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PROJECT	Witney Petrol Filling Station Witney, Oxfordshire	CLIENT	MBH Design Studio Ltd			
TITLE	Flood Risk Assessment (Revised)	REFERENCE	22141-FRA-TN-01	C02		
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REV	COMMENTS	DATE	AUTH	CHKR	APPR	
C01	First issue	22/12/2022	EA	CB	TC	
C02	Amended Proposals	13/09/2023	CG	EA	TC	

1 Introduction

- 1.1 Water Environment was commissioned by MBH Design Studio to produce a Flood Risk Assessment (FRA) for the proposed development at Witney Petrol Filling Station (PFS) located on Welch Way in Witney, Oxfordshire. The site is located within the administrative area of Oxfordshire County Council (OCC), who also fulfil the role of the Lead Local Flood Authority (LLFA).
- 1.2 The GOV.UK Flood Map for Planning¹ shows the site to lie within the Flood Zone 2 and therefore a Flood Risk Assessment (FRA) is required to support a planning application on the site.
- 1.3 This document has been prepared with due consideration of the National Planning Policy Framework² (NPPF), the latest planning practise and guidance for Flood Risk and Coastal Change³ and the Environment Agency's (EA) Flood Risk Standing Advice (FRSA) for local planning authorities⁴. In addition, this FRA will address local requirements for planning including the OCC Strategic Policy EH7: Flood Risk.
- 1.4 The proposed development is deemed as a "minor" development and is therefore able to follow the Environment Agency (EA) FRSA.

2 Description of Development

- 2.1 The site is known locally as the Shell Petrol Filling Station. The site is bounded by Welch Way to the north, Bartlett Close to the south and east, and residential properties to the west.

¹ <https://flood-map-for-planning.service.gov.uk/> accessed 12/12/2022

² Ministry of Housing, Communities and Local Government, Updated National Planning Policy Framework, July 2021

³ Flood risk and coastal change - GOV.UK (www.gov.uk) accessed 12/12/2022

⁴ Review individual flood risk assessments: standing advice for local planning authorities - GOV.UK (www.gov.uk) accessed 12/12/2022

- 2.2 The site is located to the west of the River Windrush, the site also lies directly upon the culverted portion of Emma's Dyke. Emma's Dyke is a small stream, which is a tributary of the River Windrush.
- 2.3 The River Windrush is located approximately 840 m from the central section of the site; meanwhile, the central site area is located approximately 440 m from the emergence point of the Emma's Dyke culvert. The exact location of the site in relation to these watercourses can be seen in Figure 1.

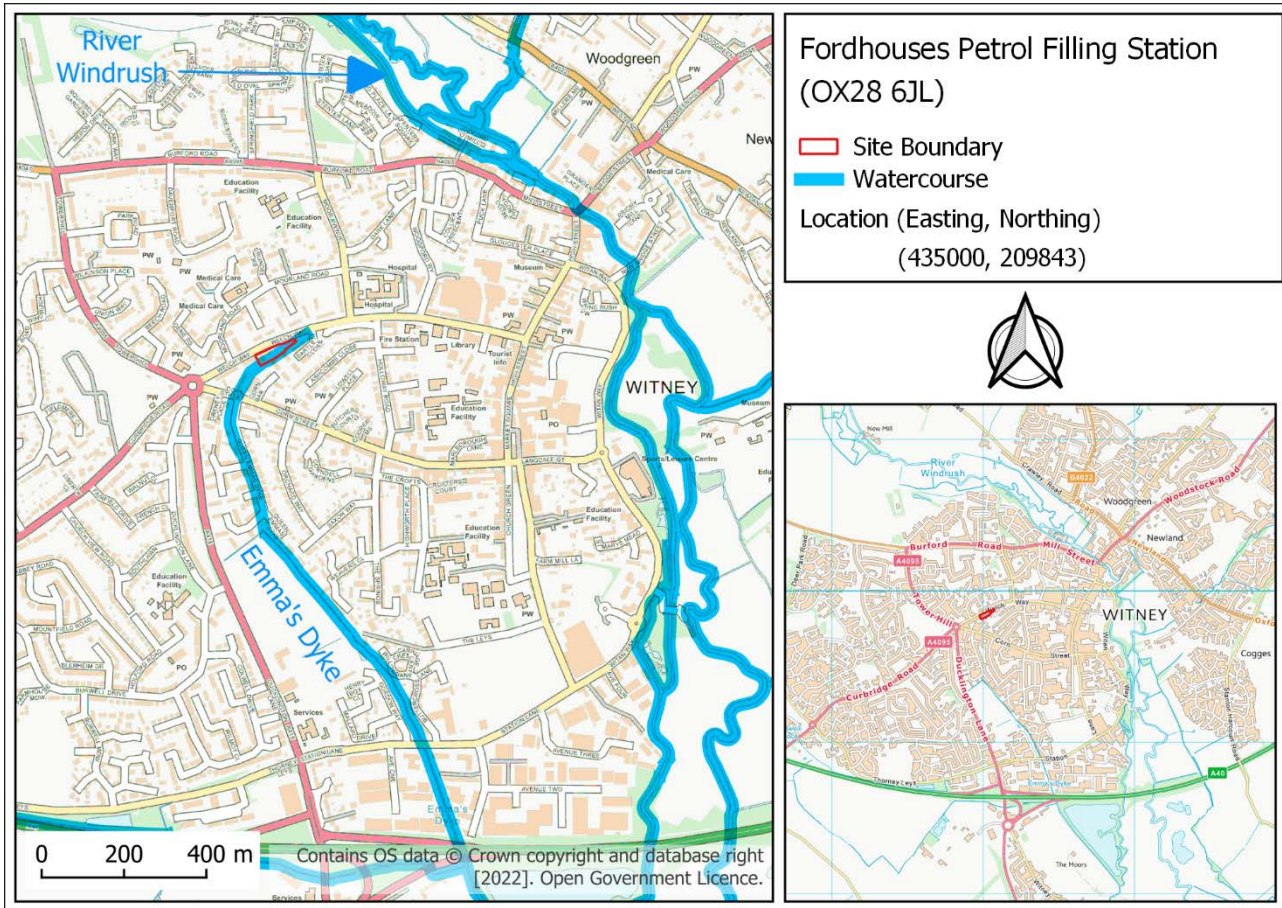


Figure 1: Site Location

- 2.4 No topographic survey of the site has not been undertaken; as such, the latest LiDAR data has been used to determine ground levels around the location of the site. The LiDAR for the site and surrounding area can be seen in Figure 2.
- 2.5 Ground levels are shown to range from 79.67m Above Ordnance Datum (AOD), at the location of the existing entrance crossover for the site along the northern border, to 80.49 m AOD along the southern border of the site, around the location of the proposed electric vehicle charging bays.
- 2.6 The current site is used as a petrol filling station with sales building, car wash, jet wash facilities and used car sale centre.
- 2.7 The proposals include the removal of the existing car sale centre and the installation of four new electric vehicle charging bays, with an associated LV panel GRP enclosure, power packs and charging points to be located to the rear of the site. The proposed charging bays and LV panel GRP enclosure are to be located along the southern boundary of the site, in the relinquished position of the care sale centre.
- 2.8 The existing access routes to the site, from Welch Way, are to be maintained post-development.
- 2.9 The current and proposed development drawings are attached in the appendix to this technical note.

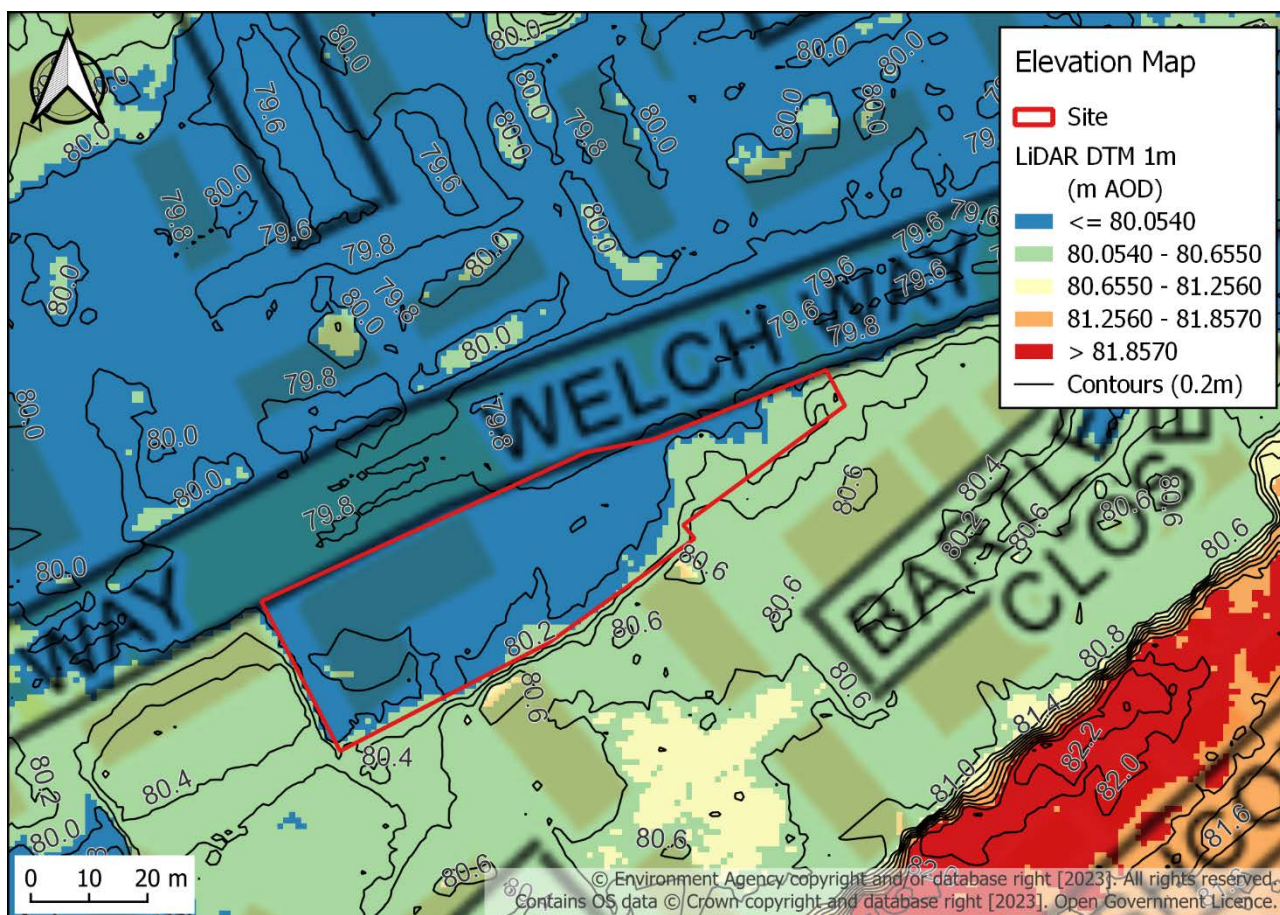


Figure 2: Site Elevation

3 Assessment of Flood Risk

3.1 In assessing the risk of flooding for the site the OCC Preliminary Flood Risk Assessment (PFRA)⁵, Strategic Flood Risk Assessment (SFRA)⁶, as well as various Section 19 Flood Investigation Reports^{7,8} have been reviewed alongside the current EA flood data.

Flooding History

3.2 The EA Historic Flood Event Outlines provides information on whether the site has historically flooded (see Figure 3). Figure 3 shows that the site has not previously been affected by any flooding events.

3.3 The EA data notes the majority of fluvial flooding events having occurred along the eastern bank of the River Windrush, the opposite side to the site. LiDAR data has confirmed that ground levels on the development side of the river are far higher than those on the eastern side. This means any out of bank flooding will occur on the other floodplain and equally why this side of the river has multiple fluvial incidents. Fluvial flood events have been shown to have occurred on the western bank of the River Windrush but have reached not reached the development location.

3.4 The upper parts of Emma's Dyke is within a culvert and only becomes open channel at Henry Box Playing Fields which is located by Queen Emma Dyke and Ducklington Lane roads. The EA historic flooding data

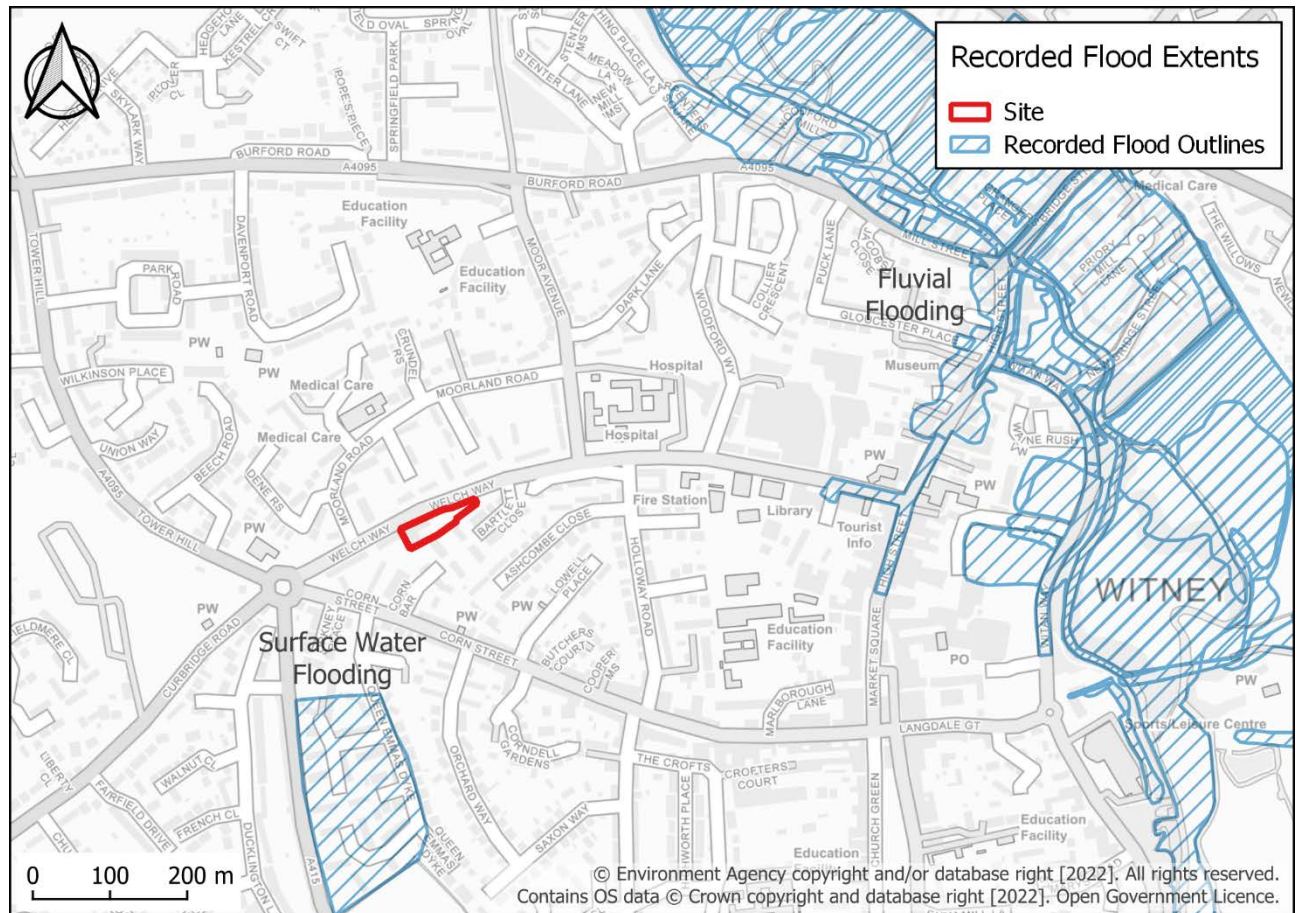
⁵ Oxfordshire County Council, Preliminary Flood Risk Assessment, April 2011

⁶ Oxfordshire County Council, Strategic Flood Risk Assessment, March 2011

⁷ Oxfordshire County Council, Section 19 Flood Investigation Reports, May 2018 Sewer surcharge due to heavy rainfall event at Didcot railway station, June 2019

⁸ Oxfordshire County Council, Section 19 Flood Investigation Reports, Dec. 2020 heavy rainfall flood event in Witney, June 2022

shows the entirety of the playing field to have flooded due to a heavy rainfall event having occurred, which flooding the area, once the watercourse was out of the culvert.



3.5

Figure 3: EA's Recorded Flood Extents

3.6 Section 19 Flood Investigation Reports published by the OCC were reviewed which detailed the flooding events of December 2020 which occurred in Witney. Flooding in the town of Witney was caused by a heavy rainfall event which inundated the local highway drainage system which primarily discharges into the River Windrush. The highway drainage system surcharged due to the rising river levels, which inundated the sewer system. The peaked fluvial event was on the 25th December. This resulted in fluvial flooding affecting many properties throughout the town. 54 properties were confirmed as having flooded internally; specific properties were not noted, it was however confirmed the majority of affected properties were in the vicinity of the River Windrush.

3.7 The OCC PFRA and SFRA did not note of any flooding records within the town of Witney.

3.8 No further Section 19 Flood Investigation Reports or historic flood records have been found at the time of writing which cover other flood events at the site.

Risk of Flooding from Rivers & Sea

3.9 The published GOV.UK Flood Map for Planning shows that the site is located in Flood Zone 2 ('medium risk', which for fluvial sources equates to between 0.1% - 1% Annual Exceedance Probability (AEP)), this can be seen in Figure 4. Areas highlighted in the darker blue shade to the west of the site, seemingly concentrated to the western bank of the River Windrush are classified as Flood Zone 3 ('high risk', equating to a greater than 1% AEP). Unhighlighted regions are denoted within Flood Zone 1 ('low risk', equating to less than 0.1% AEP).

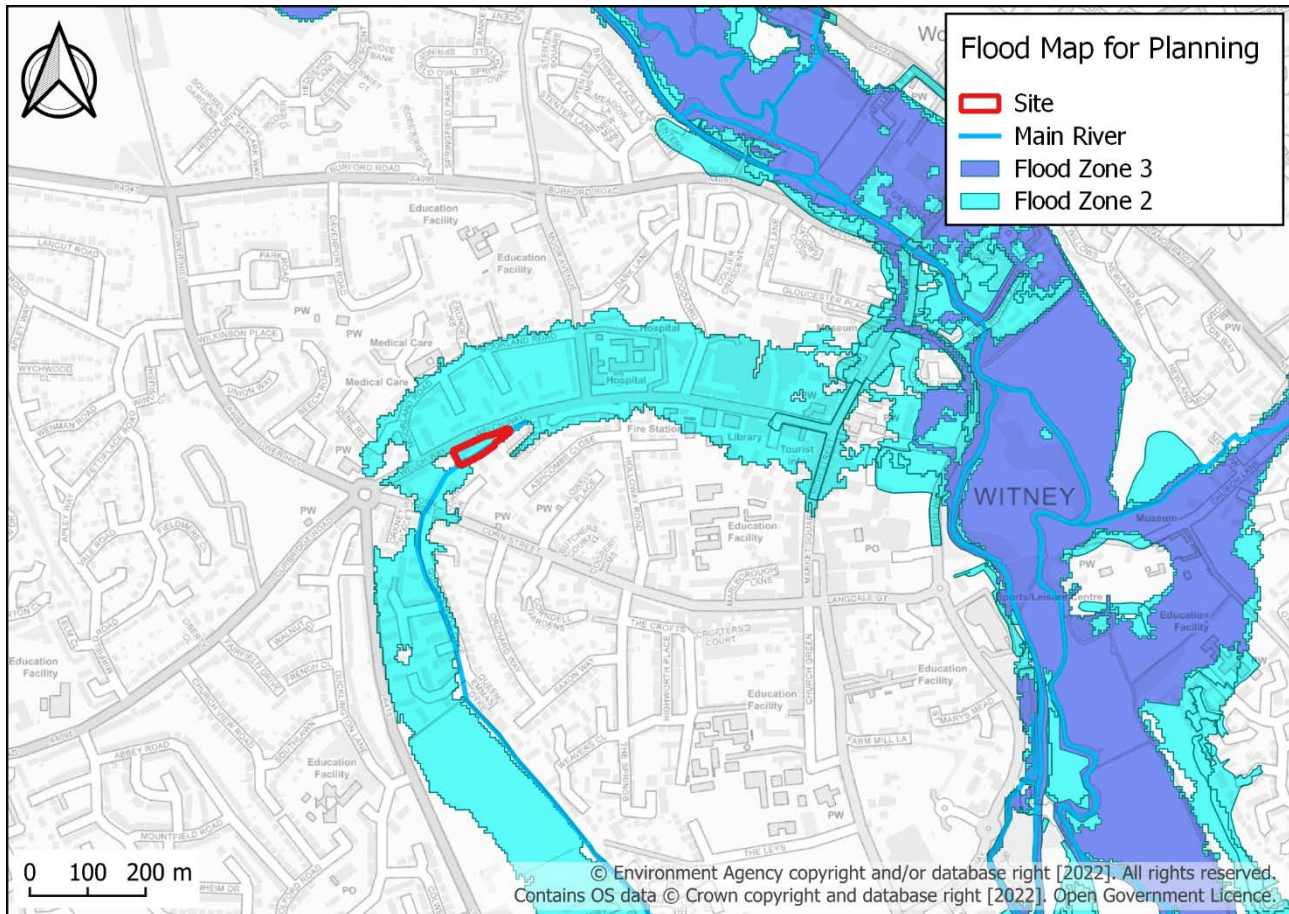


Figure 4: GOV.UK Flood Map for Planning

- 3.10 The hydrological situation in Witney is complex due to the catchment boundaries of the River Windrush and Emma's Dyke being in close proximity to each other. Investigation the FEH website catchment boundaries, the site lies within the Emma's Dyke catchment. The catchment flows westwards and then curves southwards on the western side of Witney before flowing southwards and joining the River Windrush to the south of the A40 and Witney. The River Windrush catchment is approximately 400 m to the east of the site and flows in a southerly direction. In normal flow conditions there is no interaction with the River Windrush and Emma's Dyke watercourses. The watershed between the catchments is the natural high point located on Market Square Street. In extreme flooding, as shown in Figure 4 (up to the 0.1% AEP), the flood mechanics of the two catchments can combine due to man-made changes in the topography. Likewise, Emma's Dyke catchment and river channel has been altered due to man made changes.
- 3.11 Comparing old Ordnance Survey (OS) maps, Emma's Dyke would have been a small watercourse which was enlarged to become a large dyke / ditch to aid with draining this area of Witney. Old OS maps show field drains running to Emma's Dyke channel. In the last 50 years, OS maps show the western side of Witney to become urbanised and though this transition, the watercourse did become culverted. Thames Water asset map of the site, show Emma's Dyke being a culverted watercourse around the site.
- 3.12 Emma's Dyke / the culverted watercourse is an EA Main River from the intersection of Welch Way and Bartlett Close. This is upstream of the site by 113 m. Figure 4 show the extent of the EA's ownership of watercourse and that its main river designation is located on the site. This means any proposals within 8 m of edge of the culvert needs EA permission / an EA permit. This is permission is in addition to any planning permission.

- 3.13 Detailed hydraulic modelling has been undertaken by the EA as part of the Witney Flood Modelling and Mapping Study (Halcrow 2013) with an update in 2017 for revised climate change allowances. The EA have provided the latest detailed flooding information relevant to the site via a Flood Risk Information Request (see Appendix). The data provided includes modelled floodplain extents, levels, and depths, along with in-channel flood flows and levels for several model nodes in the vicinity of the site.
- 3.14 Investigating the model information, the River Windrush model does include some of Emma's Dyke river channel and catchment. The River Windrush includes the Emma's Dyke river channel from when it is open river. This is located by Ducklington Lane, which is downstream of the site. The model does not include any of the culverted watercourse. However, the model does include part of the Emma's Dyke catchment within the 2D element of the River Windrush model, this is to capture the extent of out of bank flooding from the River Windrush.
- 3.15 The detailed modelling information from the EA show the site is affected by flooding in the 1% AEP plus 20% climate change event and above. This can be seen in Figure 5.
- 3.16 The current best practice for climate change allowance is the NPPF, which defers to the National PPG to specify climate change allowances. The PPG recommends an increase in river flows depending on which river basin district the site lies in and the type of development. The range of allowances is based on percentiles which describe the proportion of possible scenarios that fall below an allowance level. The 'Central' allowance is based on the 50th percentile, the 'Higher Central' is based on the 70th percentile and the 'Upper end' is based on the 90th percentile.
- 3.17 The River Windrush belongs to the Cotswolds Management Catchment and the expected lifetime for the proposed scheme is 75 years due to the non-residential, service use. Therefore, the peak river flow climate change allowances are as shown in Table 1, for the 2080's.

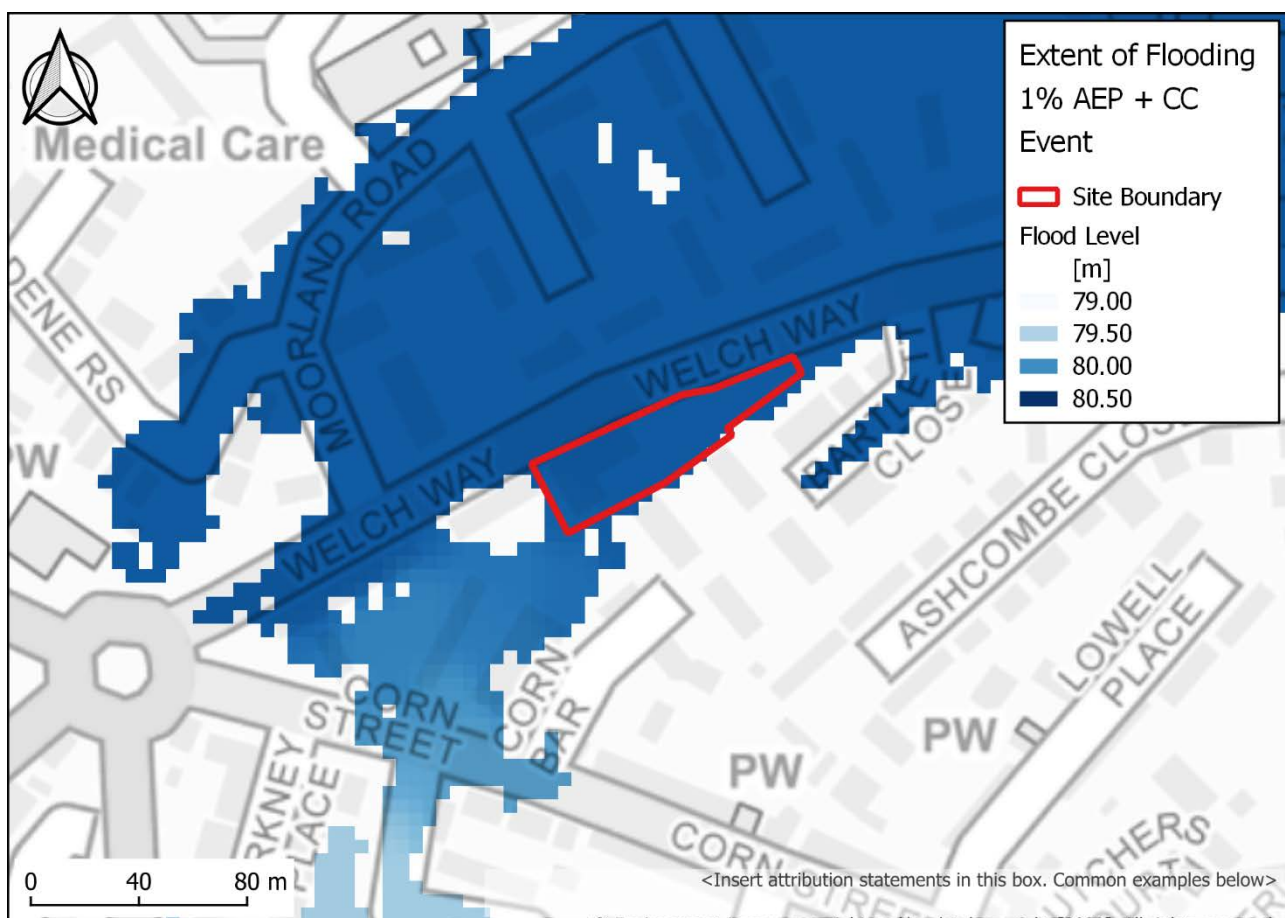


Figure 5: Extent of fluvial flooding during the 1% AEP + 20% CC event

3.18 According to Table 2 of the PPG for Flood Risk and Coastal Change, the proposed development site is classified as 'Less vulnerable' in terms of flood risk. For development located in Flood Zone 2 or Flood Zone 3a, the GOV.UK Climate Change guidance recommends use of the 'central' allowance on peak river flow.

Table 1: Peak river flow allowances by management catchment

Management Catchment	Allowance Category	Total potential change anticipated for the '2080s'
Cotswolds	Upper	82%
	Higher	43%
	Central	30%

3.19 A 75-year life span, as outlined with the PPG for commercial development, would take the development to the 2090s and it is therefore estimated that the total potential change would be above 30% for the central allowance. Given the Witney Flood Modelling and Mapping Study has not been updated to reflect the latest climate change allowances, the current 1% AEP + 20% climate change allowance scenario has been used as the 'design event' with consideration also given to the larger 1% AEP + 35% climate change event. The assessment of these two simulations will ensure the site is assessed correctly for the 1% AEP plus 30% climate change event (design event).

3.20 The modelled flood level for the site based on the design event of 1% AEP + 20% climate change is estimated at 80.22 m AOD and 80.25 m AOD for the 1% AEP + 35% Climate Change event, as shown in Figure 6 for the larger event.

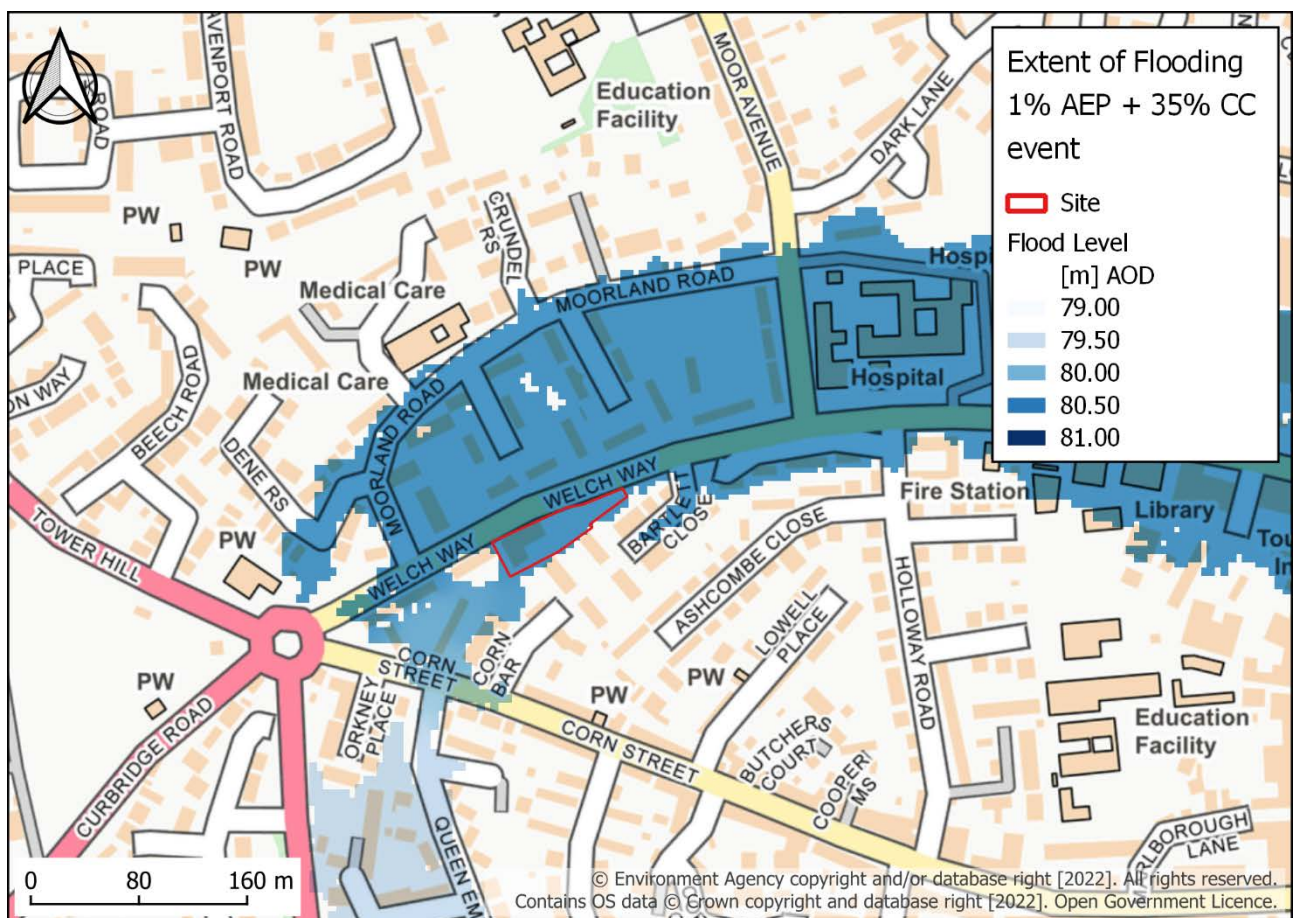


Figure 6: Extent of fluvial flooding during the 1% AEP + 35% CC event

- 3.21 Comparing these flood water levels to the LiDAR extracted ground levels, the site is expected to flood in both design events. Ground levels at the proposed location of the LV panel GRP enclosure are approximately 80.01 m AOD; as such, flood depths during the 1% AEP + 20% CC and 1% AEP + 35% CC events would be of 210 mm and 240 mm, respectively.
- 3.22 The LV panel GRP enclosure is raised using an internal concrete slab plinth of roughly 150 mm. This provides some protection against flooding.
- 3.23 The proposed development has been designed with the highest possible levels and is unable to be raised further due to infrastructure related constraints. If a fluvial flooding event was to occur, the LV panel GRP enclosure equipment would trip out and its components would require an inspection post event. The proposed infrastructure equipment should be waterproofed if it is possible.
- 3.24 It is also recommended that the site operators sign up to the EA's Flood Warning Service⁹, as part of the flood management plan of the site.
- 3.25 When the flood warning is triggered, site operators should remain vigilant and the site should take the necessary actions, to ensure the protection and recoverability of the proposed development. This may include turning off the electrical supply, preventing customers using the electrical charging facilities and getting customers to remove their cars. Once the site is safely shut down, staff should evacuate the area. Both local and on-site conditions should be carefully monitored and considered, and the decision to activate site-specific flood protection procedures should not wait for an official EA Flood Warning if there is a direct and immediate threat of flooding to the site.
- 3.26 The proposed development has implemented suitable measures to reduce the risk of shallow flooding, such as raising the LV panel GRP enclosure by 150 mm. In the case of the design event, the occupiers of the PFS are aware of the consequences and how to manage the site.

Risk of Flooding from Surface Water

- 3.27 Flooding of surface water may occur following intense rainfall events when floodwater is unable to infiltrate into the ground or discharge into natural or artificial drainage infrastructure. In an urban environment, the risk of flooding from surface water and from overloaded sewers is closely related, and both are included in the relevant surface water flooding datasets. Flood water subsequently follows the local area's topography. Surface water flooding events tend to be of a short duration but are potentially severe.
- 3.28 The site was not noted to be located in a Critical Drainage Area (CDA). A CDA is an area that has critical drainage problems, and which has been notified to the local planning authority by such statutory consultees such as the Environment Agency. Typically, these areas are at high risk of surface water flooding.
- 3.29 The GOV.UK online flood mapping includes the risk of surface water flooding. These maps are a useful tool in assessing the extent and frequency of flooding in a general area but do come with a caveat that they should not be used for site specific development or property level. Therefore, engineering judgement is required when using these maps for this purpose.
- 3.30 Figure 7 illustrates the GOV.UK surface water flooding extent map for the site and surrounding area (RoFSW). The dark blue shaded areas show locations of high surface water flood risk, which have a greater than 3.3% (1 in 30) annual probability of flooding, lighter blue areas show medium risk of between 3.3% and 1% (1 in 100) annual probability of flooding and the pale blue areas indicate low risk regions of between 1% and 0.1% (1 in 1000) annual probability of flooding. Areas that are not highlighted

⁹ Flood Warning Service available at: Sign up for flood warnings - GOV.UK (www.gov.uk) [Accessed 14/12/2022]

in blue are classed as having a very low risk of surface water flooding, with a less than 0.1% annual probability of flooding.

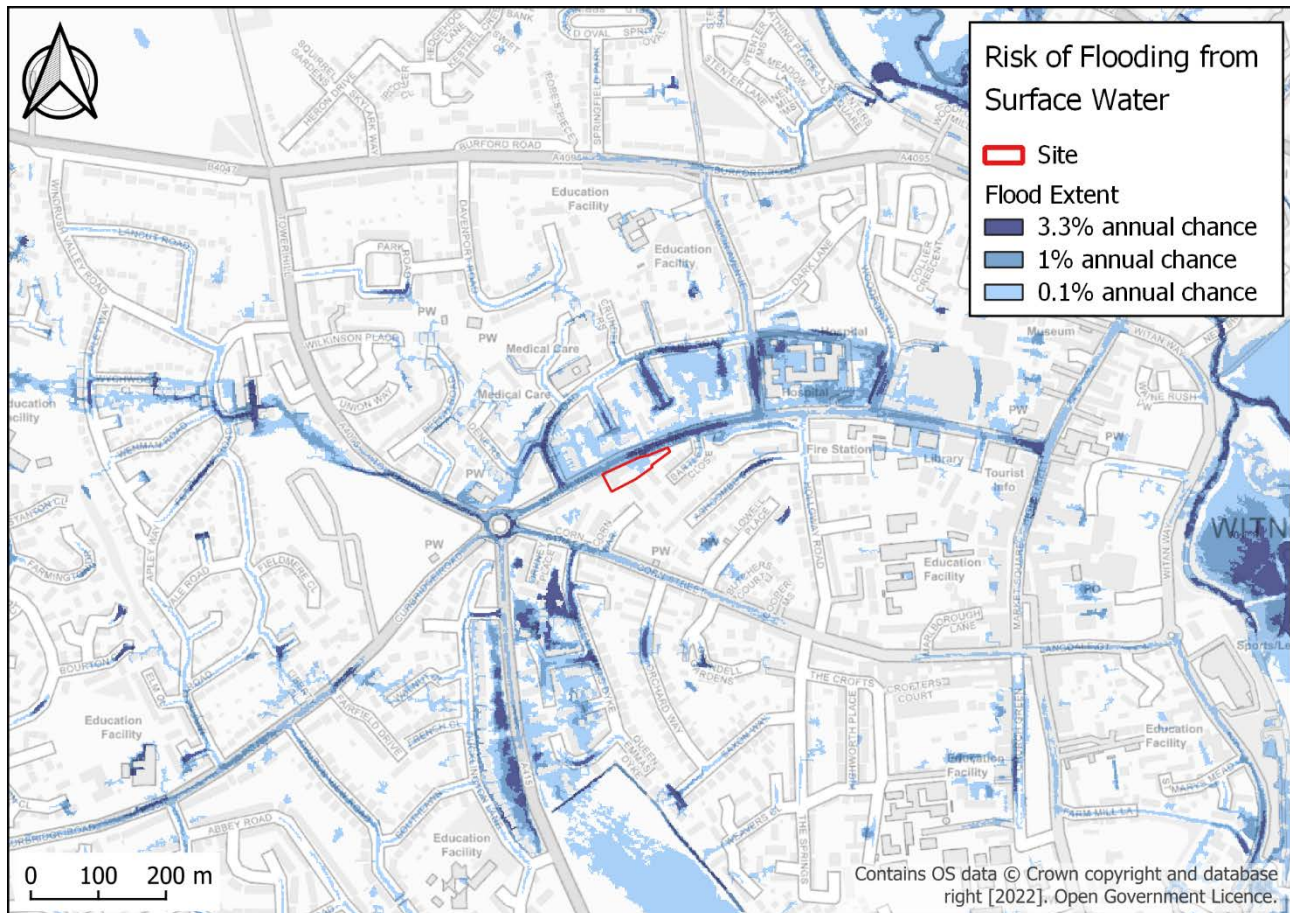


Figure 7: GOV.UK Long Term Flood Risk Map for Surface Water Flood Extent¹⁰

- 3.31 Figure 7 shows the majority of the site to be at “very low” risk of flooding from surface water, while areas around the existing entrance way and car sales centre parking to be at “low” risk of flooding from surface water. As such, further investigation of the GOV.UK maps is required.
- 3.32 The design event is the 1% AEP plus climate change event. It is important to note that surface water maps do not include future climate change, therefore it is common practice to evaluate the 1% AEP event as well as the 0.1% AEP event as a sensitivity test for what might happen in the future over the lifetime of the development. In this way it is possible to use the worst-case scenario (0.1% AEP) as a surrogate for the design 1% AEP plus climate change event.
- 3.33 A map indicating the estimated surface water flood depths in the ‘Low’ risk event (0.1% AEP event), provided by GOV.UK, is shown in Figure 8. This figure shows the site to experience flooding to a depth of no more than 300 mm. Surface water flooding along Welch Way is shown to reach depths of up to 900 mm around the entrance way of the site.
- 3.34 The event shown in Figure 8 (0.1% AEP event) is more extreme than the design flood event (1% AEP event including climate change) and is considered a conservative substitute for this assessment.
- 3.35 The surface water flooding shown is part of the widespread surface water flooding along local roads, and the water is shown to pool to the northeast of the site within the low point of Welch Way (near the hospital) due to the local topography.

¹⁰ <https://environment.data.gov.uk/spatialdata/risk-of-flooding-from-surface-water-depth-1-percent-annual-chance/wms>

3.36 The site is elevated compared to the road levels which provides some protection to the site and reduces the depth of flooding experienced on the site.

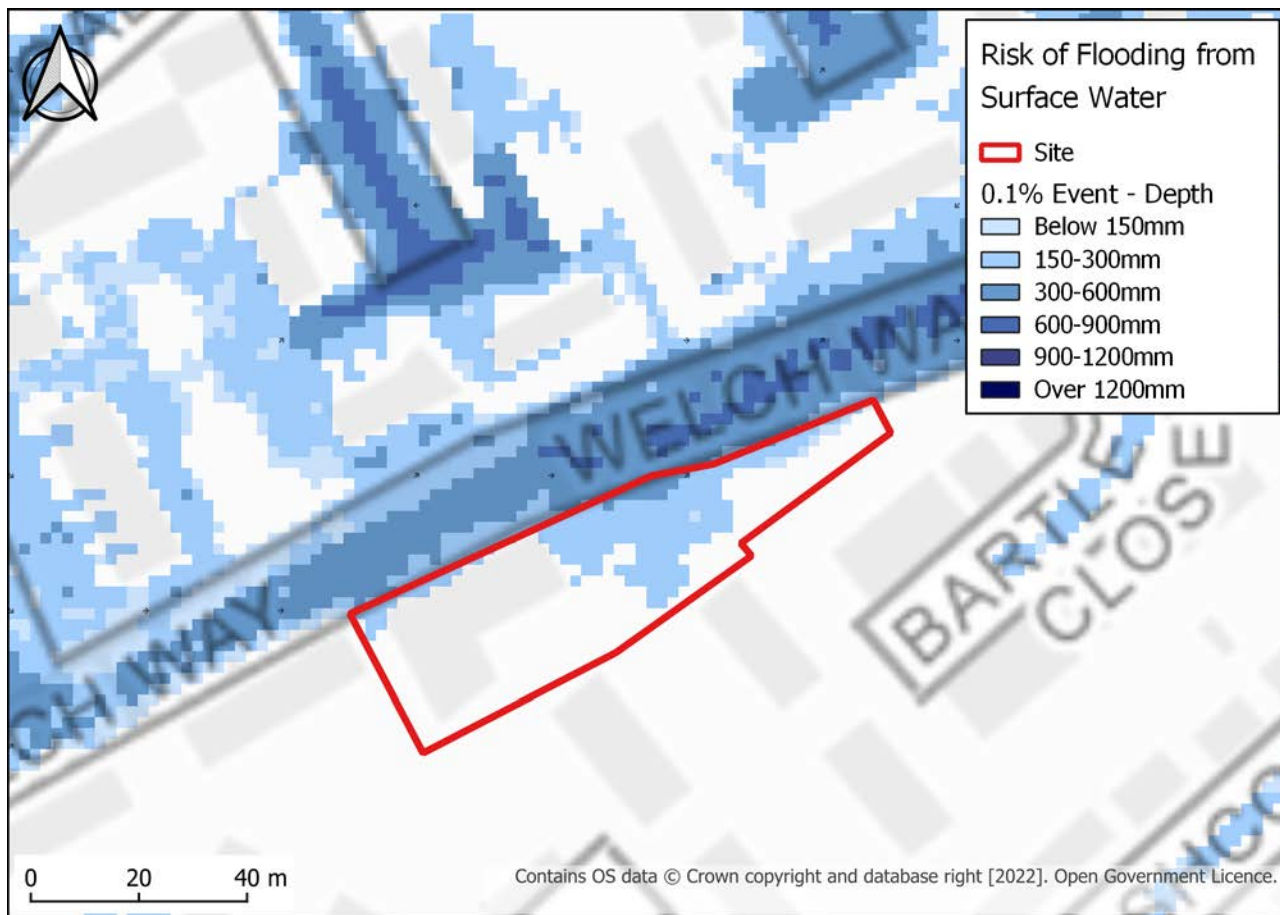


Figure 8: The EA's Long Term Flood Risk Map for Surface Water Flood Extent¹¹

- 3.37 The electrical LV panel GRP enclosure is raised above surrounding ground levels and is typically constructed on a raised 150 mm. This means the LV panel GRP enclosure is elevated above surrounding ground levels. The LV panel GRP enclosure has been located outside of the surface water floodplain, but this additional freeboard provides a further level protection from any exceedance events.
- 3.38 The vehicle charging kiosks, adjacent to each of the parking bays, are also typically raised by 150 mm above the surrounding ground levels. This provides some additional freeboard which should be satisfactory for all kiosks.
- 3.39 The proposed development levels have been designed to the highest levels possible. However, due to constraints involving the infrastructure, development levels are incapable of being raised further. If a significant surface water event was to occur, LV panel GRP enclosure equipment would trip out and all related electrical components would need to be examined once the flood event has concluded. The proposed development would require waterproofing where possible to aid prompt recoverability.
- 3.40 It is also recommended that the site operators are alert to any MET office rainfall warnings, as high intensity rainfall event are the main source for surface water flooding.

¹¹ <https://environment.data.gov.uk/spatialdata/risk-of-flooding-from-surface-water-depth-1-percent-annual-chance/wms>

Risk of Flooding from Sewers

- 3.41 Sewer flooding generally results in localised short-term flooding caused by intense rainfall events overloading the capacity of sewers. Flooding from sewers and highways is linked to the risk of flooding from surface water in urban areas, with the exact source of flooding often indistinguishable.
- 3.42 A plan showing the location of Thames Water sewer assets close to the site is provided in the Appendix. The plans show a 300 mm diameter foul sewer operating and maintained by Thames Water running west to east within Welch Way.
- 3.43 Within the site boundary, the Thames Water Asset plans show the location of a watercourse to the south of the current car wash which flows south eastwards. The plans also show the watercourse to the northeast of the site within Welch Way. The plans do not denote the route between the two watercourses, but it is assumed these are hydraulically connected due to the heritage of Emma's Dyke in the area (and old maps showing the original route of this watercourse).
- 3.44 It is recommended that a utilities and CCTV survey is undertaken at the site to determine the exact route of the culverted watercourse across the site.
- 3.45 A 300 mm diameter surface water sewer is located within Corn Bar (to the south of site) which discharges into the ordinary watercourse.
- 3.46 Thames Water were contacted for information regarding sewer flooding in the area and their records indicate that there have been no incidents of flooding on the site as a result of surcharging public sewers. A copy of this correspondence is provided in the Appendix.
- 3.47 The SFCA did not document any history of sewer flooding within the local area or hold any DG5 records.
- 3.48 In the event of sewer flooding in Welch Way, any flow surcharging of the local drainage system at ground level would follow the local topography of the local area and likely be retained in the roadways and drain towards the River Windrush.
- 3.49 It is expected that there will be no significant changes to the existing on-site drainage system as a result of the proposed redevelopment; and therefore, it is considered that the risk to the development from sewer flooding, as a separate source of flooding from surface water, is low.

Risk of Flooding from Groundwater

- 3.50 Groundwater flooding occurs as a result of water rising up from an underlying aquifer or flowing from springs. This tends to occur after much longer periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is likely to be at shallow depth.
- 3.51 Groundwater flooding can interact with other sources of flooding, exacerbating their risk by reducing the infiltration of flood water to ground. The primary mechanisms for elevated groundwater at the site are associated with periods of above average rainfall in permeable superficial deposits and hydraulic continuity of these deposits with high river water levels.
- 3.52 The online 1:50k British Geology Society (BGS) map¹² indicates that the site lies on a boundary between Alluvium superficial deposits; consisting of clay, silt, sand and gravel, and no superficial deposits. The bedrock geology is the Forest Marble Formation, which typically consists of Mudstone and is largely impermeable.
- 3.53 The DEFRA Magic Maps¹³ show that both the bedrock and Superficial deposits are classified as 'Secondary A' aquifers, defined as a permeable stratum capable of supporting water supplies at a local rather than

¹² Available at: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> accessed: 01/12/2022

¹³ <https://magic.defra.gov.uk/MagicMap.aspx> accessed 22/12/2022

strategic scale, and in some cases forming an important source of base flow to rivers. The DEFRA Magic Maps show that the site is not located in a groundwater Source Protection Zone (SPZ).

- 3.54 There is no onsite ground investigation available. Therefore, publicly available BGS borehole records have been used to verify local ground conditions. The nearest BGS borehole record (SP30NE311) to the site is located to the south, within 70 m of the site, on Corn Bar. At this borehole location a resting water depth was recorded at 8 ft (approx. 2.40m) Below Ground Level (BGL). This should be below any proposed underground utilities.
- 3.55 The nature of development proposed will ensure that any below ground elements are fully protected from groundwater seepage and the ingress of moisture. This means the below ground components should be waterproofed.
- 3.56 The site and surrounding area are predominantly hard paved, which reduces the risk of emergence of groundwater at the surface. Any groundwater emergence would follow localised flow paths such as those shown in the surface water flooding maps; therefore, any flooding experienced would be similar to that shown on surface water risk mapping. This would flow overground and discharge to the local sewer system.
- 3.57 The development is at low risk of groundwater flooding with the mitigation measures proposed.

Risk of Flooding from Artificial Waterbodies

- 3.58 The GOV.UK 'Risk of Flooding from Reservoirs' online map shows that the development location does not lie within an area affected by flooding in the event of the failure of reservoirs. This includes when there is high rainfall event and local watercourses are susceptible to out of bank flooding.
- 3.59 The Environment Agency are the enforcement authority for the Reservoirs Act 1975 in England, they ensure that reservoirs are inspected regularly, and that all essential safety work is carried out. All reservoirs must be inspected and supervised by reservoir panel engineers. There has been no loss of life in the UK from reservoir flooding since 1925.
- 3.60 The site is not considered to be at risk of flooding from reservoirs and there are no further artificial waterbodies in the area that would constitute a significant risk of flooding to the site.

4 Conclusions

- 4.1 This FRA has assessed the risk of flooding from all sources and required mitigation measures in so far as they are required and feasible for the development.
- 4.2 The site is shown to be located in Flood Zone 2. Further analysis of the EA flood water levels and LiDAR extracted ground levels has confirmed that the site is at risk of fluvial flooding during the design event (1% AEP + climate change). Flood depths of at least 210 mm are expected during the 1% AEP plus 20% climate change event.
- 4.3 The majority of the site is not at risk of flooding from surface water during the 1% AEP surface water flooding event, however after accounting for climate change, it is shown that the site may be at risk of flooding from surface water in the future. The central section of the site, where the proposed vehicle charging bays have been located, may experience flooding during the extreme 0.1% AEP surface water floodplain. The proposed LV panel GRP enclosure is located outside of the 0.1% AEP surface water floodplain.
- 4.4 As a result of the nature of the development, it cannot be raised fully out of the area at risk once climate change factors are taken into consideration. The proposed LV panel GRP enclosure and customer charging kiosk have been raised as high as reasonably possible (approx. 150mm above surrounding ground). These are therefore located safely above the 1% AEP surface water flood event. At events larger than

this and / or during the 1% AEP surface water flood event in the future, the proposed electrical infrastructure could be expected to flood.

- 4.5 The proposed development and site should implement a flood management plan as part of the works to protect the proposed infrastructure and ensure staff are able to safely shut down the site before evacuating themselves. Some suggestions are outlined in this Technical Note, however options to protect the infrastructure from flooding should be considered specifically during detailed design.
- 4.6 There is a culverted watercourse located on the site. It is recommended that a survey is undertaken to locate the watercourse. The development will need to get an EA permit (separate from the planning permission) before any works can commence on the site.
- 4.7 There are no other sources of flooding risk which, in isolation, present a risk to the proposed development over. Mitigation provided to protect against potential surface water flooding, including raised levels and a flood management plan, would provide additional reassurance against flooding on site from any source.
- 4.8 We believe that the information contained in this report in relation to flood risk provides sufficient information to demonstrate that the development proposals comply with the requirements of the OCC and the NPPF.

Appendix

- Current and Proposed Plans
- Thames Water Asset Plans

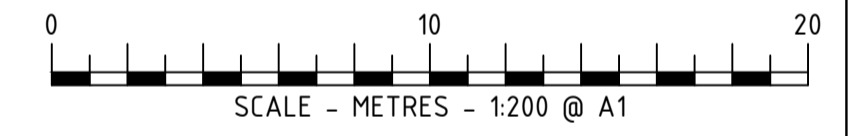
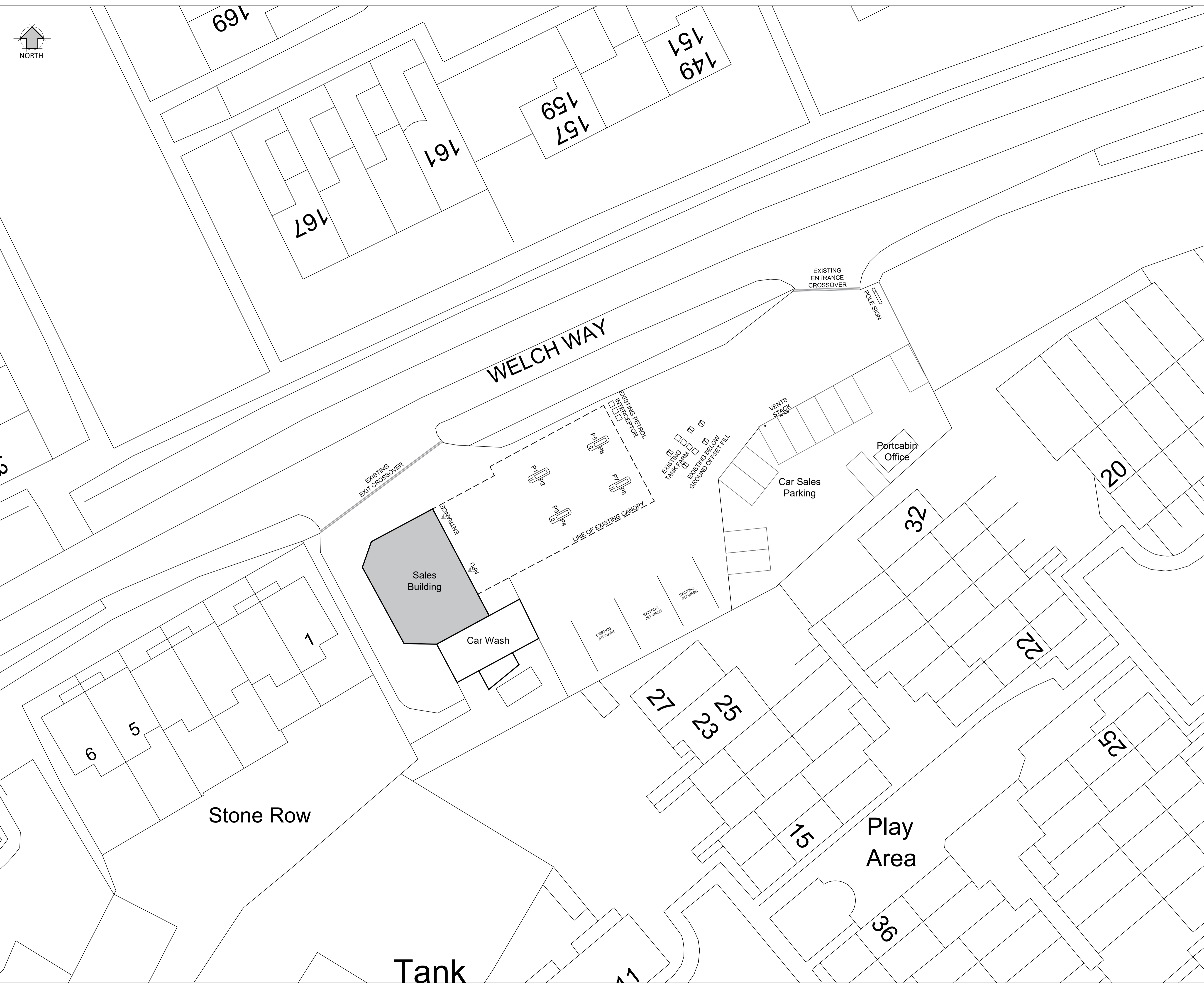


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REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			

PLANNING



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PROJECT
FS330 - WITNEY SERVICE STATION
WELCH WAY
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OX28 6JL

DRAWING TITLE
EXISTING SITE LAYOUT

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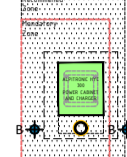
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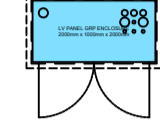
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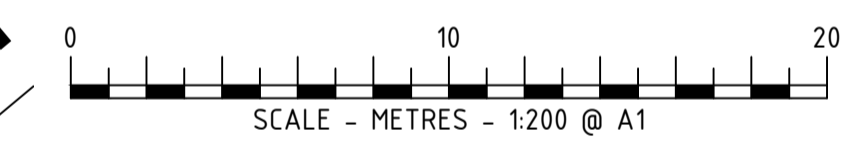
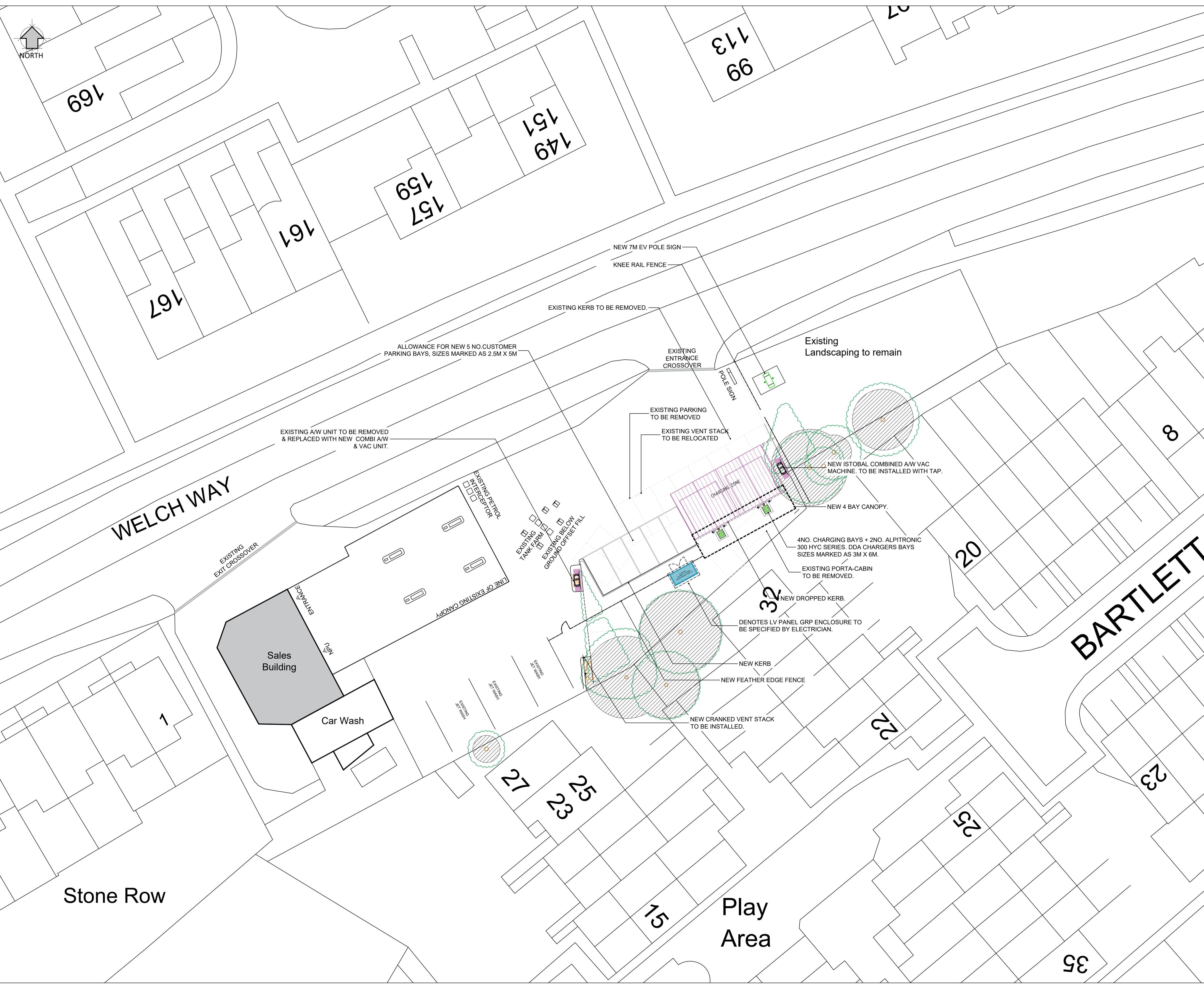
This drawing has been produced for the project listed below, is submitted in support of this application to the Local Planning Authority and is not intended for use by any other person or for any other purpose.

Every effort has been made to ensure the accuracy of these drawings, however MBH Design Studio Ltd. accept no responsibility for any discrepancies arising from the reuse of survey information and preliminary drawings commissioned by the Applicant from others.

EV INFRASTRUCTURE

 DENOTES CHARGING POST
ALPITRONICS HYC 300

 DENOTES BESPOKE LV PANEL GRP ENCLOSURE
TO BE SPECIFIED BY ELECTRICIAN
Unit Size 2000mm x 1000mm x 2000mm H
GRP unit allowed for currently



REV	DATE	DESCRIPTION	DRAWN/CHECKED
C	2023.09.11	NEW EV LAYOUT SHOWN	WG/NS
B	19.12.2022	RPA Zones Shown	RRB/AM
A	31.10.2022	Updated Ev Layout	RRB/AM

PLANNING

mbh

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Rosemount House, Rosemount Avenue, West Byfleet, Surrey, KT14 6LB
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CLIENT

mfg
motor fuel group

PROJECT
FS330 - WITNEY SERVICE STATION
WELCH WAY
WITNEY, OXFORDSHIRE,
OX28 6JL

DRAWING TITLE
PROPOSED SITE LAYOUT

DRAWN BY	DATE	SCALE	PAPER SIZE
KM	06.09.2022	1:200	A1
CHECKED BY	DRAWING NUMBER	REV.	
RRB	13664-P02-FS330	C	

Asset location search



Property Searches

Water Environment Ltd
Coppergate Mews
6Brighton Road
LONDON
KT6 5NE

Search address supplied Total Oil (Gb) Ltd
Witney Service Station
Welch Way
Witney
OX28 6JL

Your reference 22141

Our reference ALS/ALS Standard/2022_4725838

Search date 28 September 2022

Knowledge of features below the surface is essential for every development

The benefits of this knowledge not only include ensuring due diligence and avoiding risk, but also being able to ascertain the feasibility of any development.

Did you know that Thames Water Property Searches can also provide a variety of utility searches including a more comprehensive view of utility providers' assets (across up to 35-45 different providers), as well as more focused searches relating to specific major utility companies such as National Grid (gas and electric).

Contact us to find out more.



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Search address supplied: Total Oil (Gb) Ltd, Witney Service Station, Welch Way, Witney, OX28 6JL

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and



pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

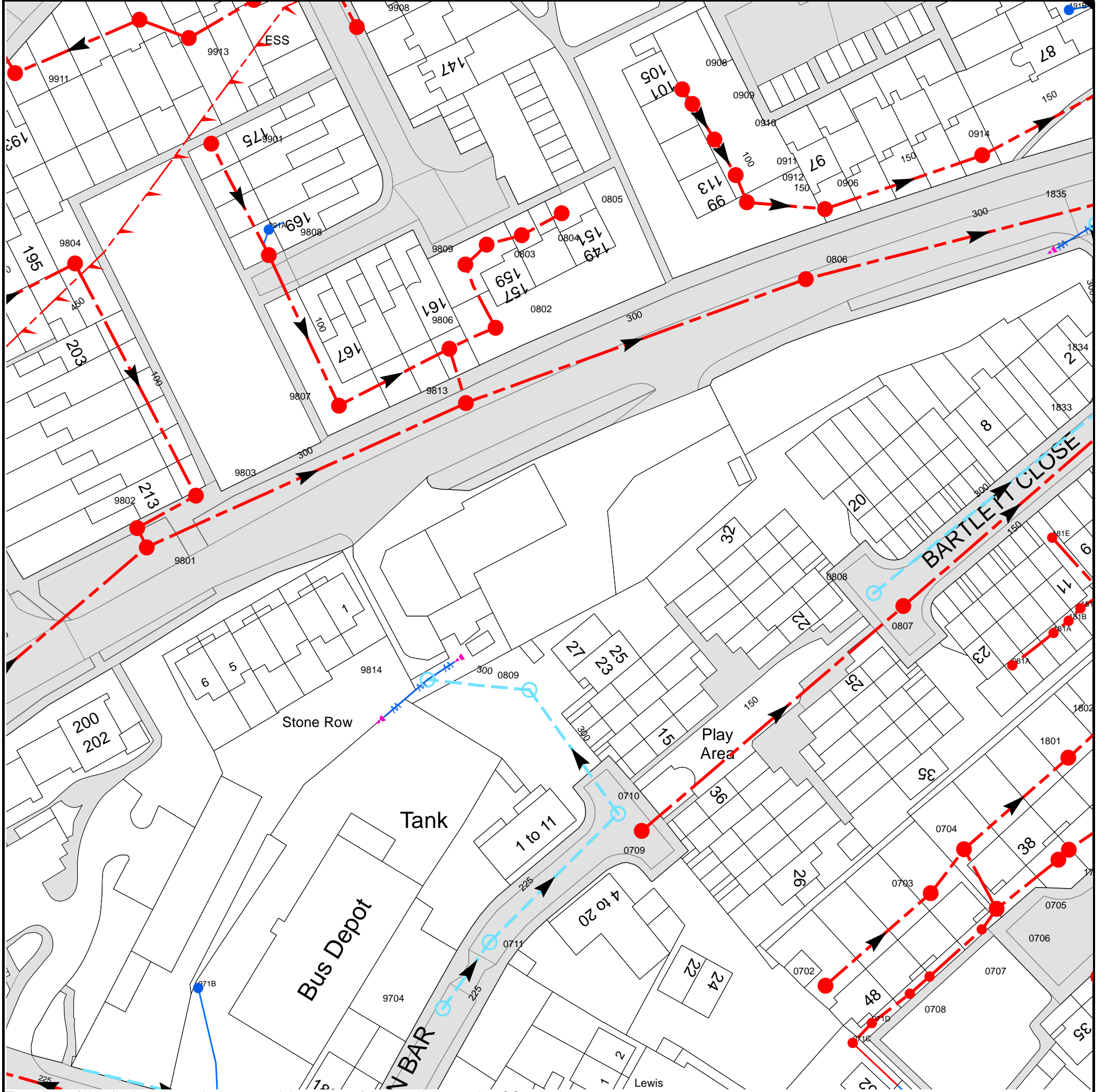
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2022_4725838



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 435013,209840

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available
















Manhole Reference	Manhole Cover Level	Manhole Invert Level
0808	80.49	79.36
0807	80.46	78.74
0914	79.89	78.12
181E	n/a	n/a
181A	n/a	n/a
181B	n/a	n/a
191B	n/a	n/a
181C	n/a	n/a
1835	80.04	78.34
071C	n/a	n/a
071D	n/a	n/a
0708	82.01	81.41
1720	81.79	81.36
0707	n/a	n/a
0706	n/a	n/a
0705	n/a	n/a
0703	n/a	n/a
1719	n/a	n/a
1718	n/a	n/a
0704	n/a	n/a
1801	n/a	n/a
081A	n/a	n/a
9704	80.03	79.21
971B	n/a	n/a
0702	82.07	81.63
0711	80.17	79.11
0709	80.49	79.26
0710	80.49	78.91
0809	80.46	78.73
9814	79.91	78.41
9801	80.03	77.94
9802	80.06	78.21
9803	79.98	78.27
9807	80.03	78.28
9813	79.82	77.76
9911	80.13	78.38
9804	79.98	78.76
9912	n/a	n/a
9913	n/a	n/a
9901	79.97	79.11
9914	n/a	n/a
991A	n/a	n/a
9808	79.95	78.7
9908	79.93	79.14
9806	79.95	78.02
9809	80.03	78.66
0803	80	78.69
0802	80.06	78.18
0804	n/a	n/a
0805	80.06	79.13
0908	80.01	79.21
0909	n/a	n/a
0910	n/a	n/a
0911	n/a	n/a
0912	80.04	78.57
0806	79.66	77.5
0906	79.92	78.46

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.









Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

-  **Foul Sewer:** A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
-  **Surface Water Sewer:** A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
-  **Combined Sewer:** A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
-  Storm Sewer
-  Sludge Sewer
-  Foul Trunk Sewer
-  Surface Trunk Sewer
-  Combined Trunk Sewer
-  Foul Rising Main
-  Surface Water Rising Main
-  Combined Rising Main
-  Vacuum
-  Thames Water Proposed
-  Vent Pipe
-  Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

-  Sewer
-  Culverted Watercourse
-  Proposed
-  Decommissioned Sewer
-  Content of this drainage network is currently unknown
-  Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

-  Air Valve
-  Meter
-  Dam Chase
-  Vent
-  Fitting

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

-  Ancillary
-  Drop Pipe
-  Control Valve
-  Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

-  Inlet
-  Outfall
-  Undefined End



Other Symbols

Symbols used on maps which do not fall under other general categories.





-  Change of Characteristic Indicator
-  Public / Private Pumping Station
-  Invert Level
-  Summit

Areas

Lines denoting areas of underground surveys, etc.

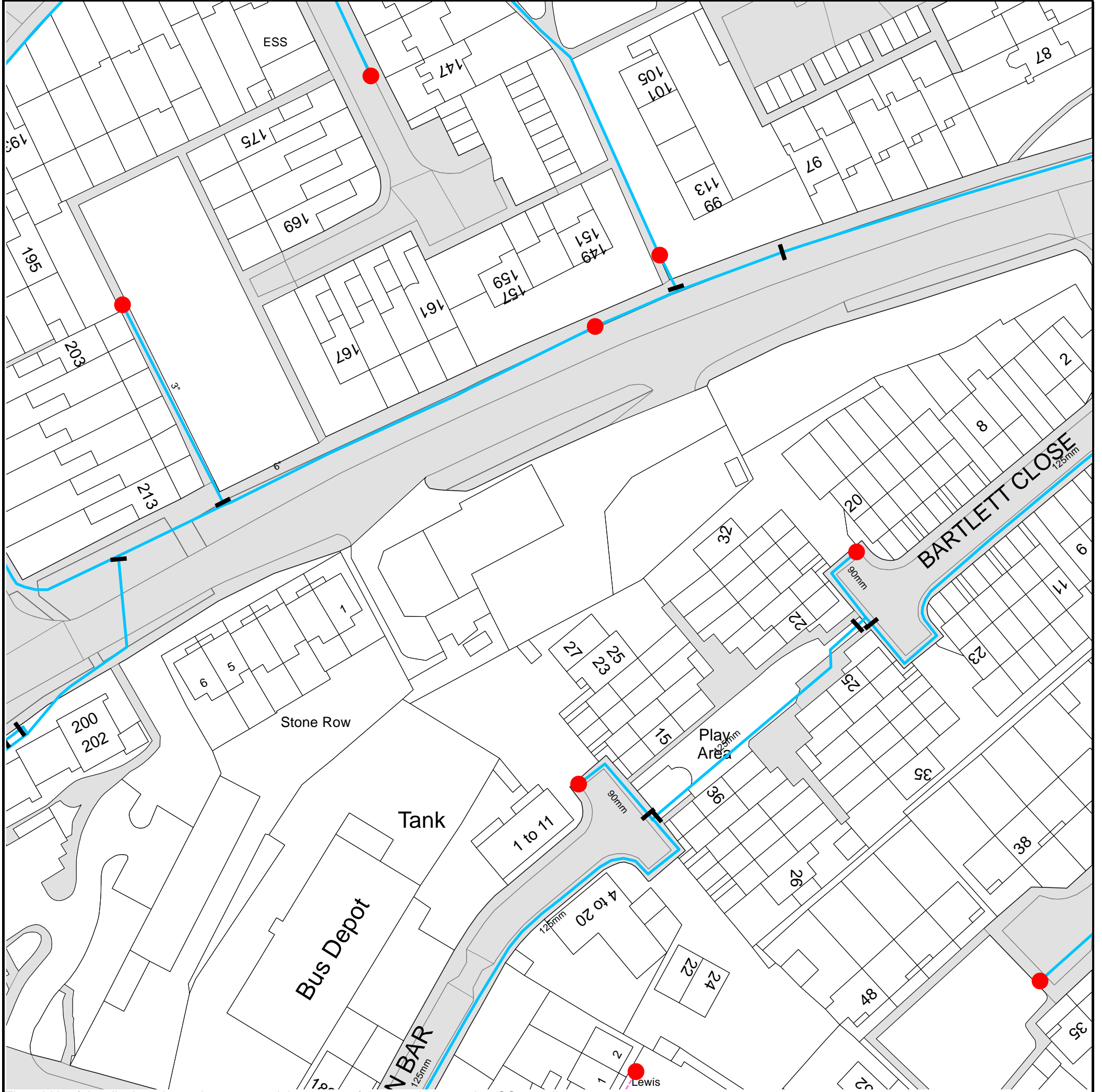
-  Agreement
-  Chamber
-  Operational Site

Ducts or Crossings

-  Casement
 -  Conduit Bridge
 -  Subway
 -  Tunnel
- Ducts may contain high voltage cables. Please check with Thames Water.

5) 'na' or '0f' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 435013, 209840.








The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

-  **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
-  **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
-  **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
-  **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
-  **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
-  **Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
-  **Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

-  General Purpose Valve
-  Air Valve
-  Pressure Control Valve
-  Customer Valve

Hydrants

-  Single Hydrant

Meters

-  Meter

End Items



Symbol indicating what happens at the end of a water main.

-  Blank Flange
-  Capped End
-  Emptying Pit
-  Undefined End
-  Manifold
-  Customer Supply
-  Fire Supply



Operational Sites

-  Booster Station
-  Other
-  Other (Proposed)
-  Pumping Station
-  Service Reservoir
-  Shaft Inspection
-  Treatment Works
-  Unknown
-  Water Tower

Other Symbols

-  Data Logger
-  **Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

-  **Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
-  **Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking	Cheque
<p>Call 0800 009 4540 quoting your invoice number starting CBA or ADS / OSS</p>	<p>Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk</p>	<p>By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number</p>	<p>Made payable to 'Thames Water Utilities Ltd' Write your Thames Water account number on the back. Send to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW or by DX to 151280 Slough 13</p>

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.