
ALDI STORE EXTENSION – PLYMOUTH STREET, MERTHYR TYDFIL

FLOOD CONSEQUENCES STATEMENT & DRAINAGE STRATEGY

Site Summary

It is proposed to extend the existing ALDI retail foodstore with additional parking and floor space, on a previously developed site at Plymouth Street, Merthyr Tydfil, CF47 0TP. The proposed development site includes both the existing foodstore and car parking area, along with the car sales forecourt located between the store and the main road. Refer to appendix A for the site location plan.

The development site has a total area of approximately 0.588Ha. The site is bounded by the River Taff to the south west, the A4102 road to the north west, High Street / Plymouth Street to the north east and car parking for the adjacent bingo hall to the south east. The existing store building is located to the south, with existing car parking in the centre of the site. Aside from the loading bay ramp, which sits around 1.3m below the store floor level, the lowest point on the site (162.35mAOD) is in the centre of the car park, which is drained by a linear drainage channel. The car park is separated from the car sales forecourt to the north by a retaining wall, with up to around 0.8m level difference – at its highest the forecourt is around 163.66m. The forecourt then falls towards the main road to the north. A topographical survey has been undertaken and is included in appendix B.

The proposed development includes removal of the retaining wall between the plots, subsequent releveling of the existing forecourt and adjacent car parking to create one parking area, and extension of the existing store building. The northern elevation of the building is proposed to be extended by approximately 7m in width, into the current car park area, to provide approximately 360m² of additional retail space. The proposed site plan is included in appendix C.

Both the ALDI site and the car sales forecourt are positively drained for surface and foul water. The store has separate foul and surface water systems, discharging in a south easterly direction through the bingo hall car park – both the store and hall were constructed as a phased development; hence elements of the systems are shared. Foul water discharges to a sewer, and surface water discharges to the River Taff. The car sales forecourt discharges surface water to the north, through a combination of positive drainage into what appears to be the highways drainage system, and overland flows onto the carriageway. An area used for car washing is drained by a channel, discharging to the north. It is assumed that the washing area and surface water drainage discharges are ultimately to a combined sewer. The existing drainage arrangements are shown on the topographical survey.

Dŵr Cymru Welsh Water (DCWW) asset mapping included in appendix D shows a 1330mm diameter concrete combined sewer to the north, which is likely to be the discharge point for the forecourt. This sewer passes through the bingo hall car park to the south, becoming masonry construction, approximately in the area of the store's foul discharge.

Flood Consequences Statement

The following considers the flood risk associated with the site in accordance with Planning Policy Wales Technical Advice Note 15 (TAN 15).

According to Natural Resources Wales's (NRW) online Development Advice Map (DAM), the development site is entirely located within the TAN 15 Development and Flood Risk Zone C2, which describes "areas without significant flood defence infrastructure". Refer to appendix E for the TAN 15 Development Advice Map, and other flood maps from NRW.

According to the detailed Flood Risk Assessment Wales map, the site is entirely located within Low (Zone 2 - between 0.1% and 1% chance of flooding in any given year), and Medium (Zone 3 - between 1% and 3.3% chance) risk zones with regards to river flooding. River flood risk on the site arises from the adjacent River Taff, which is an NRW Main River. The site is not shown to have flooded historically, or to be at elevated risk from sea flooding. The site is shown to be wholly at risk from reservoir flooding, and at varying risks of surface water flooding. This is discussed further in later sections.

The river flooding risk map shows the existing store building to be at medium flood risk, while the car park is low risk. This is considered to be an error, since the store floor level is higher than the car park. As such the

entirety of the development site considered to be at low risk of river flooding (Zone 2).

TAN15 (2004) Figure 2 classifies a commercial development as “less vulnerable”. Less vulnerable development located in DAM Zone C2 is considered compatible provided that the development can be justified in this location. Justification is determined based on a number of criteria in Section 6 of TAN15. These are:

- i. *Its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required 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 PPW and meets the definition of previously developed land (PPW fig 4.4);*
- 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 found to be acceptable.*

Requirement i: The proposed development is an extension to an existing commercial / retail site, located immediately adjacent to the retail centre boundary. It is therefore considered that the site is currently assisting to sustain a settlement and will continue to do so with the proposed extension.

Requirement iii: The proposed site is an existing ALDI food store car sales forecourt and therefore meets the definition of previously developed land.

Requirement iv: This document considers the potential consequences of a flood event in line with the above-mentioned sections.

Since the total site area is less than 1.0Ha and the surface water drainage system will be designed to control discharge rates off site (discussed in later sections), the surface water generated by the development is unlikely to have a significant impact upon flooding within the site locality. Other issues considered in assessing the flood risks associated with developing the site were:

- a) Overall loss of flood storage volume during the design event
- b) Obstruction to the flow of water during a flood event
- c) Increase in rate of runoff that might worsen flooding elsewhere
- d) Obstruction to existing watercourses or access to them
- e) Situations that may be dangerous during flooding.
- f) Flooding from fluvial sources.
- g) Flooding from tidal sources.
- h) Flooding from pluvial sources and overland flows
- i) Flooding from ground water
- j) Flooding from sewers
- k) Flooding from reservoirs or canals.
- l) Flooding from other sources.

Item a). Since the site is shown to be at between 0.1% and 1% chance of flooding in any given year, it is important to consider flood storage volume on the site so as not to worsen flood risk elsewhere. Although the proposals include extension of the existing store building, which will involve ground raising, ground lowering will also be undertaken within the current car parking and car sales forecourt areas. Detailed proposed levels are not currently available; however, a preliminary review has been undertaken, which shows flood volume storage will be increased with the proposed development. Refer to appendix F for this initial analysis.

Item b). Flood flows are likely to enter the site from south, from the river, since flows heading downstream are effectively blocked from the site by the raised embankment of the A4102. No changes are proposed to the building on this elevation; therefore, flows will not be significantly changed compared to the current arrangement. Removal of the retaining wall between the current car park and sales forecourt will remove an obstruction to flows heading to the north, however this is unlikely to have a significant effect on flood flows off-site.

Item c). The proposed ALDI drainage system will be designed to mitigate the effects on receiving systems of additional surface water generated by the development. As such it is therefore anticipated that the development will not worsen flood risk elsewhere.

Item d). No changes are proposed to the existing embankment down to the River Taff, therefore no obstruction to the watercourse of access will occur.

Item e). No change is proposed to the site usage therefore there will be no change in situation during flooding.

Item f). The site is shown to be at between a 0.1% and 1% chance of river flooding in any given year. The site does not benefit from defences.

Item g). The site is not at elevated risk of tidal flooding.

Item h). Flooding from overland flows. The NRW risk of flooding from surface water mapping shows part of the ALDI car park to be at elevated risk of surface water flooding. Surface water flows from the north appear to enter the access to the bingo hall and ALDI car park, flowing to the south into the river. This flow is shown to “back up” into the low points of the ALDI car park. No changes are proposed to the access route therefore this overland flow will not be changed. Levels changes within the site will manage the flows entering the site from the access route and not increase risk to the proposed building extension.

Item i). There is no known history of flooding from ground water for the development site, and groundwater flows will emerge into the adjacent river channel.

Item j). Flooding from sewers. There is no known history of flooding from sewers within the vicinity of the development. Any sewer surcharging that does occur would follow surface water overland flow routes so are not considered to be a risk.

Item k). The NRW risk of flooding from reservoirs map indicates that the site is in an area at risk of reservoir flooding. However, flooding from reservoirs is extremely unlikely to happen due to regular inspections and maintenance work that is undertaken. This risk has been well assessed and is further mitigated by local and regional emergency plans. There are no other large bodies of retained water (e.g. canals) in the vicinity of the site.

Item l). No other natural or artificial sources of flooding have been identified for this development.

Conclusion: The proposed development is considered to meet the requirements of the TAN15 justification test and is therefore appropriate in this location. The site lies within a Flood Warning Area and the store should be subscribed to this service.

ALDI Store Surface Water Drainage Strategy

Following the implementation of Schedule 3 of the Flood Water Management Act 2010 in Wales, developments with a construction area greater than 100m² are required to incorporate Sustainable Drainage Systems (SuDS). All such systems are required to be approved by the SuDS Approval Body (SAB) under an approval application, and required to be adopted by the SAB where they serve more than a single property. As such, surface water drainage for the proposed ALDI site will be developed and approved under application separate to the planning process.

Generally, disposal of surface water generated by the development is proposed to be to the existing surface water drainage system within the ALDI store site. Re-use of rainwater in the proposed development is not considered to be viable due to the relatively large ratio of yield to demand, generated by minimal non-potable water requirements in the retail foodstore. Site investigation from the original store construction found made ground over gravelly clays. Soil percolation testing is to be undertaken in investigations for the proposed development, however since the existing drainage systems discharge off site and not to the ground via infiltration, it is assumed that this method is not viable for the proposed development. Since the existing surface water system discharges to the River Taff within near proximity to the site, it is considered that the site effectively discharges to a watercourse.

It is therefore proposed to install a new drainage system to serve the extended and re-levelled car parking area. This system will include a restricted discharge rate into the existing system. This will reduce the overall peak discharge rate from the post-development site compared to the pre-development arrangements. The new system will include a bioretention system as an inlet and attenuation structure, which will add water quantity & quality improvements, biodiversity and amenity potential to the drainage system.

The surface water drainage system for the ALDI site will remain separate and will only serve the ALDI property, therefore will not be offered for adoption to the SAB.

The design of the private drainage will be developed in accordance with the requisite standards, including current Building Regulations Approved Document Part H and Welsh Ministers Standards.

ALDI Store Foul Water Drainage Strategy

Minor modifications will be required to the existing foul water system that serves the ALDI store to suit the proposed extension.

The design of the private foul drainage will be developed in accordance with Building Regulations Approved Document H and Welsh Ministers Standards.

Ownership and Maintenance

All the ALDI private foul and surface water drainage will be maintained by ALDI Stores Ltd. Specific maintenance requirements for the new ALDI surface water drainage system (including SuDS) will be agreed with the SAB.

Appendix A: Site Location Plan



Appendix B: Topographical Survey



ABBREVIATIONS		
Ave	Average	LB Letter Box
AV	Air Valve	LI Letter Bin
BS	Bellie Beacon	LP Lamp Post
Bo	Bollard	MH Manhole
BL	Bollard Light	MK Marker
Box	BT/Elec	NP Name Plate
BS	Bus Stop	OH Overhead (Elec/Tels)
BT	Telecom IC	OSM Ordnance Survey BM
CATV	Cable Television IC	PARA Parapet
CCTV	Closest Circuit Camera	Pav Pavement
CL	Cover Level	PM Parking Meter
Conc	Concrete	RE Rodding Eye
DC	Drainage Channel	RL Ridge Level
DH	Ditch	RS Road Sign
DI	Displaced	RSJ Rolled Steel Joint
DK	Drop Kerb	SA Skewway
DN	Drain	SD Silt Drain
EL	Electric Level	Sen Traffic Sensors
EP	Electricity Pole	SP Sign Post
ER	Earthing Rod	ST Water Stop Tap
FB	Footbridge	SV Water Stop Valve
FE	Fire Escape	SY Slay
FL	Floor Level	Tac Tactile Pavement
FR	Floodlight	TCS Telephone Call Box
FS	Flagstaff	TS Traffic Signal
FH	Fire Hydrant	TP Telephone Pole
Gal	Gable	Vegetation
GM	Gas Motor	VP Vent Pipe
GV	Gas Valve	WL Water Level
GY	Gully	WM Water Meter
HR	Hand Rail	WO Wash Out
IC	Inspection Cover	WP Wooden Peg
IL	Invert Level	
KO	Kerb Outlet	
Drainage		
FW	Foul Water	SW Surface Water
Com	Combined Storm/Foul	BD Back Drop
225mm	Pipe Diameter	UTL Unable To Lift
Fences / Walls		
CB	Crash Barrier	HR Hand Rail
BWF	Barbed Wire	PRF Post and Rail
CBF	Close Boarded	PWF Post and Wire
CLF	Chain Link	PLF Panel Fence
IR	Iron Railings	SR Steel Railings
TN	Trellis	STF Steel Palisade
BW	Brick Wall	BLK Block Wall
RW	Retaining Wall	Rm Rendered Wall
SW	Stone Wall	(1.8m) Height of Wall/Fence

Services	
Electric	Traffic Signals
Gas	Water
CCTV	Foul Water Sewer
Telecom	Surface Water Sewer
BT	Combined Sewer
Unknown	End of trace
Overhead Cable	NLR Not located (from records)

Utility Notes

At the time of survey there were numerous tightly parked cars on the sales forecourt to the north of the store. Detail may therefore be omitted in this area.

To assist in the production of this drawing Berry Geomatics Ltd have used record drawings that were made available by utility providers. Any information taken from these records and the completeness of the records cannot be guaranteed.

Utilities are located using non-invasive techniques, the accuracy of which can be adversely affected by local ground, weather and site conditions.

Electromagnetic and GPR detection is not infallible and it is possible that some services can remain undetected. Results are dependent on a number of factors such as soil type, ground water levels and surface conditions. Caution should therefore be taken and trial excavations must be undertaken to confirm position, identification and in particular depth of the utility prior to any construction work.

Where there are multiple cables, an average depth has been obtained and trial excavations are recommended to confirm the number and depth of cables.

Fibre optic cables can be difficult to detect and access to chambers is often restricted by utility providers. Where possible cable routes will be added from records.

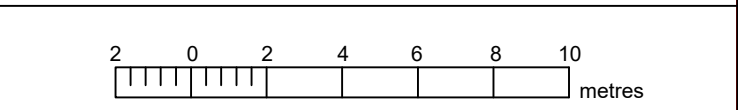
Electromagnetic results can be distorted when working in close proximity to overhead power lines or electric installations and similar structures. It is not guaranteed that redundant services will always be detected.

Gas and water pipes to individual properties are often plastic and of a size that cannot be located by electromagnetic or GPR detection. Where possible, routes have been added from surface evidence such as valves and marked as assumed routes. This should however only be used as a guide.

Drainage information has been obtained without entry in to manhole or inspection chambers. Details shown have been observed from the surface and as such cannot be guaranteed. Blockages, lifting, sewer collapse or excessive depth will affect the ability to detect sewers.

If record drawings are available, when a utility is shown but not detected on site, it will be added to the drawing and marked as NLR (not located, from records). The accuracy of these records cannot be guaranteed.

Utility information shown on the drawing has been obtained from non-invasive survey techniques. It always remains a possibility that there are additional utilities within the survey area that we have not been able to detect. Care should therefore be taken and the drawing should be used in conjunction with all available utility records.



Notes	
Heights in metres	
Survey related to Ordnance Survey grid datum (OSGB36)	

Do not scale this drawing. All critical dimensions and services should be field verified prior to building operations or construction.

Rev.	Date	Amendments
A	10/3/21	Survey extended and updated

Client	
Kendall Kingscott Glenworth Court Lime Kiln Close Stoke Gifford Bristol BS34 8SR	

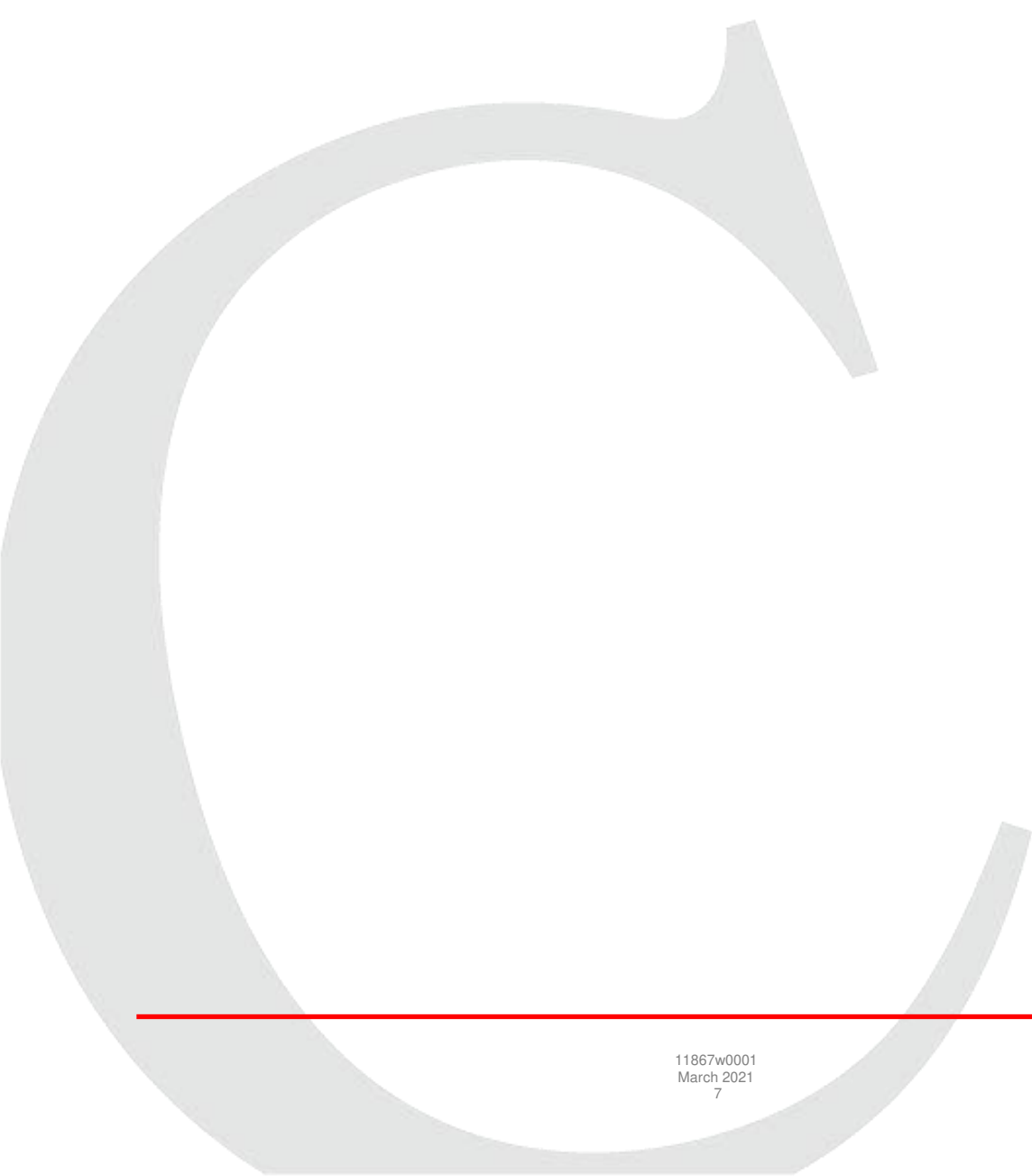
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Aldi, Plymouth Street, Merthyr Tydfil Sheet 1 of 2	

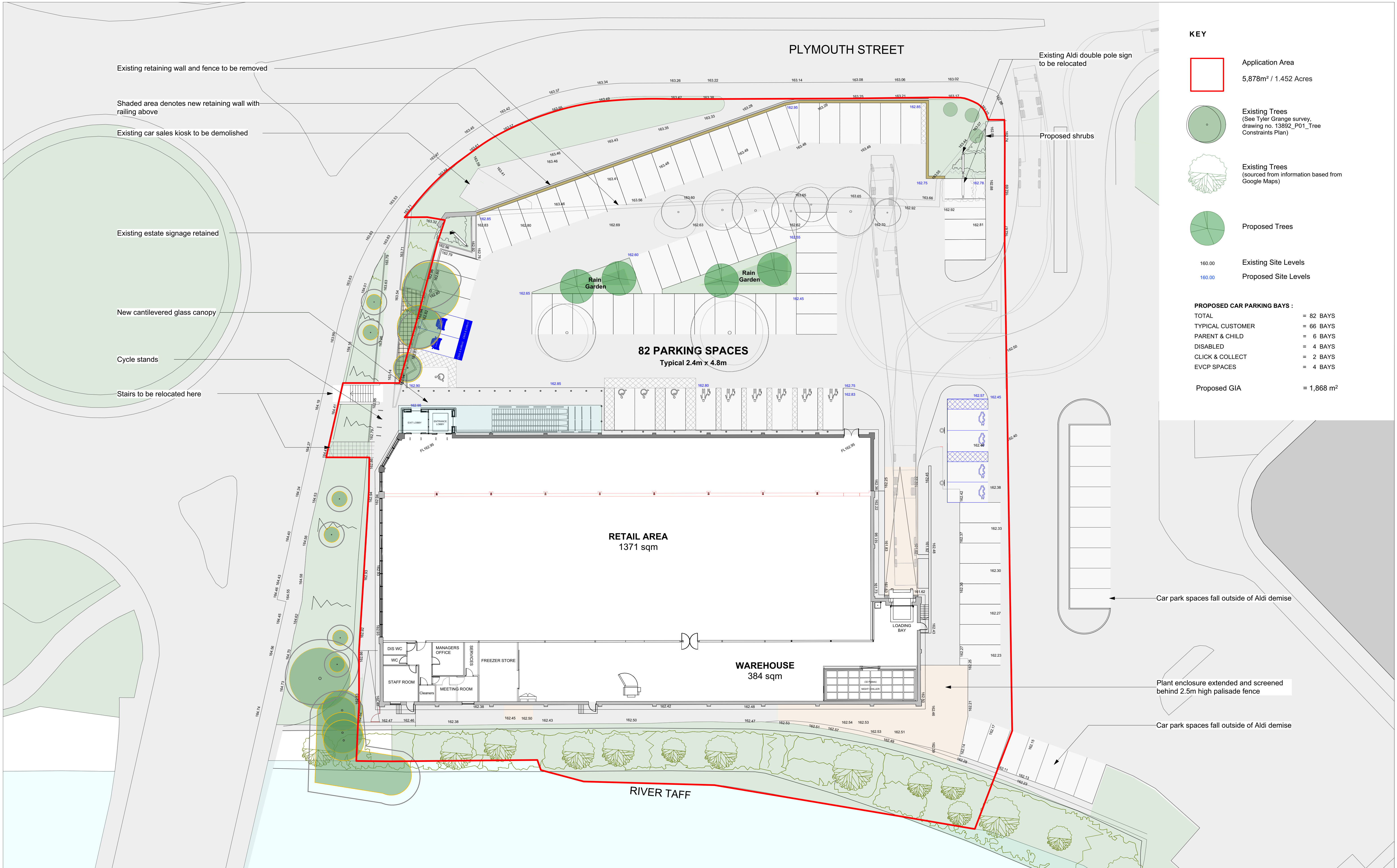
Drawing Number	
21/20	

Drawn	Checked
DMB	SB

Date	Scale
28/02/20	1:200(A0)

Appendix C: Proposed Site Plan





KEY

Application Area
5,878m² / 1.452 Acres

Existing Trees
(See Tyler Grange survey,
drawing no. 13892_P01_Tree
Constraints Plan)

Existing Trees
(sourced from information based from
Google Maps)

Proposed Trees

Existing Site Levels
Proposed Site Levels

PROPOSED CAR PARKING BAYS :

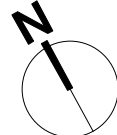
TOTAL = 82 BAYS
TYPICAL CUSTOMER = 66 BAYS
PARENT & CHILD = 6 BAYS
DISABLED = 4 BAYS
CLICK & COLLECT = 2 BAYS
EVCP SPACES = 4 BAYS

Proposed GIA = 1,868 m²

Car park spaces fall outside of Aldi demise

Plant enclosure extended and screened
behind 2.5m high palisade fence

Car park spaces fall outside of Aldi demise



0 25 40 M
Scale = 1:500 @ A1

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Project
Plymouth St, Merthyr Tydfil
Store Extension
Client
Aldi Stores Ltd

Scale
1:200
Paper Size
A1
Filename
Merthyr Extension.vwx
© Copyright
Do not scale this drawing

P2 18/05/21 JS GS Amendment to red line site boundary.
P1 09/03/2021 KH JS First issue
Rev Date By Ap Note

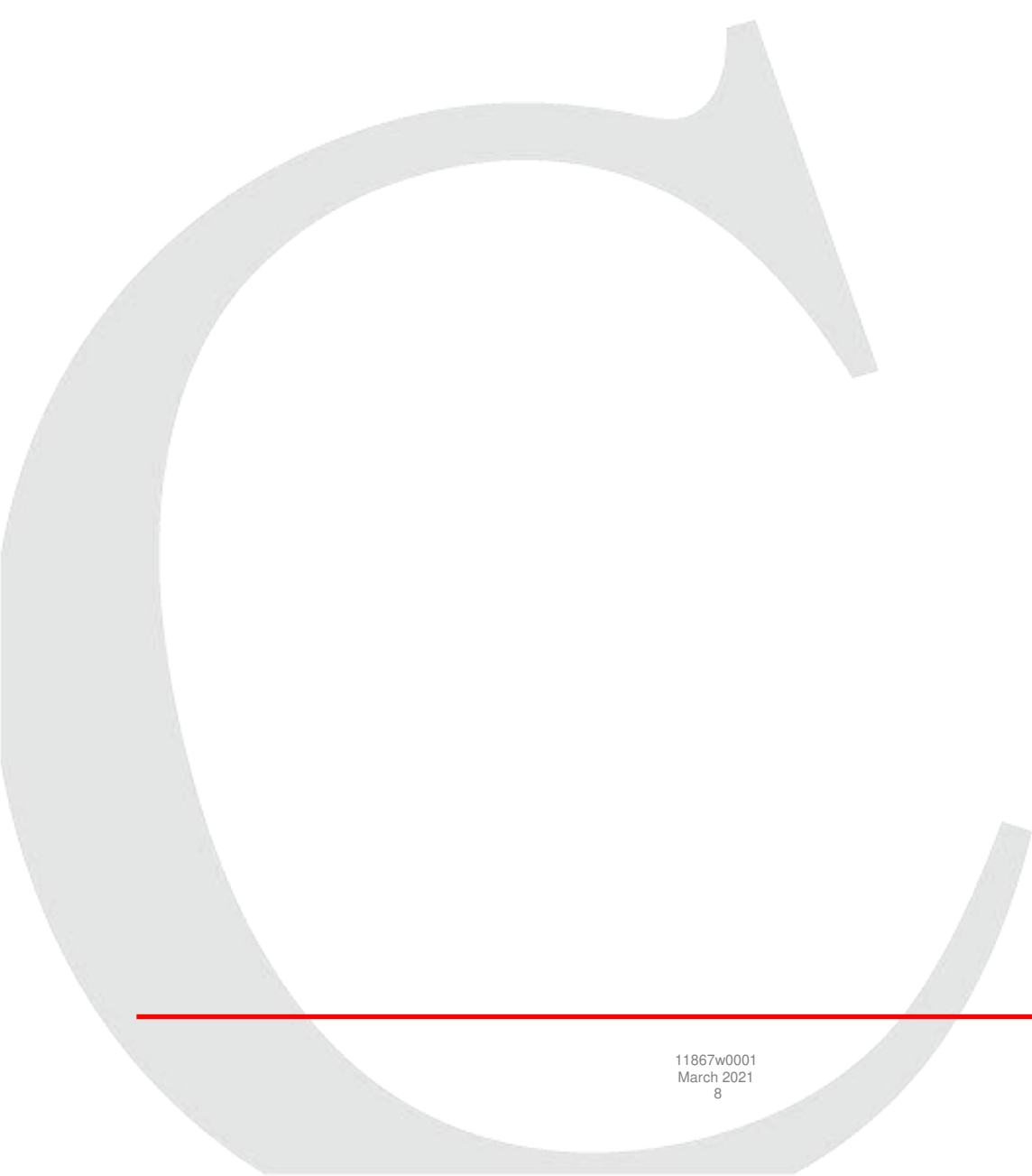
Drawing Title
Proposed Site Plan

Project Number
Drawing Number
Revision
170629-1504 P2

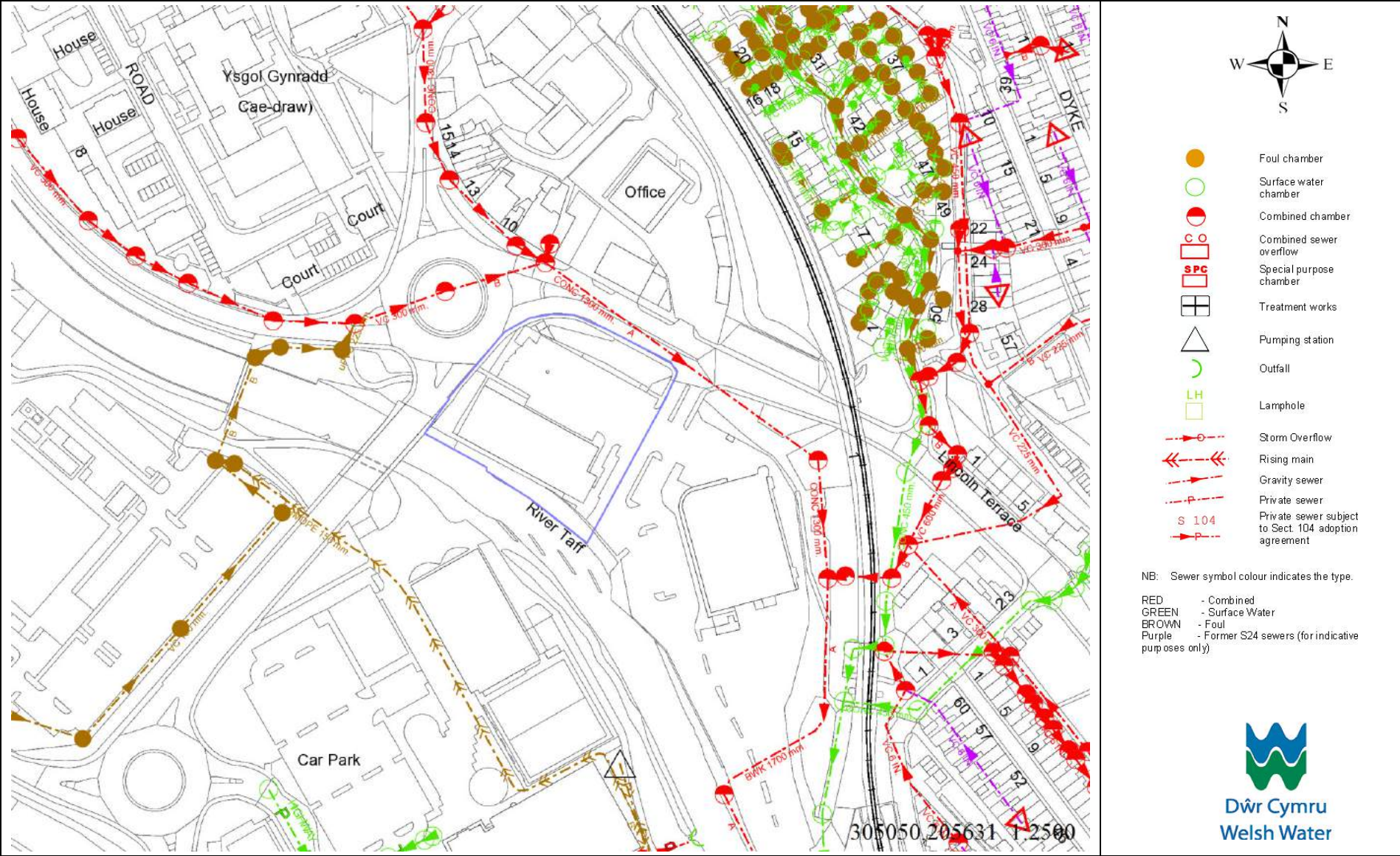
Date
09/03/21
Drawn
KH
Checked
JS
Status
PLANNING

Check all dimensions and levels on site
Only to be used on the site for which designed. The electronic transmission of design information contained in this drawing is carried out entirely at the User's risk and Kendall Kingscott Ltd. shall have no liability for any errors or inaccuracies design therefore. The production of amended or updated information from the user design information by the user is entirely the responsibility of the user and Kendall Kingscott Ltd. shall have no responsibility in respect thereof.

Appendix D: Dŵr Cymru Welsh Water Asset Maps



Appendix 3 - Extract of the Public Sewer Map for the area surrounding the property/plot [07/01/2020]

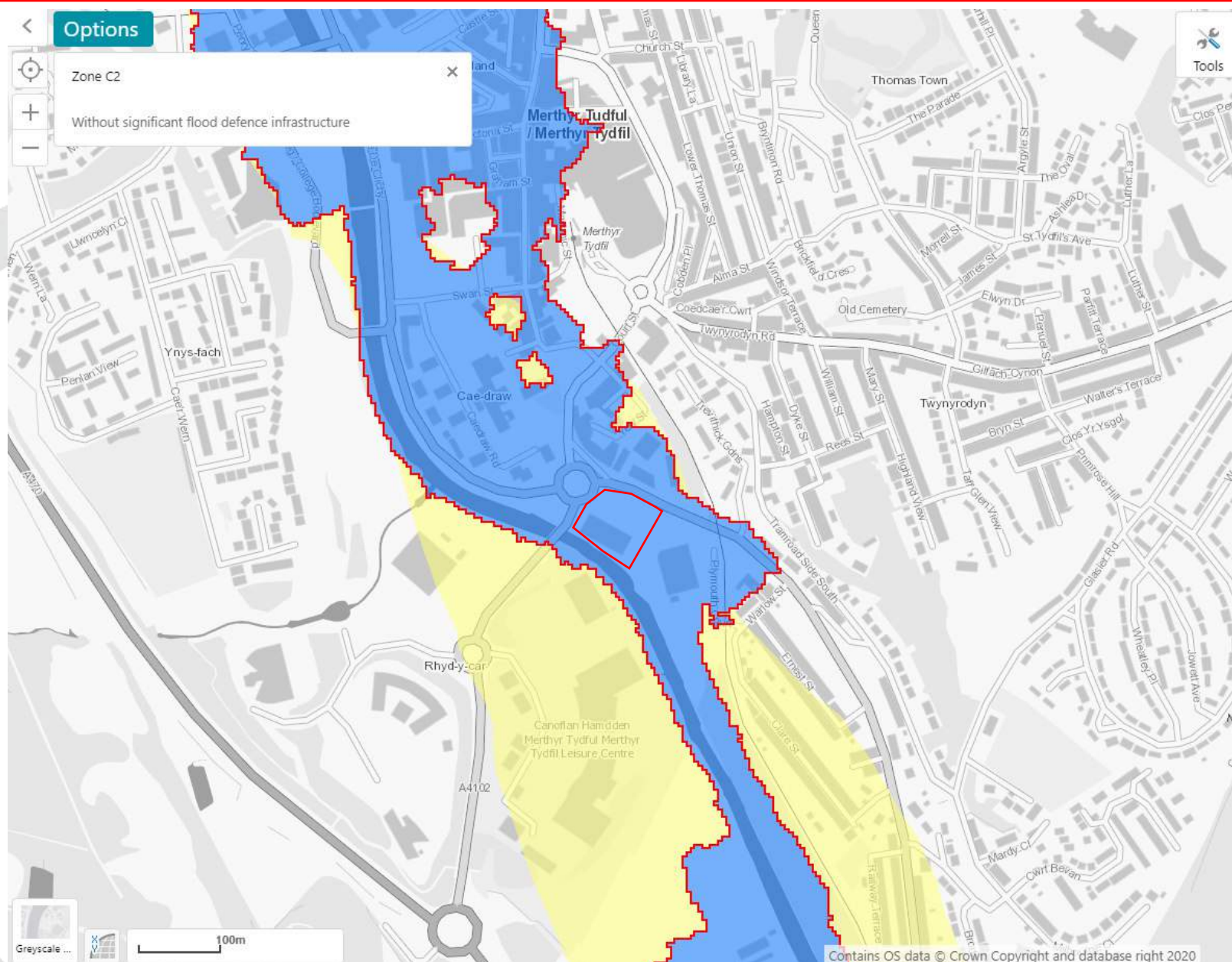


Dwr Cymru Cyf gives this information as to the position of its underground apparatus by way of general guidance only on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works in vicinity of the Company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely with you. It must be understood that the furnishing of information is entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and of the Company's right to be compensated for any damage to its apparatus. Service pipes are not generally shown but their presence should be anticipated.

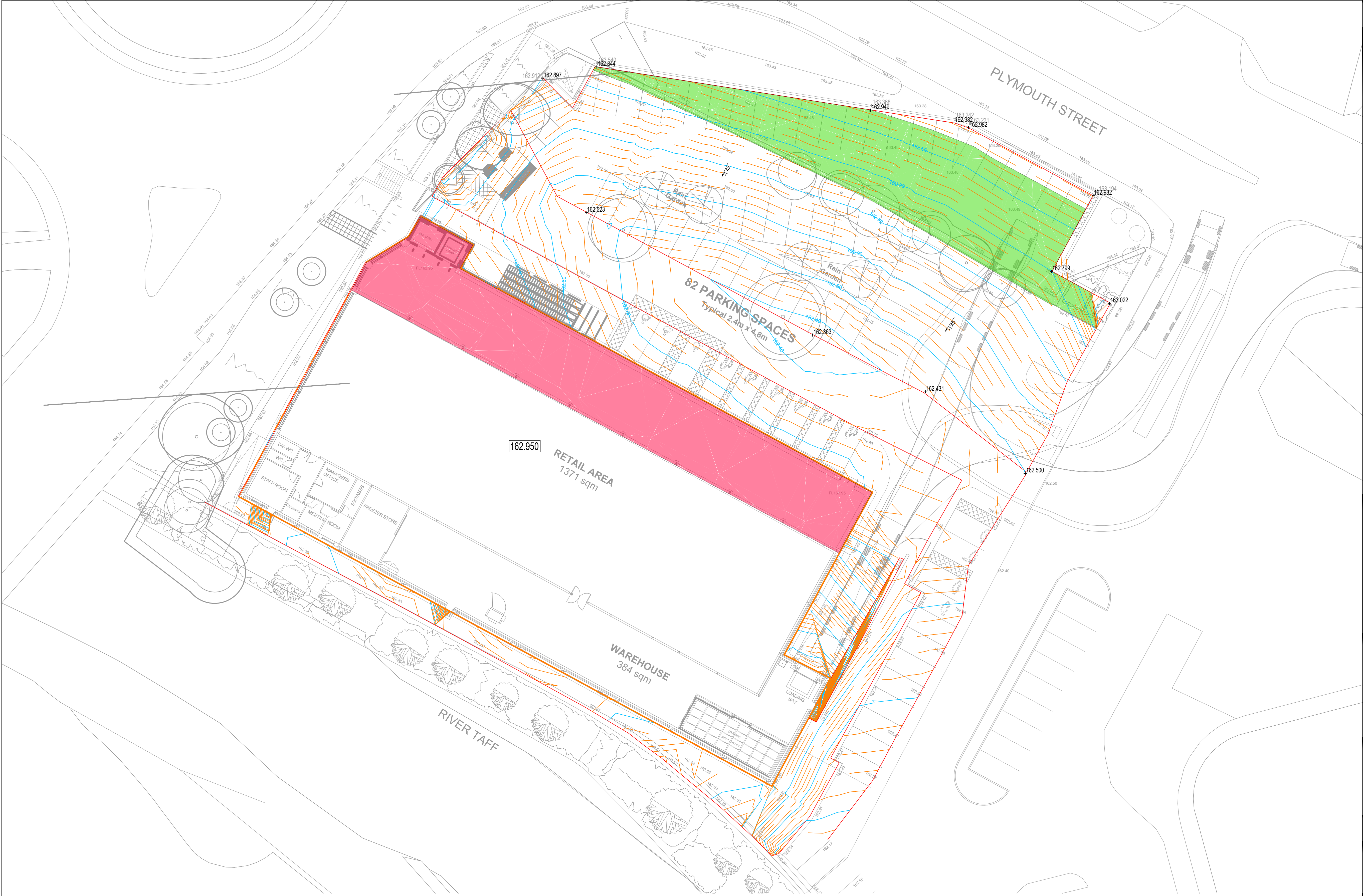
EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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Appendix E: NRW Flood Risk Maps



Appendix F : Flood Volume Analysis



Cut/Fill Summary

Name	Cut Factor	Fill Factor	2D Area	Cut	Fill	Net
Flood Vol removed	1.000	1.000	445.872sq.m	101.118 Cu. M.	0.000 Cu. M.	101.118 Cu. M.<Cut>
Flood Vol added	1.000	1.000	388.349sq.m	0.000 Cu. M.	242.486 Cu. M.	242.486 Cu. M.<Fill>
Totals			834.221sq.m	101.118 Cu. M.	242.486 Cu. M.	141.368 Cu. M.<Fill>

IF YOU HAVE A QUERY CALL US
SCALING FROM THIS DRAWING OR OBTAINING DIMENSIONS ELECTRONICALLY MAY NOT PROVIDE ACCURATE INFORMATION AND SHOULD BE AVOIDED. WORK ONLY FROM FIGURED DIMENSIONS.

GENERAL NOTES

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

SITE LAYOUT: The background layout shown in this drawing is based on KKL's drawing 170629-1503 Revision -. Please note that this might not be the latest drawing. Reference must be made to the Architect's drawings for current information.

SURVEY: The topographical survey background shown in this drawing is based on BERRY GEOMATICS's drawing 21/20 Revision A.

KEY	
	Proposed contours (0.02-0.10m intervals)
	Proposed spot levels & gradients
	Existing spot levels
	Flood area added
	Flood area lost



C D M : SIGNIFICANT HAZARDS
THE FOLLOWING HEALTH AND SAFETY HAZARDS ARE IDENTIFIED BY THE DESIGNER AS ABNORMAL IN PURSUANCE OF THE CURRENT CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS.

RISKS DURING CONSTRUCTION:
• No abnormal risks have been identified relating to this design element.

OPERATION / MAINTENANCE RISKS:
• No abnormal risks have been identified relating to this design element.

RISKS DURING DEMOLITION / DECOMMISSIONING / DISMANTLING / ALTERATIONS:
• No abnormal risks have been identified relating to this design element.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY COMPETENT & ADEQUATELY RESOURCED CONTRACTOR(S) WORKING TO SAFE SYSTEMS OF WORK.

B	SITE PLAN UPDATED	RJH 14.06.21
A	FIRST ISSUE	AG 26.03.21
REV	REVISION DETAILS	BY DATE

CRADDYS

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PROJECT TITLE
CAR PARK AND STORE EXTENSION
PLYMOUTH STREET
MERTHYR TYDFIL

DRAWING TITLE
PROPOSED LEVELS
FLOOD ANALYSIS

CLIENT
ALDI STORES LTD.

STATUS
INFORMATION

SCALE AT A1	DRG SIZE	DRAWN	CHECKED	APPROVED
1:200	A1	AG	RJH	RAG
JOB NO.	DRAWING NUMBER	REV		
11867	11867sk0001	B		