) / 2-Dimensional (2D) hydraulic model of the Ebbw River and its tributaries has been obtained and updated by Waterco in November 2024 to quantify the existing flood risk to the site. Two scenarios, namely normal conditions (no structure blockages), and a 25% blockage at the B4591 Road Bridge, have been considered.

Full details of the hydraulic modelling and associated hydrology assessment are provided in the Waterco Hydraulic Modelling Report (reference 15679-HMR-01).

Modelled outputs including flood depth, water level, velocity and hazard mapping is included as Appendix G.

Normal Conditions Scenario

As shown in Figure 1, during the 1% Annual Exceedance Probability (AEP) event, the site is estimated the be flood free. Flooding is contained with the channel of Ebbw River immediately south of the site.

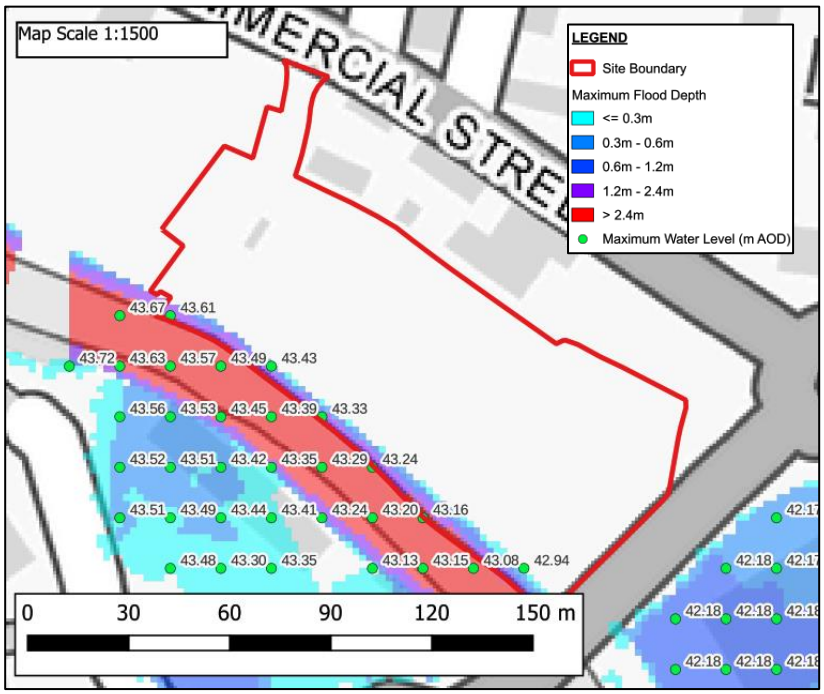


Figure 1 – 1% AEP Event – Water Levels and Depths

As shown in Figure 2, during the 1% AEP plus 25% climate change (CC) event, a small area in the westernmost extent of the site is estimated to flood. Flood depths up to 120mm are estimated and the maximum flood level is 43.38m AOD. No development is proposed within the 1% AEP plus 25% CC flood extent (flooding is constrained to a proposed landscaped area).

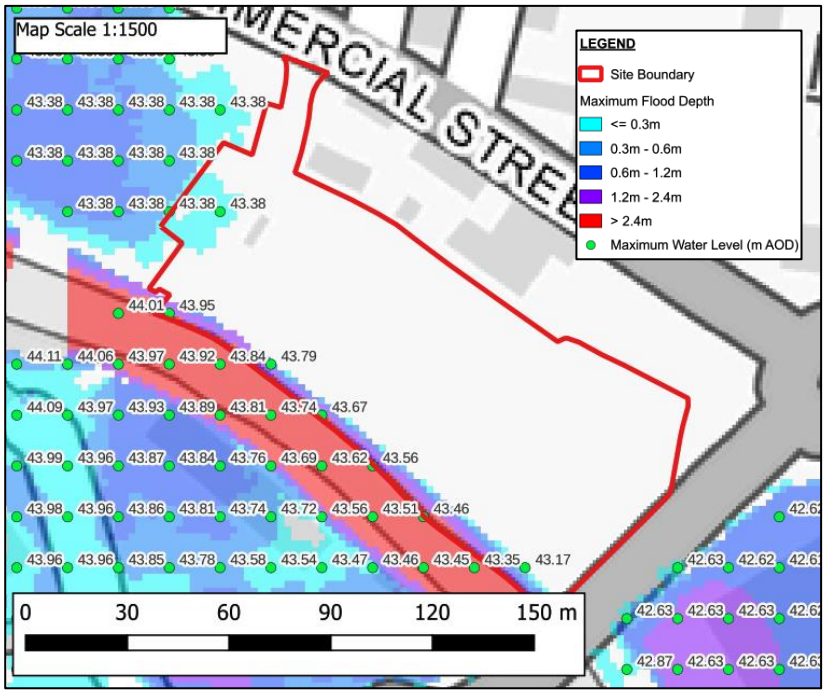


Figure 2 – 1% AEP plus 25% CC Event - Water Levels and Depths

As shown in Figure 3, during the 1% AEP plus 70% CC event, the site is estimated to flood with depths of up to 1.54m in the western extent of the site. The maximum flood level is 44.82m AOD. Flood depths and water levels reduce towards the eastern extent of the site. The maximum flood level in the location of the proposed Lidl store is 44.72m AOD.

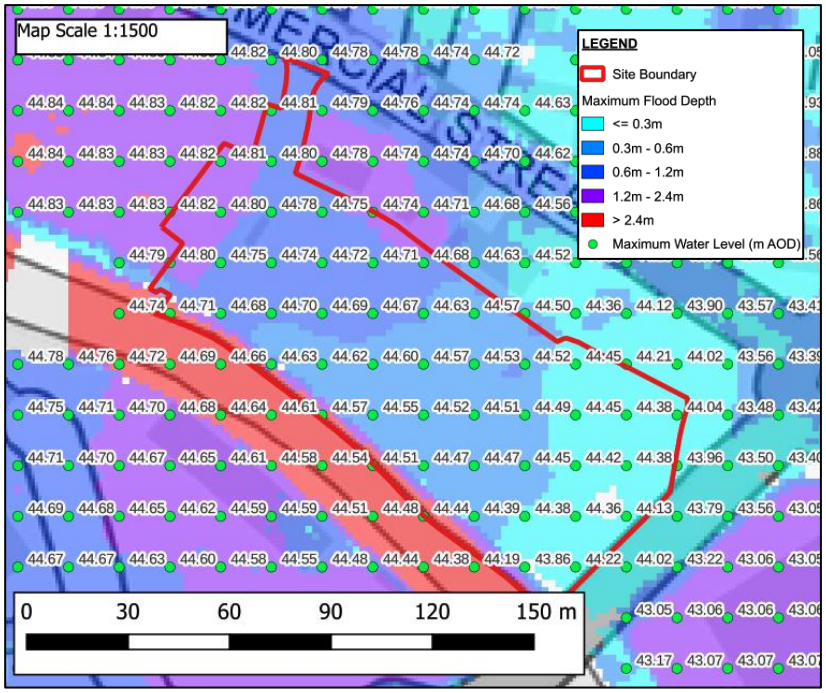


Figure 3 – 1% AEP plus 70% CC Event - Water Levels and Depths

As shown in Figure 4, during the 0.1% AEP event, the site is estimated to flood with depths of up to 1.35m in the westernmost extent of the site. The maximum flood level is 44.63m AOD. Flood depths and water levels

reduce towards the eastern extent of the site. The maximum flood level in the location of the proposed Lidl store is 44.56m AOD.

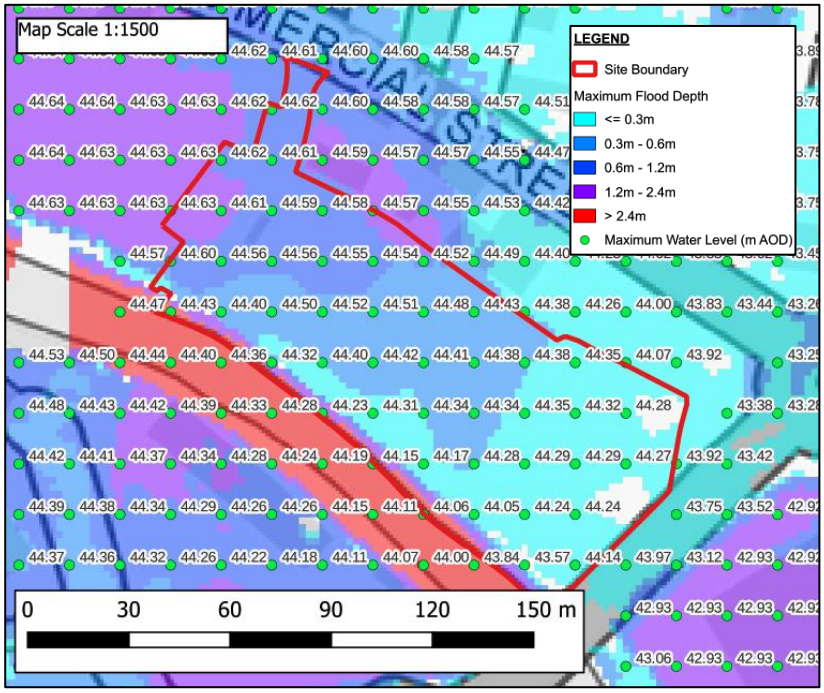


Figure 4 – 0.1% AEP Event - Water Levels and Depths

Blockage Scenario

As shown in Figure 5, during the 1% AEP plus 25% CC blockage event, the site is estimated to flood with depths of up to 1.51m in the western extent of the site. The maximum flood level is 44.78m AOD. Flood depths and water levels reduce towards the eastern extent of the site. The maximum flood level in the location of the proposed Lidl store is 44.76m AOD.

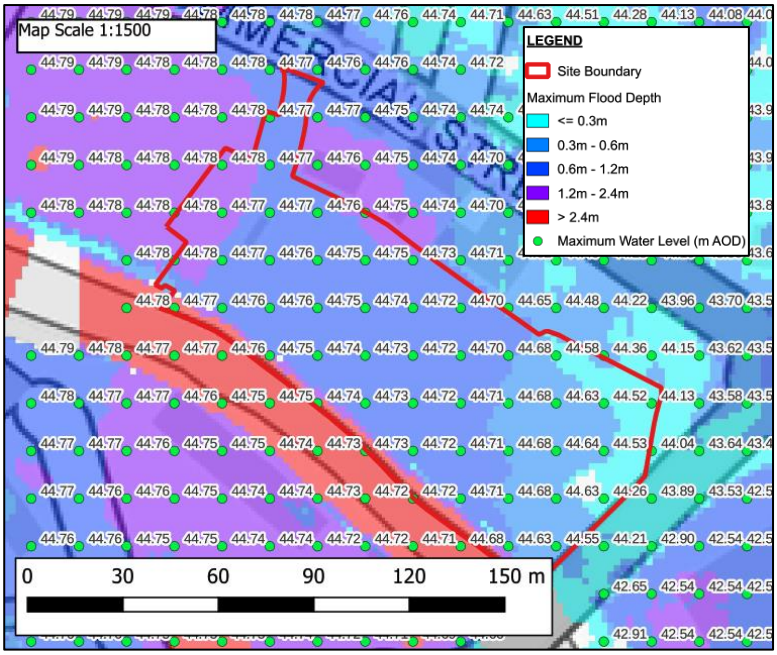


Figure 5 –1% AEP plus 25% CC Blockage Event - Water Levels and Depths

As shown in Figure 6, during the 1% AEP plus 70% CC blockage event, the site is estimated to flood with depths of up to 1.86m in the western extent of the site. The maximum flood level is 45.14m AOD. Flood depths and water levels reduce towards the eastern extent of the site. The maximum flood level in the location of the proposed Lidl store is 45.09m AOD.

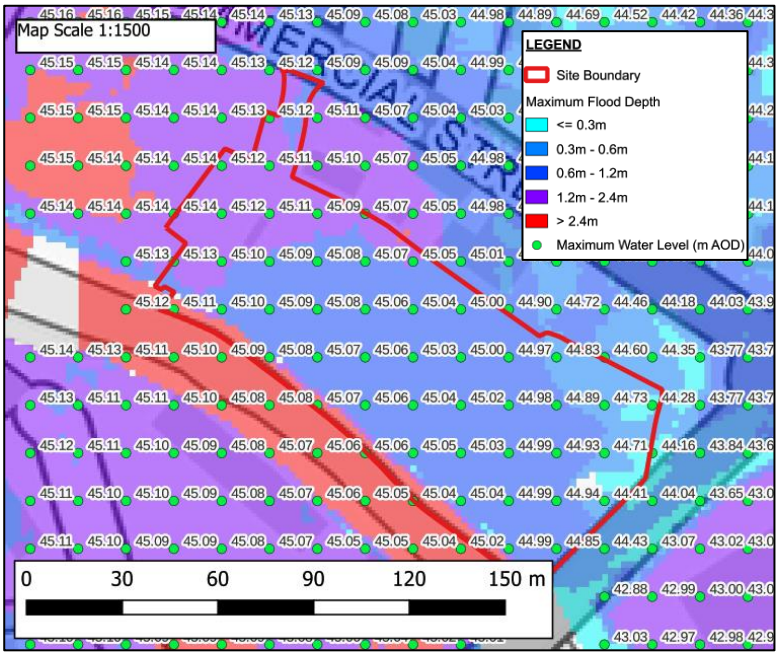


Figure 6 – 1% AEP plus 70% CC Blockage Event - Water Levels and Depths

As shown in Figure 7, during the 0.1% AEP blockage event, the site is estimated to flood with depths of up to 1.74m in the westernmost extent of the site. The maximum flood level is 45.01m AOD. Flood depths and water levels reduce towards the eastern extent of the site. The maximum flood level in the location of the proposed Lidl store is 44.98m AOD.

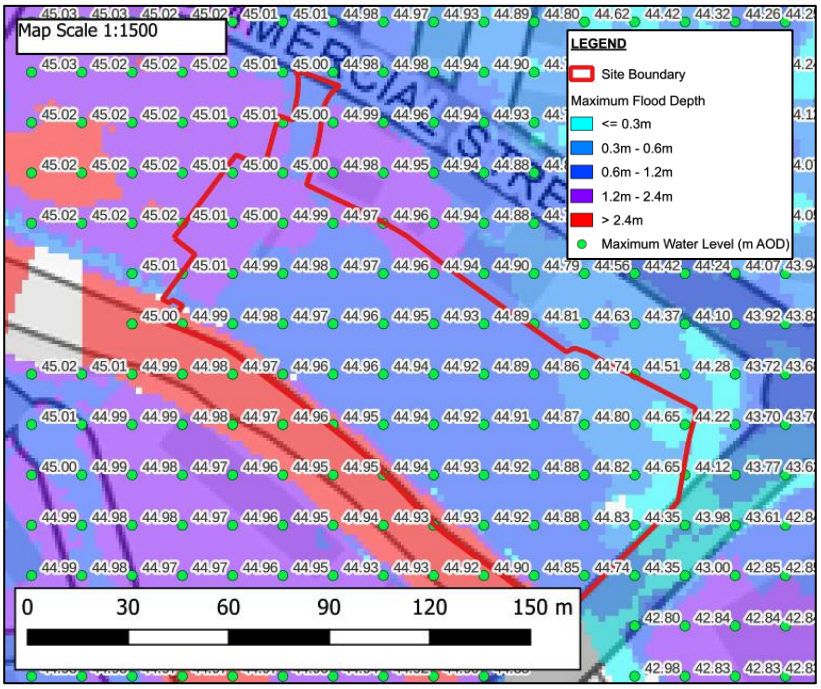


Figure 7 – 0.1% AEP Blockage Event - Water Levels and Depths

It can therefore be concluded that under normal conditions, all development is flood free during all events up to and including the 1% AEP plus 25% CC event. The site is at risk of fluvial flooding during the 1% AEP plus 70% CC event and the 0.1% AEP event. A blockage of the B4591 road bridge results in additional flooding at the site with flooding estimated in the location of the proposed Lidl Store during the 1% AEP plus 25% CC blockage event.

Tidal

The site is situated at a minimum of 43.78m AOD and is 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 'Flood Zones Surface Water and Small Watercourses' map (Appendix F) shows that the majority of the site is at very low risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding. Small areas in the northernmost and easternmost extents of the site are shown to fall within surface water Flood Zone 2, defined as having between a 1% and 0.1% annual probability of flooding, including the effects of climate change.

The surface water flood risk identified on NRW mapping is associated with surface water ponding in isolated topographical low points. There are no surface water flood flow routes affecting the site.

Any potential surface water flooding arising at or near to the site would be directed south-east, away from the site, following the local topography. As part of the development, a new drainage system will be installed at the site which will accommodate the 1 in 100 year plus 40% climate change event. With the new drainage system installed, the risk of surface water flooding will be very low.

It can therefore be concluded that the risk of surface water flooding is very 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 900mm public combined sewer in Commercial Street to the north of the site flowing east. There is also a 1200mm public surface water sewer located along the eastern boundary of the site which flows south and discharges into the Ebbw River.

Any potential flooding of the 900mm public combined sewer in Commercial Street would be directed east, away from the site, following the topography of the road. Any potential flooding of the 1200mm public surface water sewer would be directed south and into Ebbw River. There are no distinct flow routes in the area which would direct any potential sewer flooding towards the site.

There are no records of sewer flooding affecting the site and it can therefore be concluded that the risk of sewer flooding is very 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.

As described above, groundwater was encountered in a nearby borehole (25m south-east of the site) at 2.90m.bgl. A high water table may be present at the site due to the proximity of the Ebbw River.

The Caerphilly County Borough Council PFRA states that '*there are no historic groundwater flooding records with consequences'*. There are no records of groundwater flooding affecting the site.

The site will be 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 'Flood Risk from Reservoirs' map (Appendix F) shows that the site is at risk of flooding from a failure of the following reservoirs:

Table 1 – NRW Flooding from Reservoirs

Name	Location (NGR)	Owner
Pen-y-Fan Pond	319660, 200522	Caerphilly County Borough Council
Blaen-y-Cwm	317380, 213110	Dŵr Cymru Welsh Water

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.

It can therefore be concluded that the risk of flooding from artificial sources is very low.

Summary of Potential Flooding

It can be concluded that fluvial flooding from the Ebbw River is the main potential source of flood risk to the site. The associated risk has been used to inform mitigation design.

Mitigation

The site is identified at risk of fluvial flooding. The location of the proposed Lidl Store, the car park and the access road is flood free during the 1% AEP plus 25% CC event (under normal conditions).

Flood levels in the location of the Lidl store for a range of events are summarised below:

- 1% AEP plus 70% CC (normal conditions): 44.72m AOD
- 0.1% AEP (normal conditions): 44.56m AOD
- 1% AEP plus 25% CC blockage event: 44.76m AOD
- 1% AEP plus 70% CC blockage event: 45.09m AOD
- 0.1% AEP blockage event: 44.98m AOD.

It is proposed to set the finished floor level of the Lidl Store at 44.409m AOD. For access reasons, it is not practical to raise the finished floor level further. Flood depths internal to the store area less than 600mm during all considered events with exception of the 1% AEP plus 70% CC blockage event, where depths internal to the store are estimated at 681mm.

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

- use robust construction materials (engineering bricks) to a height of 45.09m AOD.
- Raise electronic control units and sockets to a minimum height of 45.09m 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 demountable flood guards to all doors.
- Seal cable entry points.
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives.

Flood Warnings and Evacuation

Flood Warnings are available for the Ebbw River. Site management and staff should register to receive Flood Warnings. Flood Warnings is a free service that provides prior warning of a fluvial flood event.

The site management should prepare a flood plan to inform staff of the flood risk and to provide advice on what to do when a Flood Warning is in place. When a Flood Warning is in place, the store should be closed to the public and all staff and customers should leave the site. A flood evacuation route plan is included as Appendix H and shows the fastest route to safety in the event of a flood.

Impact on Flood Risk Elsewhere

To quantify the impact of the proposed development on flood risk elsewhere, hydraulic modelling has been undertaken to compare flood depths and water levels in the existing and proposed development scenarios. The development scenario model considers the footprint of the proposed Lidl Store and any changes to site levels. Minor modifications to site levels are proposed through cut and fill. No material will be imported onto site to facilitate ground level modifications. A proposed site levels strategy plan is included in Appendix E.

Water level difference mapping has been prepared showing relative water level changes across the wider floodplain and is included in Appendix G. During the 1% AEP plus 70% CC and 0.1% AEP events, there is an increase in flood depths west and north-west of the site along Commercial Street. During the 0.1% AEP event, there is a general increase of up to 30mm in flood depths to land west and north-west of the site.

The modelled assessment of impact on flood risk elsewhere is based on a comparison of existing topographical site levels with proposed site levels (including the footprint of the proposed Lidl Store). The modelled assessment does not take into account the existing site use.

The site is currently used as a yard to store building materials, shipping containers and similar items. The current site owner could theoretically store a substantial quantity of stock and materials on site which would remove flood water storage. When compared against the theoretical existing use (the whole site could be used for storage, thereby removing substantial flood storage), the proposed Lidl Store would provide betterment in terms of flood risk through provision of landscaped areas, access roads and the car park which would allow for floodwater storage.

It is also noted that the site previously comprised a large industrial unit covering approximately 3,200m² which was demolished circa 2010. The footprint of the proposed Lidl Store is approximately 2,023m². When compared against the historic land use, the development will reduce the building footprint on site and will increase flood storage.

It is further noted that the development would reduce the risk of blockage the adjacent B4591 road bridge when compared to the existing land use. The materials / stock currently stored on site i.e. shipping containers and building materials, could be mobilised in flood water and cause blockage of the B4591 bridge or downstream structures.

When compared against the existing site use, the proposed development is considered to provide a betterment (reduction) in off-site flood risk.

Justification

In accordance with TAN15, less 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.

With reference to point i) above, the development will sustain an existing settlement through the redevelopment of a brownfield site. The development will also provide employment opportunities.

With reference to point iii) above, the site comprises a storage yard and therefore meets the definition of

previously developed land.

The acceptability of the consequences of a flooding event have been considered in this FCA. All developable areas of the site are shown to be flood free during the 1% AEP plus 25% CC event (under normal conditions). The development is therefore considered to comply with A1.14 of TAN15. Flood depths internal to the store are less than 600mm during the 0.1% AEP event. The proposed store therefore complies with A1.15 of TAN15.

Surface Water Management

The proposed development will introduce approximately 7,790m^2 of hardstanding in the form of the Lidl store, the site access road and the car park.

In order to ensure the proposed development will not increase flood risk elsewhere, surface water discharge from the site will be controlled and attenuation storage will be provided to accommodate storm events up to and including the 1 in 100 year plus 40% CC event.

Discharge Method

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

> *Priority Level 1: Surface water runoff is collected for use;*
>
> *Priority Level 2: Surface water runoff is infiltrated to ground;*
>
> *Priority Level 3: Surface water runoff is discharged to a surface water body;*
>
> *Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;*
>
> *Priority Level 5: Surface water runoff is discharged to a combined sewer.*

Priority Level 1: Surface water runoff collected for use

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

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

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

not considered a cost-effective solution for managing surface water runoff.

Priority Level 2: Surface water runoff is infiltrated to ground

As described above, the site is underlain by alluvium consisting of clay, silt, sand and gravel.

Given the proximity of the site to the Ebbw River, groundwater levels may be high and as such would limit the feasibility of infiltration drainage techniques. G3.32 of the Statutory standards for sustainable drainage systems states that there should be a minimum depth of unsaturated ground of 1m between the base of any infiltration system and the maximum likely groundwater level.

It is also noted that the site has previous industrial use and that a petrol filling station is located immediately north of the site.

Ground investigations should be undertaken to confirm groundwater levels and any potential contamination risk. Where no contamination risk is identified and groundwater levels are not a constraint, infiltration testing should be undertaken in accordance with the BRE365 specification to determine the feasibility of infiltration techniques.

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

Where infiltration is not suitable (subject to the findings of ground investigations), a connection to a watercourse is the next consideration. The nearest watercourse is the Ebbw River which forms the southern boundary of the site. Discharge to the Ebbw River, at a limited discharge rate appears to be feasible. The Ebbw River is a designated Main River and a flood risk activity permit would be required for any new outfall structures.

An indirect connection to the Ebbw River could also be explored through connection to the 1200mm public surface water sewer which is shown to cross the south-eastern extent of the site on DCWW sewer records.

As shown on the topographical survey (Appendix B), the Ebbw River is situated at approximately 41.4m AOD (level at the water's edge during the survey date in December 2023). The minimum proposed site level is 43.4m AOD. As such, a gravity connection can be achieved.

A non-return valve should be fitted on any surface water drainage outfalls.

Discharge Rate

In order to establish the proposed limited discharge rate, greenfield runoff rates have been estimated using the ICP SUDS method within MicroDrainage. A summary of greenfield runoff rates is provided as Appendix I. The 1 in 1 year greenfield runoff rate for the 1.071ha site is 6.3 l/s. A limited discharge rate of 6.3 l/s is therefore proposed.

Attenuation Storage

In order to achieve a discharge rate of 6.3 l/s, attenuation storage will be required. An attenuation storage estimate has been provided using MicroDrainage and is included in Appendix J. An estimate storage volume of 753m³ will be required to accommodate the 1 in 100 year plus 40% CC event. The storage estimate is based

on a discharge rate of 6.3 l/s, storage within a tank structure, an impermeable drainage area of 7,790m^2, a design head of 0.8m and hydro-brake flow control.

The attenuation storage volume should be verified at the detailed drainage design stage.

Sustainable Drainage Systems

Attenuation storage will be provided in the form of a below ground attenuation tank beneath the car park in the eastern extent of the site. A 40m long x 25m wide x 0.8m deep geo-cellular storage tank (with a 95% void ratio) would provide 760m^3 of attenuation volume, sufficient to accommodate the 1 in 100 year plus 40% CC event.

In addition to the attenuation tank, rain gardens will be utilised within landscaped areas to provide amenity and biodiversity benefits. Rain-gardens could be positioned in the landscaped area in the eastern extent of the site. Rain-gardens (and other SuDS) are not permitted in the landscaped area in the western extent of the site due to the 4m easement associated with the DCWW water main in this location.

Permeable surfacing could also be used for all parking spaces (areas not frequented by HGV's). The sub-grade of the permeable surfacing would be formally drained to the attenuation tank.

Concept Surface Water Drainage Scheme

Where infiltration techniques are not feasible, surface water will be discharged to the Ebbw River located to the south of the site at a limited 1 in 1 year greenfield runoff rate of 6.3 l/s. Surface water runoff up to the 1 in 100 year plus 40% CC event will be attenuated on site. A total attenuation volume of 753m^3 will be required to achieve the discharge rate and will be provided in the form of an attenuation tank located beneath the car park in the eastern extent of the site. Raingardens and permeable surfacing will also be used to provide amenity and biodiversity benefits.

The proposed surface water drainage scheme will ensure no increase in runoff over the lifetime of the development.

A Concept Drainage Sketch is included in Appendix K.

Exceedance Event

Storage will be provided for the 1 in 100 year plus 40% CC event. Storm events in excess of the 1 in 100 year plus 40% CC event will be permitted to produce temporary shallow depth flooding within the car park.

Surface Water Treatment

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

S3 - Surface water quality management

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

In accordance with the CIRIA C753 publication 'The SuDS Manual' (2015), commercial roofs have a 'low' pollution hazard level, with non-residential car parking with frequent change classified as having a 'medium' pollution hazard level. Table 2 shows the pollution hazard indices for each land use.

Table 2 – Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Commercial Roofs	Low	0.3	0.2	0.05
Non-residential car parking	Medium	0.7	0.6	0.7

Table extract taken from the CIRIA C753 publication 'The SuDS Manual' – Table 26.2
* Indices values range from 0-1.

Runoff from the roof, car park and access road will be directed to an attenuation tank. Sufficient treatment will be provided in the form of a proprietary treatment system such as the SDS Aqua-filter stormwater filtration unit located downstream of the attenuation tank. Permeable surfacing will also provide an element of treatment to runoff from the parking bays. Table 3 shows that a proprietary treatment system such as the SDS Aqua Filter provides sufficient treatment.

Table 3 – SuDS Mitigation Indices

	Mitigation Indices		
Type of SuDS	Total Suspended Solids (TSS)	Metals	Hydrocarbons
SDS Aqua Filter	0.8	0.8	0.7
Permeable Paving	0.7	0.6	0.7

Table extract taken from the CIRIA C753 publication 'The SuDS Manual' – Table 26.3. SDS Aqua-filter data provided by the manufacturer.

Amenity

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

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

The proposed development will include rain gardens and permeable paving which will maximise the amenity value of the proposed drainage system.

Biodiversity

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

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

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

Construction, Operation and Maintenance

Standard S6 of the Statutory Standards for SuDS states:

S6 – Design of drainage for Construction, Operation and Maintenance

1) All elements of the surface water drainage system should be designed so that they can be constructed easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).

2) All elements of the surface water drainage system should be designed to ensure maintenance and operation can be undertaken (by the relevant responsible body) easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy).

3) The surface water drainage system should be designed to ensure structural integrity of all elements under anticipated loading conditions over the design life of the development site, taking into account the requirement for reasonable levels of maintenance.

The development will be in private ownership and as such the drainage system will not be adopted by the SAB. Maintenance of the drainage system will be the responsibility of the site owner.

Maintenance schedules for an attenuation tank, permeable paving and bioretention systems (applicable to the rain gardens) are included in Appendix L.

Foul Drainage

A pre-development enquiry request was submitted to DCWW in November 2024 with respect to connecting development foul flows to the public combined sewer in Commercial Street. A response is included as Appendix D. DCWW have stated that:

'We have no objection for the domestic foul flows generated from this development to connect to the public sewer. Due to the size and strategic importance of the 900mm public trunk sewer in Commercial Street we advise that the flows can be communicated to the 225mm public combined sewer at or downstream of manhole ST24893901 located in Llanarth Square at the junction with Commercial Street as indicated on the extract of public sewer record provided. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted…

No problems are envisaged with the Wastewater Treatment Works for the treatment of domestic discharges

from this site.'

It is therefore proposed to discharge foul flows to the public combined sewer in Llanarth Square to the north of the site. A survey of the public combined sewer system should be undertaken to determine invert levels and establish whether a gravity connection can be achieved.

Conclusions

The proposed development is for a Lidl Store with an associated access road and car park.

Flood Risk

The site is located within Flood Zone C1 on the Welsh Government Development Advice Map – an area considered 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 main potential source of flooding at this site is fluvial flooding from the Ebbw River. Under normal conditions (no structure blockage), the site is flood free during all events up to and including the 1% AEP event. The majority of the site, including the location of all development is flood free during the 1% AEP plus 25% CC event.

During the 1% AEP plus 70% CC event, the site is estimated to flood. The maximum flood level in the location of the proposed Lidl Store is 44.72m AOD. During the 0.1% AEP event, the maximum flood level in the location of the proposed Lidl Store is 44.56m AOD. Flood levels and depths increase on site during a blockage of the adjacent B4591 road bridge.

It is proposed to set the finished floor level of the Lidl store at 44.409m AOD. For access reasons, it is not practical to raise the finished floor level further. Flood depths internal to the store are less than 600mm during the 1% AEP plus 70% CC and 0.1% AEP events. Flood resilience measures will be applied where practical to minimise the consequences of flooding during extreme flood events.

The site is currently used as a yard to store building materials, shipping containers and similar items. The current site owner could theoretically store a substantial quantity of stock and materials on site which would remove flood water storage. When compared against the theoretical existing use (the whole site could be used for storage, thereby removing substantial flood storage), the proposed Lidl Store would provide betterment in terms of flood risk through provision of landscaped areas, access roads and the car park which would allow for floodwater storage.

Drainage

The proposed development will introduce 7,790m^2 of hardstanding in the form of the Lidl store, its access road and car park. In order to ensure the proposed development will not increase flood risk elsewhere, surface water discharge from the site will be controlled and attenuation storage will be provided to accommodate storm events up to and including the 1 in 100 year plus 40% CC event.

All methods of surface water discharge have been assessed. Discharge of surface water to the Ebbw River at a limited 1 in 1 year greenfield runoff rate of 6.3 l/s appears to be the most practical option.

Attenuation storage will be required on site in order to restrict surface water discharge to 6.3 l/s. Attenuation can be provided in the form of a below ground attenuation tank located beneath the car park in the eastern extent of the site. In addition to the attenuation tank, raingardens and permeable paved parking bays will be utilised to provide amenity and biodiversity benefits.

Treatment of surface water will be provided by an SDS Aqua Filter stormwater filtration unit. The site owner will be responsible for the maintenance of the drainage system.

It is proposed to discharge foul flows to the public combined sewer in Llanarth Square to the north of the site.

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

Recommendations

1. Submit this Flood Consequences Assessment and Drainage Strategy to the Planning Authority in support of the Planning Application.

2. Install the flood resistance / resilience measures detailed in this report.

3. Undertake ground investigations to confirm groundwater levels and any potential contamination risk. Where no contamination risk is identified and groundwater levels are not a constraint, infiltration testing should be undertaken in accordance with the BRE365 specification to determine the feasibility of infiltration techniques.

4. Verify the attenuation volumes included in this report when undertaking detailed drainage design.

5. Survey the public combined sewer (manhole ST24893901 located in Llanarth Square) to determine invert levels and the requirement for a pumped solution for foul flows.

6. Obtain a flood risk activity permit for any works within 8m of the Ebbw River, including any new surface water drainage outfalls.

7. Submit a Sustainable Drainage Approval Body (SAB) application.

Appendix A Location and Aerial Plan

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

LEGEND

- Site Boundary
- Watercourses
- Waterbodies

CLIENT:
Lidl Great Britain Limited

waterco
www.waterco.co.uk

SCHEME:
Land at Pontymister, Risca

PLOT TITLE:
Location Plan

PLOT STATUS:	DATE:
FINAL	15-11-2024

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

PLOT NAME:	REVISION:
15679_Location_Plan	-

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

LEGEND

Site Boundary

CLIENT:
Lidl Great Britain Limited

www.waterco.co.uk

SCHEME:
Land at Pontymister, Risca

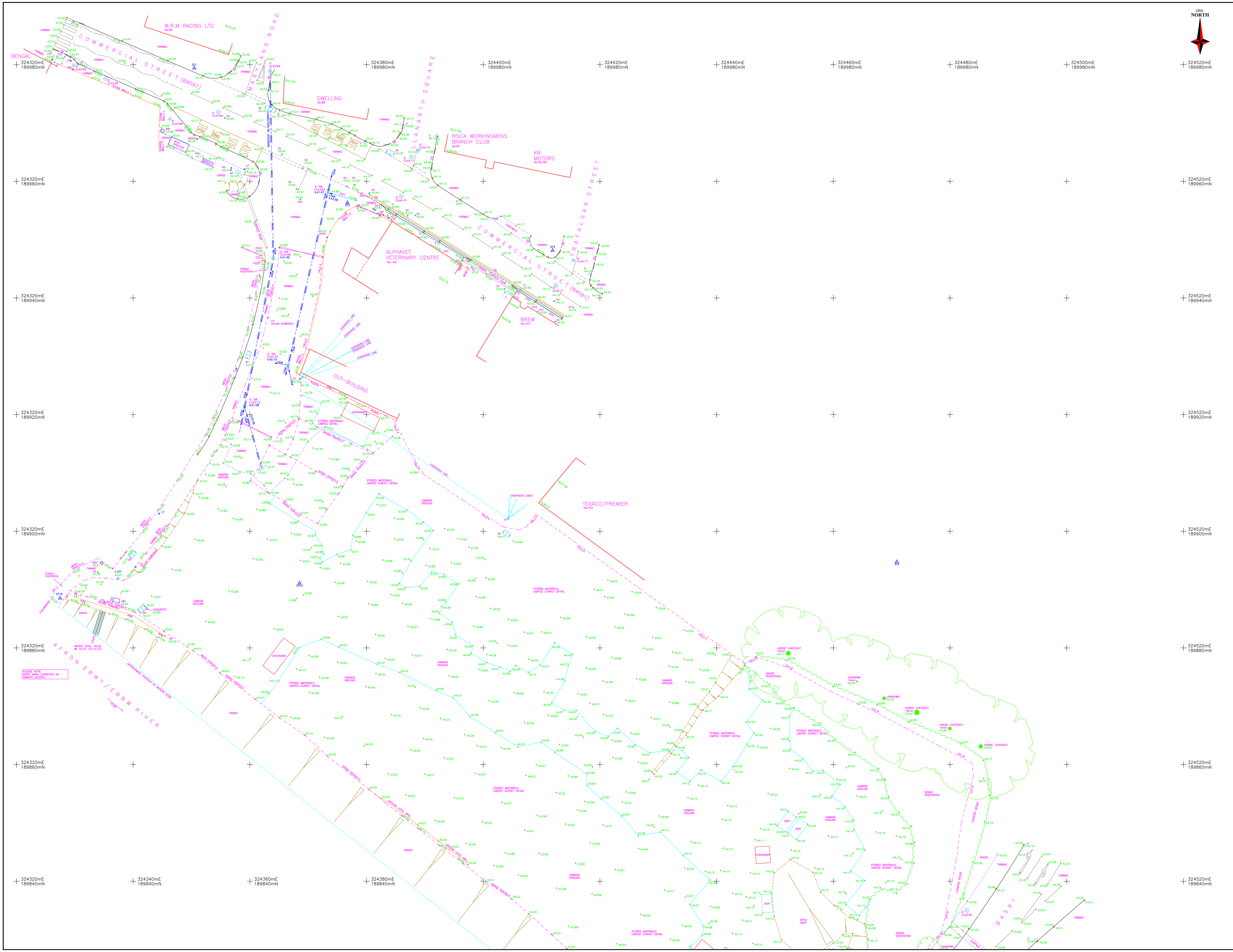
PLOT TITLE:
Aerial Plan

PLOT STATUS:	DATE:
FINAL	15-11-2024

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

PLOT NAME:	REVISION:
15679_Aerial_Plan	-

Appendix B Topographical Information



Original Drawing Size: A0

NOTES:–

The accuracy and content of the drawing is commensurate with the graphical scale of mapping and the original specification. The drawing should only be used for its original intended purpose.

Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded as approximate only. Unless indicated otherwise connections between inspection covers are shown as direct.

Tree species (where shown) are indicative, if crucial expert identification by an arborist is advised.

Boundary features may not represent the extent of legal ownership.

Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities. Even an appropriate and professionally executed survey may not be able to achieve a 100% detection rate. Where an area of utilities is likely to affect client project requirements, it is strongly recommended that a PAS128 Quality Level A verification survey is carried out.

LEGEND

Features:

AB Air Brick
ACU Air Conditioning Unit
AV Air Valve
BD Bollard
BH Borehole
BP Boundary Post
BS Bus Stop
BT British Telecom
CL Cover Level
COL Column
CTV Cable TV Cover
DCH Drainage Channel
DF Drinking Fountain
DIS Disused
DK Drop Kerb
DPC Damp proof Course
EIC Electricity IC
EJ Expansion Joint
ER Earth Rod
FB Flower Bed
FH Fire Hydrant
FHR Fire Hose Reel
FS Flagstaff
GV Gas Valve
G Gully
HR Handrail
IC Inspection Cover
IL Invert Level
JBX Junction Box
KO Kerb Outlet
LB Letter Box
LBN Litter Bin
LLP Low Level LP
LP Lamp Post
MP Marker Post
OHL Overhead Line
OP Overflow Pipe
PM Parking Meter
PP Power Pole
RAD Radiator
RE Rodding Eye
RNP Road Name Plate
RS Road Sign
RSD Roller Shutter Door
RWP Rain Water Pipe
SD Service Duct
SV Stop Valve
TCB Telephone Call Box
THL Threshold Level
TP Telegraph Pole
TS Traffic Signal
TW Top of Wall
UB Universal Beam
UNK Unknown
UR Urinal
UTL Unable To Lift
V Vent
VP Vent Pipe
WM Water Meter
WO Wash Out
WP Waste Pipe
VSB Vehicle Safety Barrier

Building Level Details:

D Door
EL Eave Level
FFL Floor Level
FRL Flat Roof Level
HL Head Level
PPL Parapet Level
RL Ridge Level
SL Sill Level
SP Springer of Arch
TA Top of Arch
W Window
12.34 Ceiling/Beam Soffit

Boundary Types:

BW Barbed Wire
BKW Brick Wall
CB Close Boarded
CH Chainlink
CI Corrugated Iron
CP Chestnut Paling
HM Hit and Miss
IR Iron Railing
IW Interwoven
LL Larch Lap
PAL Palisade
PI Picket
PR Post & Rail
PW Post & Wire
TKR Timber Knee Rail
RTW Retaining Wall
WMF Wire Mesh Fence

Surfaces & Finishes:

B Brickwork
BB Breeze Block
C Concrete
CLT Ceiling Tiles
CP Carpet
CPS Concrete Paving Slabs
CPT Carpet Tiles
CR Concrete Render
CT Ceramic Tiles
FT Floor Tiles
HBD Hardboard
L Linoleum
P Plaster
PAV Brick Paviors
S Steel work
T Tarmac
TSP Textured Safety Paving
VT Vinyl Tiles

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

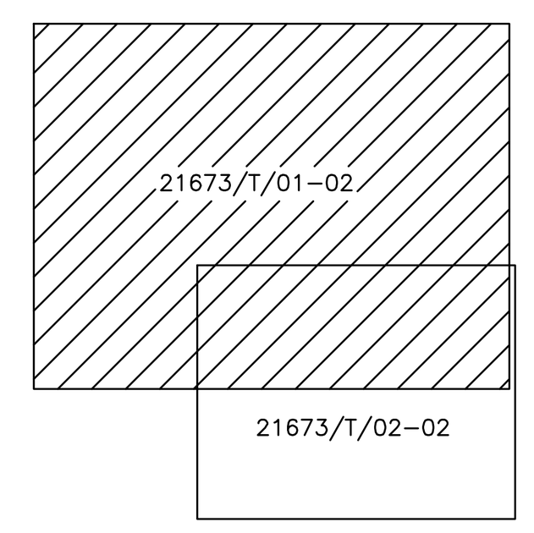
Utilities

C(B*) CATV Cables
E(B*) Electricity Cables
FL(B*) Fuel Pipes
G(B*) Gas Pipes
SD(B*) Service ducts
TC(B*) Traffic Control
GPR(B*) Unidentified GPR
W(B*) Water pipes
Overhead Lines
TFR Taken From Records
Extent of utility survey
CCTV(B*) CCTV Cables
FO(B*) Fibre Optic
FW(B*) Foul Water Drain
HD(B*) Heating duct
SW(B*) Storm water drain
T(B*) Telecom cables
EML(B*) Unidentified EML
UN(B*) Unidentified Trace
EOT End Of Trace
UTT Unable To Trace
NPV No Pipes Visible
150ø Pipe Diameter/Flow

Control: All levels and co-ordinates are related to the datums described.

The horizontal control of this survey is based on Ordnance Survey grid as translated from GPS coordinates using Leica's SmartNet service. We have applied a reverse scale factor to maintain true ground distances, based on station ST21. The vertical control of this survey is based on OS datum as translated from GPS coordinates using the OSGM15 transformation as supplied by the OS. This may differ from the existing OS benchmarks in the area which should be disregarded; all levels should be taken from EDI survey stations.

SHEET LAYOUT:



This survey has been carried out to PAS 128 Detection Method M2: EML search transects at 5m intervals and 2m for GPR.

Utility Depths:–
Depths obtained by EML are to the centre of the utility
Depths obtained by GPR are to the top of the utility
All depths are shown in metres in the format 0.7d

Utility Confidence Levels:–
(A) Horizontal and vertical position verified visually
(Accuracy: Horizontal (±25mm) Vertical(±50mm)
(B1) Horizontal and vertical position detected by multiple methods
(Estimated Accuracy: ±150mm OR ±15% of detected depth)
(B2) Horizontal and vertical position detected by a single method
(Estimated Accuracy: ±250mm OR ±40% of detected depth)
(B3) Horizontal position detected by a single method
(Estimated Accuracy: ±500mm in the Horizontal – Depth is undefined)
(B4) A utility segment which is suspected to exist but has not been detected and is therefore shown as an assumed route
(C) Route transcribed from utility asset plans and correlated to visual indicators and surface features (accuracy undefined)
(D) Route transcribed from utility asset plans (accuracy undefined)

Station Schedule

Station	Easting	Northing	Level	Type
1	324350.475	189979.404	43.730	Hilti Nail
2	324376.728	189956.332	43.916	Hilti Nail
3	324411.898	189948.152	44.248	Hilti Nail
4	324470.888	189894.771	43.801	Hilti Nail
19	324327.468	189888.519	44.361	Hilti Nail
20	324438.759	189790.113	44.453	Hilti Nail
21	324474.017	189821.908	43.853	Hilti Nail
C3	324368.506	189891.108	43.933	Hilti Nail

Rev	Job No	Date	Revision Detail	Surveyor	Check
–	---	--/--		--	--

CLIENT
Lidl Great Britain Ltd & Countrywide Farmers PLC
Waterton Industrial Estate
off Cowbridge Road
Bridgend
CF31 3PH

PROJECT
Topographic Survey & Buried Utilities
Commercial Street
Risca
Newport
NP11 6EE

Job No.	Surveyor	Checked	Date	Scale
21673	C.Chilvers	AR	Dec. 2023	1:200

EDI SURVEYS LTD
163–165 Ranelagh Road, Ipswich, Suffolk IP2 0AH
Telephone | 01473 211222
Email | admin@edisurveys.co.uk

DRAWING No. 21673/TU/01–02

REV. –

Original Drawing Size: A1

GRID NORTH

NOTES:-

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LEGEND

Features:

AB	Air Brick
ACU	Air Conditioning Unit
AV	Air Valve
BD	Bollard
BH	Borehole
BP	Boundary Post
BS	Bus Stop
BT	British Telecom
CL	Cover Level
COL	Column
CTV	Cable TV Cover
DCH	Drainage Channel
DF	Drinking Fountain
DIS	Disused
DK	Drop Kerb
DPC	Damp proof Course
EC	Electricity IC
EJ	Expansion Joint
ER	Earth Rod
FB	Flower Bed
FH	Fire Hydrant
FHR	Fire Hose Reel
FS	Flagstaff
GV	Gas Valve
GY	Gully
HR	Hand Rail
IC	Inspection Cover
IL	Invert Level
JBX	Junction Box
KO	Kerb Outlet
LB	Letter Box
LBN	Litter Bin
LLP	Low Level LP
LP	Lamp Post
MP	Marker Post
OHL	Overhead Line
OP	Overflow Pipe
PM	Parking Meter
PP	Power Pole
RAD	Radiator
RE	Rodding Eye
RNP	Road Name Plate
RS	Road Sign
RSD	Roller Shutter Door
RWP	Rain Water Pipe
SD	Service Duct
SV	Stop Valve
TCB	Telephone Call Box
THL	Threshold Level
TP	Telegraph Pole
TS	Traffic Signal
TW	Top of Wall
UB	Universal Beam
UNK	Unknown
UR	Urinal
UTL	Unable To Lift
V	Vent
VP	Vent Pipe
WM	Water Meter
WO	Wash Out
WP	Waste Pipe
VSB	Vehicle Safety Barrier

Building Level Details:

D	Door
EL	Eave Level
FFL	Floor Level
FRL	Flat Roof Level
HL	Head Level
PPL	Parapet Level
RL	Ridge Level
SL	Sill Level
SP	Springer of Arch
TA	Top of Arch
W	Window
(C) W	Ceiling/Beam Soffit

Boundary Types:

BW	Barbed Wire
BWK	Brick Wall
CB	Close Boarded
CH	Chainlink
CI	Corrugated Iron
CP	Chestnut Paling
HM	Hit and Miss
IR	Iron Railing
IW	Interwoven
LL	Larch Lap
PAL	Palisade
PI	Picket
PR	Post & Rail
PW	Post & Wire
TKR	Timber Knee Rail
RTW	Retaining Wall
WMF	Wire Mesh Fence

Surfaces & Finishes:

B	Brickwork
BB	Breeze Block
C	Concrete
CLT	Ceiling Tiles
CT	Carpet
CPS	Concrete Paving Slabs
CPT	Carpet Tiles
CR	Concrete Render
CT	Ceramic Tiles
FT	Floor Tiles
HBD	Hardboard
L	Linoleum
P	Plaster
PAV	Brick Paviors
S	Steel work
T	Tarmac
TSP	Textured Safety Paving
VT	Vinyl Tiles

Building — Overhead Building Detail — Wall — Tree — Kerb/Drop Kerb

Survey Station — Fence — Gate — Painted Road Markings — Edge of Vegetation — Banks

Utilities

C(BP)-	CATV Cables
E(BP)-	Electricity Cables
FL(BP)-	Fuel Pipes
G(BP)-	Gas Pipes
SD(BP)-	Service ducts
TC(BP)-	Traffic Control
GPR(BP)-	Unidentified GPR
W(BP)-	Water pipes
	Overhead Lines
TFR	Taken From Records
	Extent of utility survey
CCTV(BP)-	CCTV Cables
FO(BP)-	Fibre Optic
FW(BP)-	Foul Water Drain
HO(BP)-	Heating duct
SW(BP)-	Storm water drain
TI(BP)-	Telecom cables
UNK(BP)-	Unidentified EML
UNK(BP)-	Unidentified Trace
EOT	End Of Trace
UTT	Unable To Trace
NPV	No Pipes Visible
150ø	Pipe Diameter/Flow

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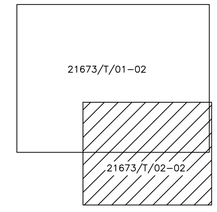

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Rev	Job No	Date	Revision Detail	Surveyor	Check
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CLIENT

Lidl Great Britain Ltd & Countrywide Farmers PLC
Waterton Industrial Estate
off Cowbridge Road
Bridgend
CF31 3PH

PROJECT

Topographic Survey & Buried Utilities
Commercial Street
Risca
Newport
NP11 6EE

Job No.	Surveyor	Checked	Date	Scale
21673	C.Chilvers	AR	Dec. 2023	1:200

EDI SURVEYS LTD
163-165 Ranelagh Road, Ipswich, Suffolk IP2 0AH
Telephone | 01473 211222
Email | admin@edisurveys.co.uk
Our Services:- Topographic Surveys, Measured Building Surveys, GPS Surveying and Control, 3D Laser Scanning, UAV Surveys, Utility Surveying and CCTV Drainage Investigation.
Click the link below to visit our website and find out more.
www.edisurveys.co.uk
constructionline | THE SURVEY ASSOCIATION | ISO 9001 REGISTERED FIRM

DRAWING No. 21673/TU/02-02 | REV. -

This survey has been carried out to PAS 128 Detection Method M2: EML search transects at 5m intervals and 2m for GPR.

Utility Depths:-
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All depths are shown in metres in the format 0.7d

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PLEASE NOTE: RTW HAS BEEN SURVEYED VIA REMOTE ACCESS.

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

LEGEND

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

Ground Elevations (m AOD)

- <= 42
- 42 - 44
- 44 - 46
- 46 - 48
- > 48

CLIENT:
Lidl Great Britain Limited

waterco
www.waterco.co.uk

SCHEME:
Land at Pontymister, Risca

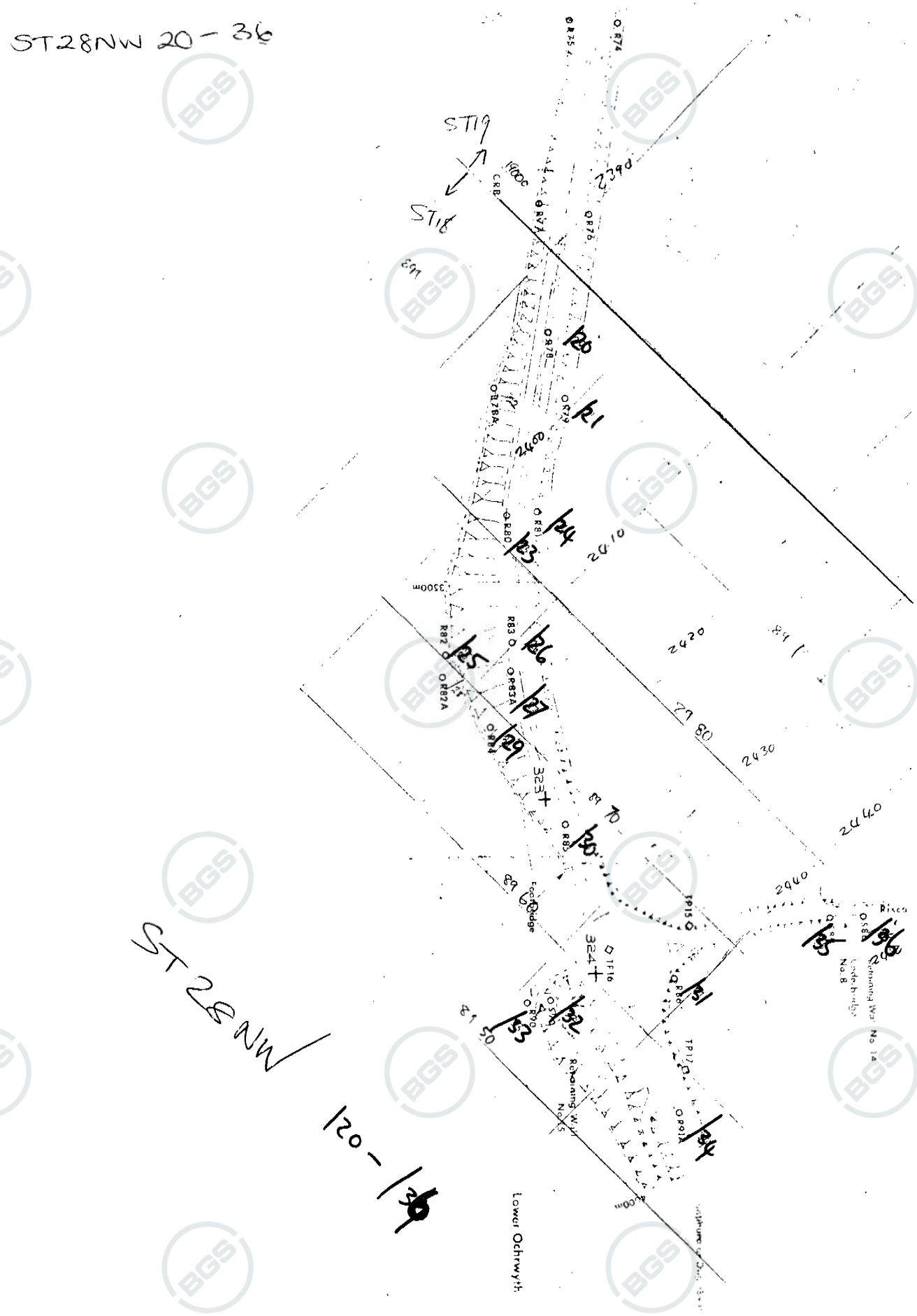
PLOT TITLE:
LiDAR Plan
1m Resolution
Data from Natural Resources Wales

PLOT STATUS:	DATE:
FINAL	27-11-2024

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
JP	AW	MW	1:1500

PLOT NAME:	REVISION:
15679_LiDAR_Plan	-

Appendix C BGS Borehole Record and Location Plan


ST28NW 20 – 36
ST19
ST18
ST28NW 120 – 136
Lower Ochrwyth

ST28NW/35

BORING METHOD AND DIAMETER

CABLE TOOL BORING 150 mm

RECORD OF BOREHOLE 383

LOCATION S. 3485 RISCA 2444

CLIENT GWENT COUNTY COUNCIL 8977

Fig 213

Scale 1:50

Dates:- 7-12TH APRIL, 1976

Drilling and Casing Progress	Water Level	C/ϕ	LL/PL	Natural Moisture Content	'N' Value / R.Q.D.	Sample / Core Recovery	Strata Description (Level m (OD) 41.62)	Depth (m)	Legend
						1	MEDIUM DENSE FILL (black ash clayey at base.)		
					17	2		1.50	
						3	FILL (Black clayey silty fine to coarse sand and gravel with a little ash.)		
7.4.76	13 ▽				30+ for 76mm	14½ 4		2.76	
	▽					5	MEDIUM DENSE and DENSE brown fine to coarse rounded SAND and GRAVEL and occasional cobbles.		
7.4.76					C36	6			
					C21	7			
					C21	8			
8.4.76									
8.4.76					C47	9			

REMARKS

Ground water encountered at 2.90 m rose to 2.60 m in 15 minutes.
+ N value after seating drive.

KEY W = Water; Undisturbed; Disturbed; Bulk disturbed; ▽ Water encountered; ▽ Standing water level; Drilling Progress; Casing Progress

GKN KELLER FOUNDATIONS

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

LEGEND

- Site Boundary
- BGS Borehole Location

CLIENT:
Lidl Great Britain Limited

www.waterco.co.uk

SCHEME:
Land at Pontymister, Risca

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

PLOT STATUS:	DATE:
FINAL	27-11-2024

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

PLOT NAME:	REVISION:
15679_BGS_Borehole_Location_Plan	-

Appendix D DCWW Sewer Records & Correspondence

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

Mr Jack Pugh
Waterco
Ruthin
Denbighshire
LL15 1NJ

Date: 27/11/2024
Our Ref: PPA0009069

Dear Mr Pugh

Grid Ref: 324412 189867
Site Address: Commercial Street Pontymister, Caerphilly
Development: Lidl Pontymister, Risca

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

Firstly, we note that the proposal relates to a new Lidl Store and acknowledge you have stated this as a brownfield site/previously a storage depot. Therefore, we offer the following comments as part of our appraisal of this development.

Public Sewerage Network

The proposed development site is located in the immediate vicinity of a combined sewerage system, which drains to Cardiff Bay Wastewater Treatment Works (WwTW).

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

Surface Water Drainage

As of 07/01/2019, this proposed development is subject to Schedule 3 of the Flood and Water Management Act 2010. The development therefore requires approval of Sustainable Drainage Systems (SuDS) features, in accordance with the 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems'. As highlighted in these standards, the developer is required to explore and fully exhaust all surface water drainage options in accordance with a hierarchy which states that discharge to a combined sewer shall only be made as a last resort. Disposal should be made through the hierarchical approach, preferring infiltration and, where infiltration is not possible, disposal to a surface water drainage body in liaison with the Land Drainage Authority and/or Natural Resources Wales.

It is therefore recommended that the developer consult with Caerphilly County Borough Council, as the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features. Please note, DCWW is a statutory consultee to the SAB application process and will provide comments to any SuDS proposals by response to SAB consultation. Please refer to further detailed advice relating to surface water management included in our attached Advice and Guidance note and our Developer Services website at **https://developers.dwrcymru.com/en/help-advice/regulation-to-be-aware-of/sustainable-drainage-systems**.

We note that surface water will drain to a watercourse, and we welcome this approach as a more sustainable alternative to a public sewer. Please note that no highway or land drainage run-off will be permitted to discharge directly or indirectly into the public sewerage system.

Foul Water Drainage – Sewerage Network

We have no objection for the domestic foul flows generated from this development to connect to the public sewer. Due to the size and strategic importance of the 900mm public trunk sewer in Commercial Street we advise that the flows can be communicated to the 225mm public combined sewer at or downstream of manhole ST24893901 located in Llanarth Square at the junction with Commercial Street as indicated on the extract of public sewer record provided. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.

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

Should the approved use intend to include food preparation, then an adequate grease trap to be fitted, in accordance with environmental health regulations, and maintained thereafter to prevent grease entering the public sewerage system.

Sewage Treatment

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

Water supply

We anticipate this development will require the installation of a new single water connection to serve the new premise. The provisions of Section 45 of the Water industry Act 1991 apply. We therefore rely on the Local Planning Authority to control the delivery of any required reinforcement or offsite works by way of planning condition at planning application stage.

Capacity is currently available in the water supply system to accommodate the development. Initial indications are that a connection can be made from the 110mm PE diameter watermain in 324338, 189893 location. We reserve the right however to reassess our position at planning application stage to ensure there is sufficient capacity available to serve the development without causing detriment to existing customers' supply as demands upon our water systems change continually.

The proposed development is crossed by a distribution and a trunk watermain, the approximate position being shown on the attached plan. Dwr Cymru Welsh Water as Statutory Undertaker has statutory powers to access our apparatus at all times. I enclose our Conditions for Development near Watermain(s). It may be possible for this watermain to be diverted under Section 185 of the Water Industry Act 1991, the cost of which will be re-charged to the developer. The developer must consult Dwr Cymru Welsh Water before any development commences on site.

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

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

Please quote our reference number in all communications and correspondence.

Yours faithfully,

Rhys Evans
Planning Liaison Manager
Developer Services

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

PPA0009069

Conditions For Development Near Water Mains

Location: Commercial Street Pontymister, Caerphilly
Date: 27/11/2024

The development of the site with our water main located as shown on the attached plan will involve certain conditions which must be strictly adhered to.

1. No structure is to be sited within a minimum distance of **4 metres** from the centre line of the 350mm water main and **3.85 metres** from the centre line of the 110mm water main. The pipeline must therefore be located and marked up accurately at an early stage so that the Developer or others understand clearly the limits to which they are confined with respect to the Company's apparatus. Arrangements can be made for Company staff to trace and peg out such water mains on request of the Developer.

2. Adequate precautions are to be taken to ensure the protection of the water main during the course of site development.

3. If heavy earthmoving machinery is to be employed, then the routes to be used in moving plant around the site should be clearly indicated. Suitable ramps or other protection will need to be provided to protect the water main from heavy plant.

4. The water main is to be kept free from all temporary buildings, building material and spoil heaps etc.

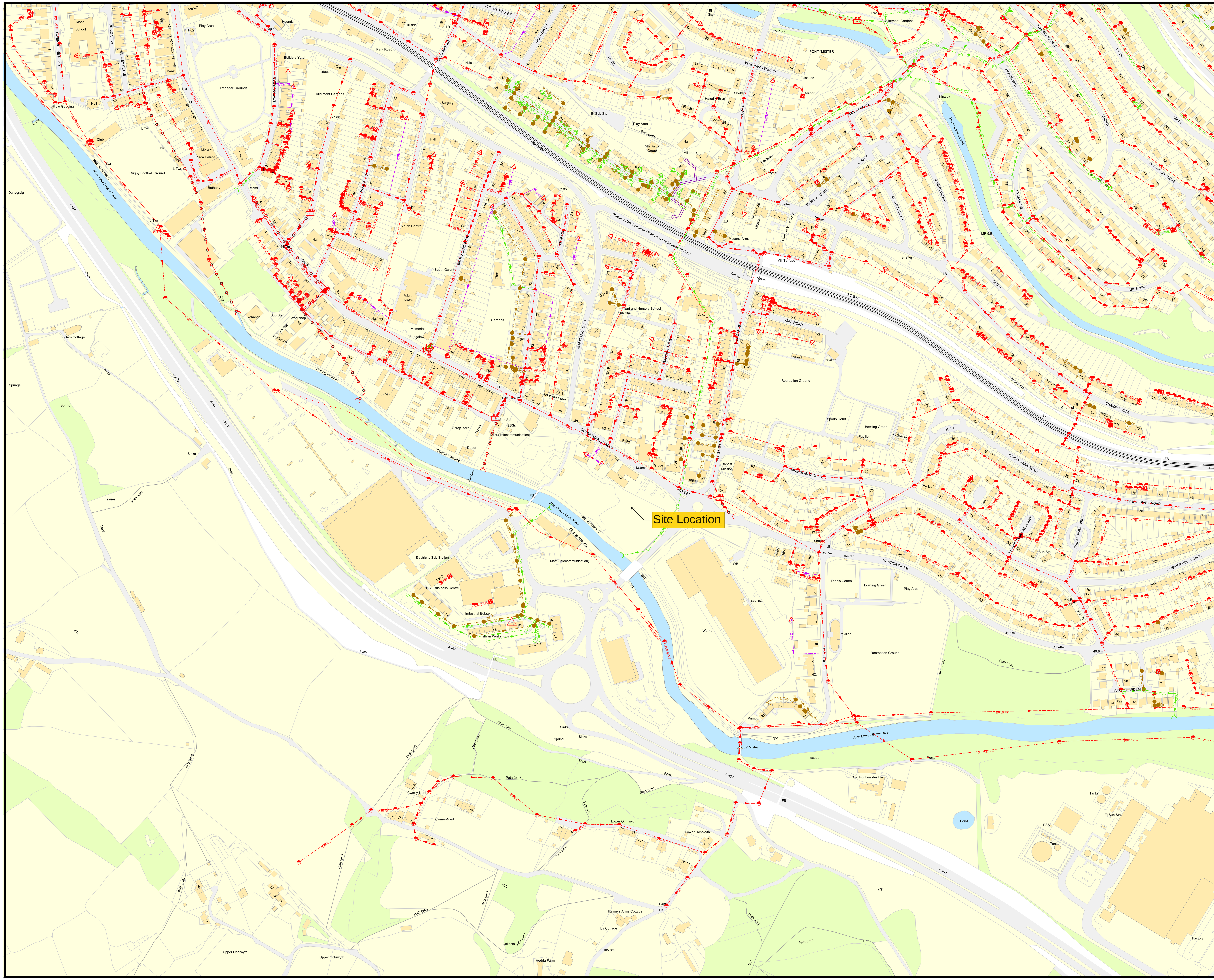
5. The existing ground cover on the water main should not be increased or decreased.

6. All chambers, covers, marker posts etc. are to be preserved in their present position.

7. Access to the Company's apparatus must be maintained at all times for inspection and maintenance purposes and must not be restricted in any way as a result of the development.

8. No work is to be carried out before this Company has approved the final plans and sections.

These are general conditions only and where appropriate, will be applied in conjunction with specific terms and conditions provided with our quotation and other associated documentation relating to this development.



Dŵr Cymru
Welsh Water

Land at Pontymister, Risca Commercial Street Risca Newport NP11 6EE

N
W E
S

LEGEND(Representative of most common features)

Waste network:

Symbol	Feature	Symbol	Feature
	Foul chamber		Outfall
	Surface water chamber	LH	Lamphole
	Combined chamber		Storm Overflow
CO	Combined sewer overflow		Rising main
SPC	Special purpose chamber		Gravity sewer
	Treatment works	P	Private sewer
	Pumping station	S 104 P	Private sewer subject to Sect. 104 adoption agreement
		T	Private Sewer Transfer
		L	Lateral Drain
			Inspection Chamber

NB: Sewer symbol colour indicates the type.

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

Notes:

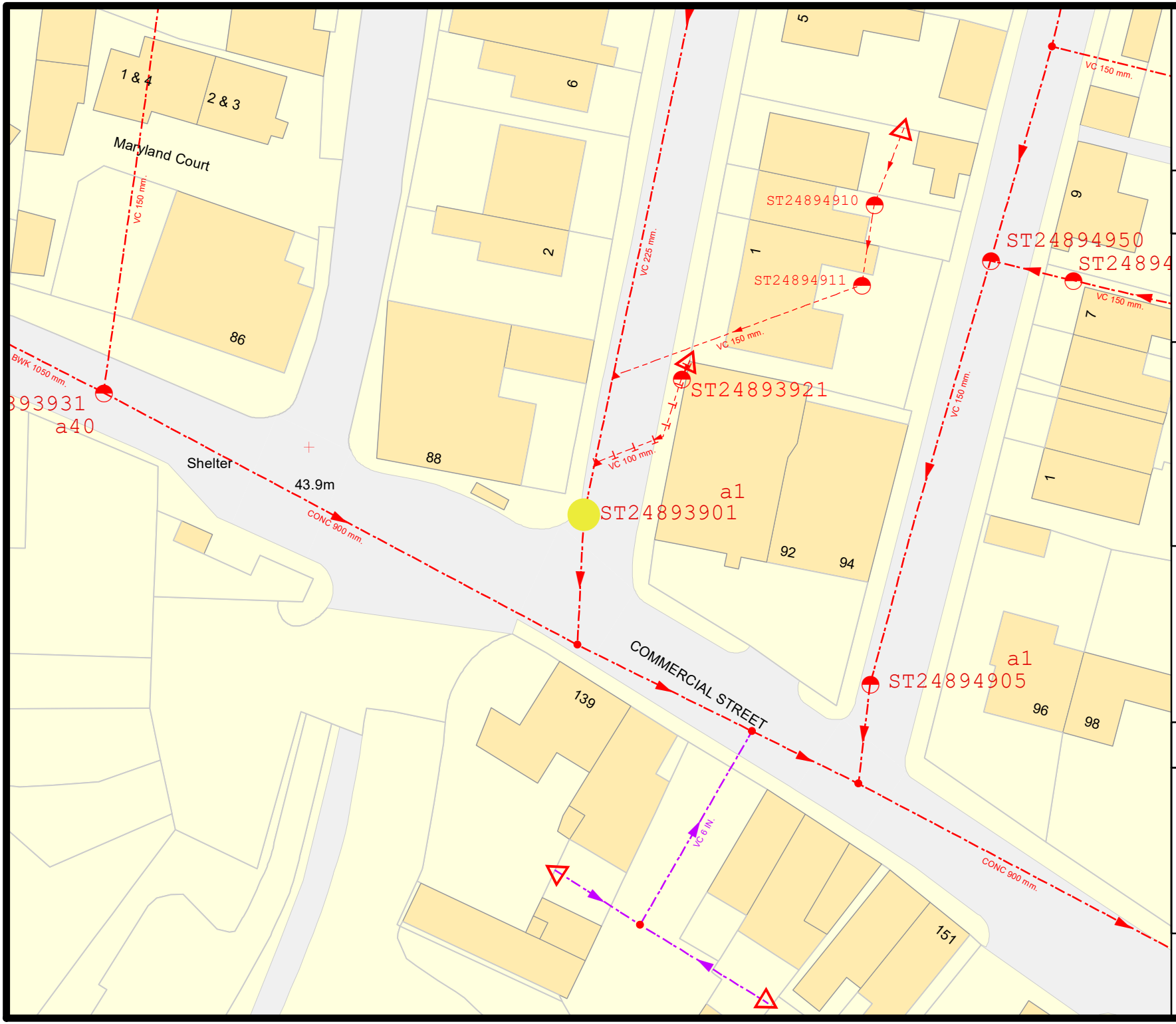
Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases, pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible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

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

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

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Map Ref:	324414,189887
Map scale:	1:1500
Printed by:	Warren Rees
Printed on:	25 Jul 2024



Dŵr Cymru
Welsh Water

ST24893901

N
W E
S

LEGEND(Representative of most common features)

Waste network:

	Foul chamber		Outfall
	Surface water chamber	LH	Lamphole
	Combined chamber		Storm Overflow
C O	Combined sewer overflow		Rising main
SPC	Special purpose chamber		Gravity sewer
	Treatment works	P	Private sewer
	Pumping station	S 104 P	Private sewer subject to Sect. 104 adoption agreement
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EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Map Ref:	324387,189968
Map scale:	1:500
Printed by:	Stacey Harris
Printed on:	27 Nov 2024