

Vale Consultancy

CONSULTING CIVIL & STRUCTURAL ENGINEERS

FLOOD CONSEQUENCE ASSESSMENT (FCA)

27 Ena Avenue,
Neath,
Neath Port Talbot (NPT) County Borough Council,
SA11 3AD

Prepared for: Cole Quinn

Project Ref: 22186 – FCA - 02

(Head Office)

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All the Natural Resources Wales (NRW) mapping data used is under special license. Data is current as of **August 2025** and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.



1 INTRODUCTION

1.1 Purpose of Report

Vale Consultancy has been instructed by *DP Architecture Ltd (On Behalf of the Client)* to prepare a Flood Consequences Assessment (FCA) report to accompany a planning application for the proposed redevelopment at 27 Ena Avenue, Neath; (“The Site”).

The assessment has been undertaken in accordance with the requirements of Technical Advice Note 15 (TAN 15) dated March 2025 and the Local Development Plan (LDP).

1.2 Relevant Documents

The assessment has been informed by the following documents, policy, and information:

- Technical Advice Note 15: Development, Flooding and Coastal Erosion, Welsh Government, March 2025;
- Neath Port Talbot Council Local Development Plan (2011-2026) Adopted January 2016;
- Flood Consequences Assessments: Climate Change Allowances, Welsh Government, September 2021;
- Neath Port Talbot County Borough Council Local Flood Risk Management Strategy, June 2013;
- South-West Wales – Stage 1 Strategic Flood Consequence Assessment (November 2022) JBA;
- Welsh National Marine Plan (November 2019).

1.3 Relevant Consultees

- Neath Port Talbot County Borough Council (LLFA)
- Natural Resources Wales (NRW)
- DCWW (Welsh Water)
- British Geological Survey (BGS)
- Cranfield University Soilscape.

NRW have been consulted via their free pre-application consultation service however they have responded to say;

‘Thank you for your request for our free discretionary advice service. We are currently unable to provide a site-specific preliminary opinion on your proposal due to workload and staffing issues.

Advice on environmental considerations and the assessments needed to support a planning application can be found on our website’.

1.4 Planning

As per the Planning Application (Ref: **P2025/0370**) the proposals are for;

‘Proposed change of use from dwellinghouse (use class C3) to 7-bed House in Multiple Occupation (HMO) (use class Sui Generis), the works for which include fenestration alterations, the construction of a rear dormer extension and the installation of two no. roof lights within the principal roof slope.’

2 SITE DETAILS AND PROPOSED DEVELOPMENT

2.1 Site Location

The Site is located at 27 Ena Avenue, Neath, NPT County Borough Council, SA11 3AD, OS Grid Reference SS 75542 97248 (275542E, 197248N) ("The Site"). The Site is bounded by neighbouring residential properties to the north, Ena Avenue to the east, and residential units to south and west. Surrounding land use occupancy here is generally residential. Provision of site access / egress is from Ena Avenue. **Refer to Figure 1.**



Figure 1: Site Location Satellite Imagery Plan and Surface Water Features

2.2 Existing & Proposed Development

In its current arrangement; The Site is occupied by a two-storey residential property with x4 bedrooms (upon the First Floor) and Attic space above. The Ground Floor has a Garage, Kitchen, Dining Room, Living Room and Lounge. **Refer to Appendix A – Existing Site Plans.**

Proposed change of use from dwellinghouse (use class C3) to 7-bed House in Multiple Occupation (HMO) (use class Sui Generis), the works for which include fenestration alterations, the construction of a rear dormer extension and the installation of two no. roof lights within the principal roof slope.

The proposed plans indicate x 4 bedrooms on the First Floor; x 5 on the First Floor and x 2 within the Attic space which is to be converted into a dormer. The Garage is to be retained along with the kitchen and dining area upon the Ground Floor (albeit with refurbishment and reconfigured layout). There are no habitable spaces located upon the Ground Floor.

Refer to Appendix B – Proposed Site Plans.



TAN15 classifies residential development as Highly Vulnerable (HVD) to flood risk. The existing occupancy is classified as Highly Vulnerable to flood risk. Therefore, the proposals do not constitute an increase in vulnerability classification. In accordance with TAN15, the proposals are considered to be **Redevelopment** which is defined by NRW as;

‘Any development on previously developed land as defined in Planning Policy Wales (PPW)’. PPW generally gives preference to the reuse of previously developed land before greenfield land but does recognise that this may not be appropriate in all cases’.

2.3 Surface Waterbodies in the Vicinity of the Site

The **Gnoll Brook** (Ordinary Watercourse) is the closest surface water feature in proximity to the site and is located approximately 140m northeast from The Site at its nearest point (275658E, 197311N) where it is culverted beneath urban infrastructure and flowing northwest.

The River Neath (**Main River**) is located > 680m northwest from the application site, with the **Tennant Canal** further afield. The River Neath flows southwest then south from here before discharging into **Swansea Bay**. The **Eastland Brook** and **Crythan Brook** (Ordinary Watercourses) are located approximately 900m south and 890m southwest from The Site, respectively.

2.4 Topographic Levels

In the absence of a topographic survey for the site, LiDAR data to metres Above Ordnance Datum (m AOD) has been used to develop a 1m resolution Digital Terrain Model (DTM) of the site and surrounding area.

A review of OS Maps indicates a level of **14.3m AOD** within Ena Avenue, a few metres southeast from the property. A review of the DTM indicates existing site levels (within the extents of the redline site boundary) are in the region of 13.85 (minimum) – **14.64 m AOD** (maximum), falling in a southeast direction.

Further afield, the lay of the land within the wider catchment generally falls from southwest to northeast, towards the **River Neath**.

A mean level for the site boundary is **14.35 m AOD**. This has been assumed as the FFL of the property for this study. Taking typical UK ceiling heights (2.4m) into account; then all habitable spaces to be located at levels (at least) in the region **16.7m AOD**.

Refer to Figure 2. Refer to Appendix C – LiDAR Extract DTM.

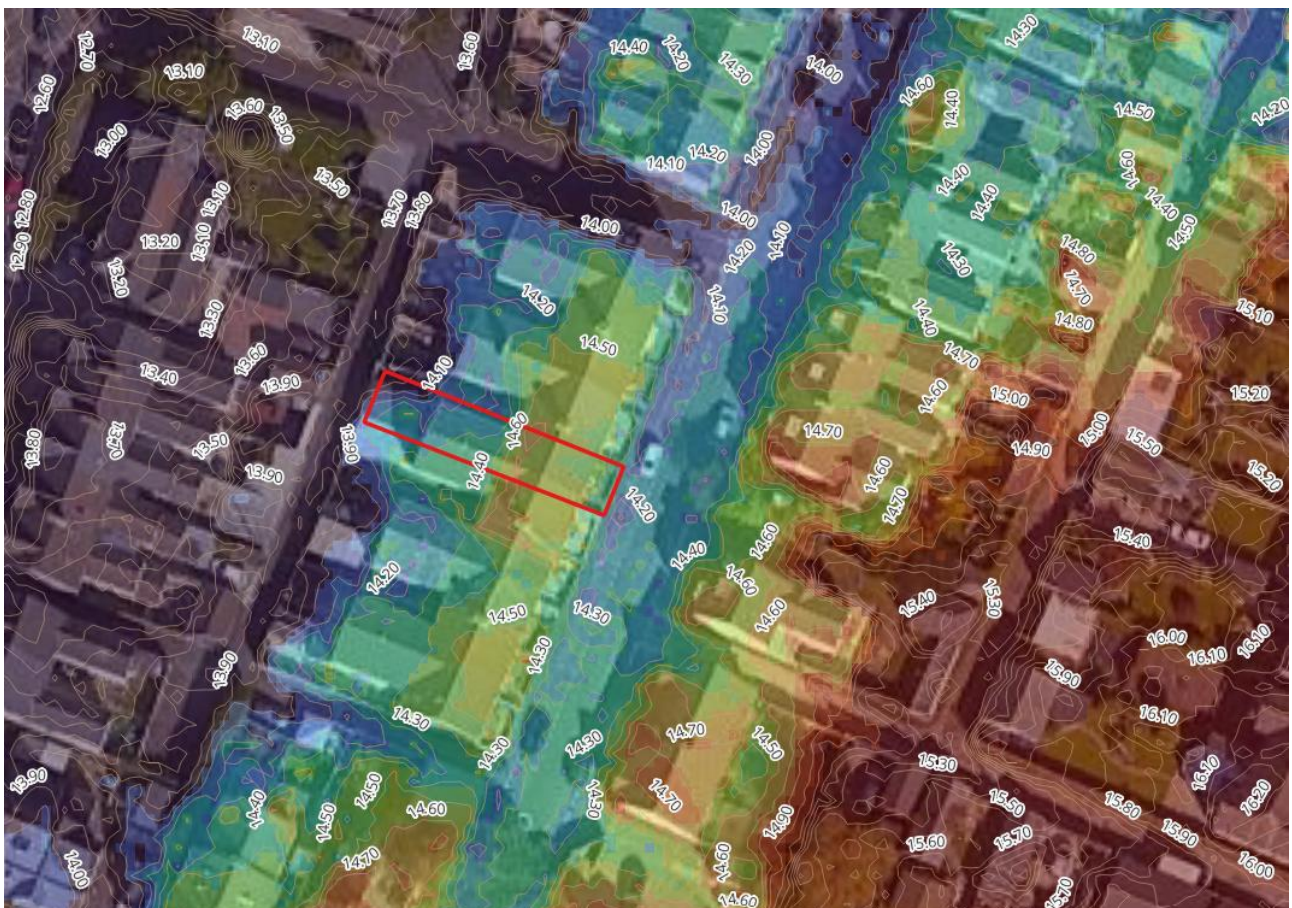
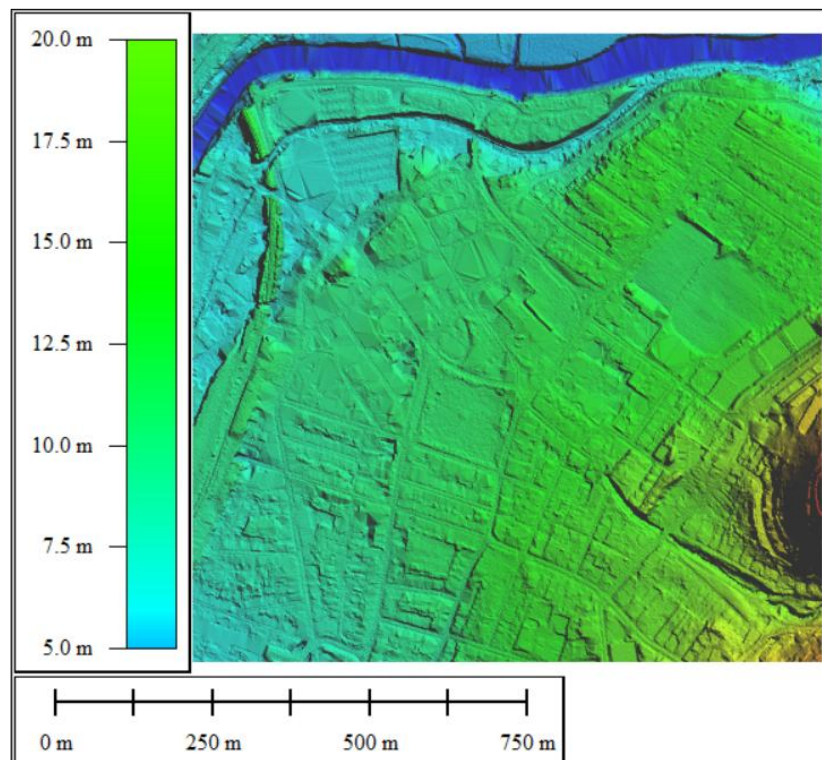


Figure 2: 1m Resolution DTM LiDAR Extract



2.5 Existing Ground Conditions

According to Soilscape soils dataset produced by the Cranfield Soil and AgriFood Institute, soil conditions at the site and within the surrounding area are described as 'Slowly permeable seasonally wet acid loamy and clayey soils' (Soilscape 17), characterised by impeded drainage that drains to the local fluvial network under naturally prevailing conditions.

British Geological Survey (BGS) Mapping of surface geology indicates Glaciofluvial Sheet Deposits comprising Devensian Sand and Gravel as the underlying Superficial Deposits. Bedrock Geology is listed as Swansea Member – Sandstone, Swansea Member – Mudstone, Siltstone and Sandstone, and also Hughes Member – Mudstone, Siltstone and Sandstone. No Made Ground is identified at the location of the site; neither in the near vicinity.

A review of BGS and NRW records indicate that Superficial Deposits are classified as Secondary A Aquifer (Low Vulnerability) whilst Bedrock is also listed as Secondary A Aquifer (Low Vulnerability). The site is not located in a designated groundwater source protection zone.

2.6 Existing Drainage

Welsh Water (DCWW) Maps have been acquired and indicate existing formal public drainage infrastructure. There is a 225mm Vitrified Clay (VC) public combined sewer within Ena Avenue and also a 150mm VC public combined overflow drain located towards the rear (west) of the properties along Ena Avenue, here; including no.27.

Refer to Appendix A – DCWW Wastewater Asset Plans.

2.7 Proposed Drainage

Under the proposals, the existing network will be retained, and all surface and foul water effluent drainage will be designed in accordance with national, regional, and local policy.



3 PLANNING POLICY

3.1 National Planning Policy

Future Wales - the National Plan 2040 sets out the national development framework for Wales with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.

Policy 8 - Flooding states that “flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported. The Welsh Government will work with Flood Risk Management Authorities and developers to plan and invest in new and improved infrastructure, promoting nature-based solutions as a priority. Opportunities for multiple social, economic, and environmental benefits must be maximised when investing in flood risk management infrastructure. It must be ensured that projects do not have adverse impacts on international and national statutory designated sites for nature conservation and the features for which they have been designated.”

PPW sets out government's planning policies for Wales and how these are expected to be applied. TAN15 (2025) provides technical guidance which supplements the policy within PPW and seeks to ensure that flood risk is considered at all stages in the planning process and is appropriately addressed.

The general approach of TAN15 is to set out a precautionary framework to guide planning decisions in areas at high risk of flooding. The overarching aim of TAN15 is to provide a framework within which the flood risks arising from rivers, the sea and surface water, and the risk of coastal erosion can be assessed. It also provides advice on the consequences of the risks and adapting to and living with flood risk.

National policy requires that planning applications for new development proposals should incorporate SuDS to appropriate operational standards and with maintenance arrangements in place unless there is clear evidence that this would be inappropriate. Statutory standards for sustainable drainage were published by Welsh Government in October 2018 in relation to the design, construction, operation, and maintenance of sustainable drainage systems serving new developments of more than one house or where the construction area is equal to or greater than 100 m².

These standards set out how surface water runoff generated during the 100%, 3.3% and 1% AEP rainfall events and for events exceeding the 1% AEP event should be managed, how peak runoff rates should be restricted and how runoff volumes should be controlled. Approval is subsequently required from the SAB before construction can commence.

3.2 Local Planning Policy

The NPT County Borough Council Local Development Plan (LDP 2011 – 2026) was adopted in January 2016 and provides a framework for sustainable development within the Local Authority up to 2026. A replacement adopted LDP will be adopted hereafter.

The extensive document has been consulted, and in particular; all policies relating to Flood Risk, Surface Water Drainage / Management and Climate Change have been considered to inform this study to ensure that the proposals are in alignment with the aims and objectives of the LDP.



3.3 Water Framework Directive

The Water Framework Directive (WFD) provides a legal framework for the protection, improvement and sustainable use of inland surface waters, groundwater, transitional waters, and coastal waters across Wales, and seeks to:

- Prevent deterioration in the status of aquatic ecosystems, protect them, and improve the ecological condition of waters;
- Achieve at least 'good' status for all waterbodies by 2015 or at the latest 2025;
- Promote the sustainable use of water as a natural resource;
- Conserve habitats and species that depend directly on water;
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Contribute to mitigating the effects of floods and droughts.

The WFD applies to any proposed development which has the potential to impact on a waterbody. Where this is the case, NRW may need evidence demonstrating that the proposed development does not compromise the aims of the WFD.

3.4 Sustainable Drainage Systems (SuDS) Approval Body (SAB) Application

The site and proposals are deemed exempt from a SAB Application as the building (unit) footprint will remain the same and no additional impermeable surfaces are incorporated. The proposed works will be limited to internal refurbishment and reconfiguration of the existing unit.

4 SOURCES OF FLOODING AND PROBABILITY

4.1 Historical Records of Flooding

The Flood Map for Planning - Recorded Flood Extents and associated database does not allude to or indicate any historical incidents of flooding at the site or within the vicinity.

4.2 Flood Risk from the Sea (Tidal / Coastal) and Rivers (Fluvial)

The Flood Map for Planning - Rivers and Sea (**Figure 3**) indicates the site to be located in **Flood Zone 1** (Rivers), **Flood Zone 2** (Rivers) with some of the 'cells' representative of the **Flood Zone 3** (Rivers) extent very marginally impinging on the application site boundary (southern extent). The site is not located within a **TAN15 Defended Zone**. Refer to **Figure 3**.

The Site is located within **Flood Zone 1, 2 and 3 (Rivers)**.

The site is located wholly within **Flood Zone 1** from **Tidal sources (The Sea)**.

The flood zones are defined as follows and include the effects of climate change:

- Flood Zone 1 (Rivers): Less than a 0.1% chance of flooding from rivers in a given year, including the effects of climate change;
- Flood Zone 2 (Rivers): Areas with a 0.1% to 1.0% chance of flooding from rivers in a given year, including the effects of climate change;
- Flood Zone 3 (Rivers): Areas with more than a 1.0% chance of flooding from rivers in a given year, including the effects of climate change;
- Flood Zone 1 (Sea): Areas with less than 0.1% chance of flooding from tidal sources in a given year, including the effects of climate change.

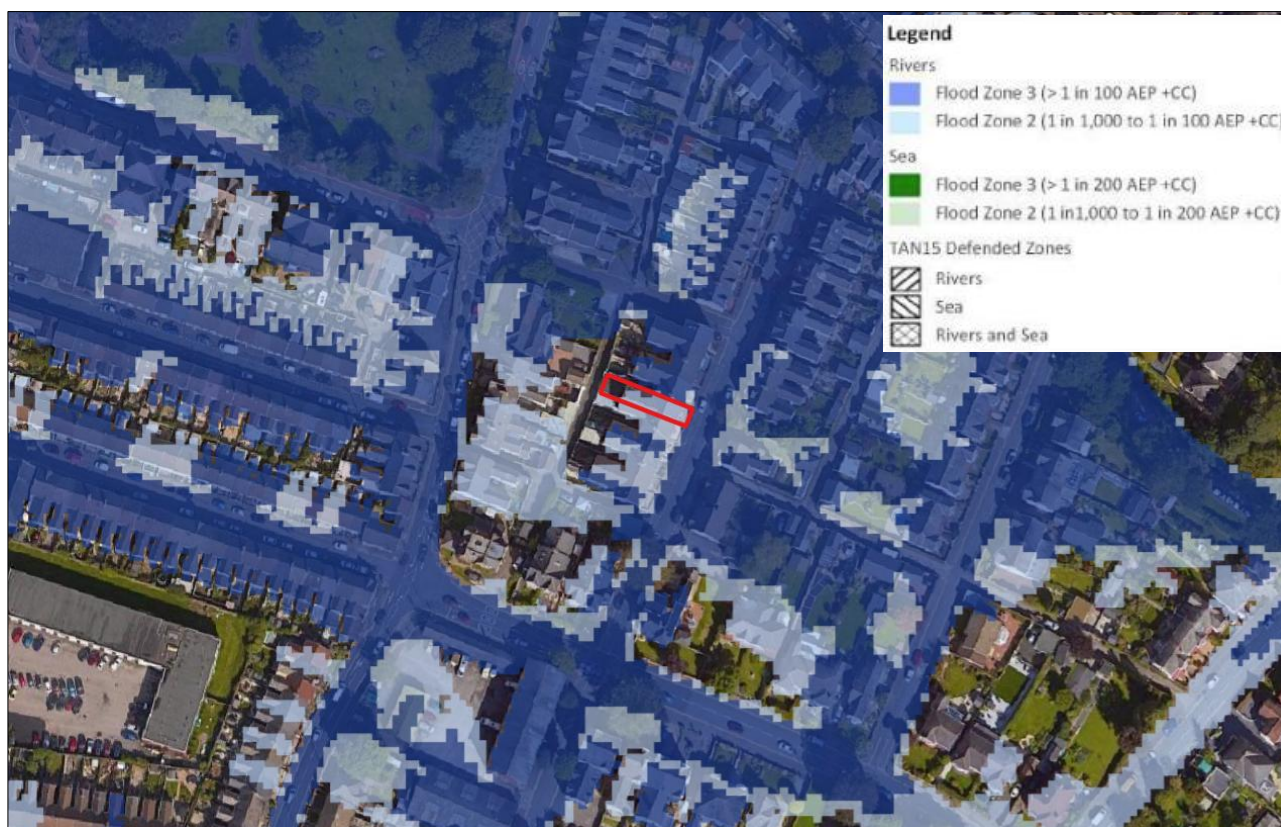


Figure 3: Flood Map for Planning – Rivers & Sea
Source: Natural Resources Wales Website; Accessed: August 2025



The Site is located within **Flood Zone 1 (Sea)**. Therefore, it can be concluded that The Site is at **Low – Risk** of flooding from tidal sources over the course of its lifetime expectancy, including the potential impacts of climate change. Furthermore, The Site is located approximately 7km away from **Swansea Bay**.

The Site falls well outside the model extents for the hydraulic model for the **River Neath**, here. Therefore, the source of potential flooding to the site is from the **Gnoll Brook** which is an ordinary watercourse. Currently, there is no hydraulic modelling data available to analyse and / or quantify the perceived flood risk from the surface water feature. However, the proposals are for redevelopment of the existing site which will retain its current building footprint and already serves as a residential property. Therefore, the use of the FMfP in this case is considered commensurate with the scale and nature of the proposals.

Furthermore, and moreover, all habitable spaces are to be located upon First Floor and above; situated at levels of at least **16.70 m AOD**.

The NRW flood maps uses a combination of generalised national scale modelling and detailed local models where they exist. In the case of the proposed redevelopment, the site is not covered by detailed fluvial flood modelling of the Gnoll Brook and to undertake such modelling would be a disproportionate exercise. Therefore, to inform this assessment the flood extents from National Flood Hazard Maps have been used to generate estimated flood levels for the proposed redevelopment.

National Hazard Mapping fluvial depth extents have been extracted and added to the available LiDAR data in order to produce a predicted flood level (m AOD) for **High, Medium**, and **Low** risk scenarios for both present day and climate change events. The flood levels have been compared to the assumed (yet informed) FFL of **14.35 m AOD** in order to assess the potential for internal flooding. The results are summarised in **Table 1**, below.

Table 1: National Hazard Mapping Results representative of the potential flood risk from the Gnoll Brook

Flood Risk Scenario	Flood Level (m AOD)	Finished Floor Level (m AOD)	Flood Depth (m)	Flood Velocity (m/s)
Present Day 1 in 100	14.34 m AOD	14.35 m AOD	No Flooding	No flooding
Present Day 1 in 1000	14.47 m AOD	14.35 m AOD	0.12 m	0.21 m/s
1 in 100 + 30% CC	14.39 m AOD	14.35 m AOD	0.04 m	0.18 m/s
1 in 100 + 75% CC	14.47 m AOD**	14.35 m AOD**	0.12 m **	0.20 m/s**
1 in 1000 + 30% CC	14.56 m AOD	14.35 m AOD	0.21 m	0.23 m/s

** Derived from difference between 1 in 1000 + 30% CC and 1 in 100 + 30% CC and then an extrapolation process to obtain results for the 1 in 100 + 75% CC.

Seeing as the site falls within **Flood Zones 1, 2 and 3 (Fluvial)**, and the topographical levels across the site are not highly variable – it can be ascertained that maximum estimated flood depths at the site would likely be within the tolerable conditions outlined in Figure 6 of TAN15. For instance; **Flood Zone 1** is representative of



areas that are likely to remain flood-free in up to and including a 0.1% annual event probability (AEP) Fluvial event (including climate change allowances) from the **Gnoll Brook**. Therefore, if it is considered that the site could and may flood during the critical 1% AEP Fluvial event including climate change allowances (Flood Zone 2), with areas of the site remaining flood-free and dry (i.e. located within Flood Zone 1) – then it is highly unlikely (when the modes and mechanisms of potential flooding are considered; and a pragmatic view adopted) that depths and velocities would be significant. For example, it is impossible that half of the site could / would be inundated >600mm of inundation waters with the rest completely flood free (especially considering the range in levels as per the DTM).

Therefore, it can be concluded that the site is at **Medium-High Risk** of flooding from Fluvial (Rivers) sources over the course of its lifetime expectancy (100-years). Ena Avenue is located within **Flood Zone 3 (Rivers)** and therefore is considered to be at **Medium – High Risk** of Flooding from Fluvial sources.

Furthermore, there is an argument to suggest that the extreme flood extents as represented by the FMfP from Fluvial and Pluvial sources at this location are relatively similar to one another. Areas downstream (from the site) and northwest and northeast seem to be at greater risk with flows seeming to be conveyed by the urban infrastructure (including culvert) in the aforementioned orientation and **away** from the site.

Mitigation measures (**Section 5**) should be rigorously adopted to ensure the potential risk and associated inherent consequences are minimised and deemed acceptable and manageable across its lifetime expectancy.

In fact, and to play the contrarian – there is an argument to suggest that the Redevelopment of the site could provide a betterment over the existing conditions when it comes to the flood resilience and resistance of the property compared to the status quo – with the adoption of mitigation measures and particularly the undertaking of a FWEP in conjunction with NPTs emergency planning department and NRW.

The report and FWEP should be updated upon any future availability of hydraulic modelling results / outputs. Having said this; it is unlikely that the results would provide us with much more of an understanding of the mode and mechanisms of flooding here in an extreme event; although it would enable the risk to be analysed quantitatively.

It is important to note that all habitable spaces are to be located at First Floor and above (level of approximately **16.70m AOD**, which realistically is well above any potential design flood levels (DFLs) over the next 100-years, including the potential impacts of climate change.

It is well known that the Gnoll Brook catchment is ‘flashy’ in that it (**Gnoll Brook**) responds to (and recovers from), quickly, to extreme rainfall events. Therefore, any potential inundation as represented by the extreme fluvial extents here would recede relatively quickly and which would also be assisted by the local surface water drainage network and infrastructure.

4.3 Surface Water & Small Watercourses (Pluvial)

Surface water (or pluvial) 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 FMfP ‘Surface Water and Small Watercourses’ Map indicates that The Site is in **Flood Zone 1** (Surface Water and Small Watercourses) which is defined as; Areas with less than 0.1% chance of flooding from surface water and / or small watercourses in a given year, including the effects of climate change. **Refer to Figure 4.**



Figure 4: Flood Map for Planning – Surface Water & Small Watercourses
Source: Natural Resources Wales Website; Accessed: August 2025

Therefore, it can be concluded that the site is at **Low Risk** of flooding from pluvial sources.

Ena Avenue which provides safe access / egress to and from the site is located within **Flood Zone 2**, here. **Flood Zone 2** is defined as Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from surface water and / or small watercourses in a given year, including the effects of climate change. Therefore, the site access is considered to be at **Low – Medium Risk** of flooding from pluvial sources. **Refer to Figure 4.**

The Flood Risk Assessment Wales Map has been utilised to provide Depths, Velocities and Hazards, indicates that during a '**Low Risk**' event, maximum estimated flood depths range between **0.11 – 0.22m**, with maximum associated inundation velocities recorded in the region of **0.15 – 0.24 m/s** at The Site. In this event a maximum hazard rating of 0.75 – 1.25 is recorded and marginally impinges on The Sites eastern boundary. This represents or refers to '**Danger to some**'. However, the large majority of the site and the whole of the property have a hazard rating < 0.75 ('**Very Low Hazard**').

During the '**Medium**' and '**High Risk**' events there are no depths or velocities to report on. The whole of the site is shown to be **outside** the extreme flood extent.

Refer to Appendix D – Mapped Modelled Outputs.

Refer to Table 2, below / overleaf.



Table 2: Figure 7 of TAN15 – Flood Hazard Matrix

Colour code	Hazard to people classification
Green	Very low hazard
Yellow	Danger for some – includes children, older people and people with disabilities
Orange	Danger for most – includes the general public
Red	Danger for all – includes the emergency services

There are no flow conveyance routes that presently could or would convey any pluvial flows toward the site. Any flows would be contained within the highway (Ena Avenue) kerbs and would flow south / southwest following the natural fall in topography. Ena Avenue and the wider residential neighbourhood are served by a formal and longstanding surface water network under the proprietorship of DCWW.

There will be no adverse effects or increased flood risk elsewhere implications as a result of the works (i.e. no loss of flood 'storage' / displacement of inundation waters). The risk will remain as per existing, and the proposals will have no bearing on this existing risk and will not exacerbate it (including consequences). Notwithstanding this and taking a precautionary and conservative approach to design and assessment of flood risk; certain mitigation measures should be adopted where necessary and appropriate.

Refer to Section 5 – Flood Risk Mitigation.

4.4 Groundwater Flooding

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.

TAN-15 does not specify any requirements for groundwater flood risk, other than the risk of groundwater flooding should be considered as part of an FCA. However, it would not be advisable to locate developments in areas where groundwater is less than 0.025m below the ground surface without further groundwater monitoring and detailed assessment being undertaken.

Given the extensive hardstanding nature of the existing site and wider surrounding area the emergence of groundwater at the surface is expected to be limited. Furthermore, the underlying geology as indicated by BGS online mapping tools indicate substrata characterised by impeded drainage which would further prevent the ingress of any groundwater to the surface.

The Southwest Wales SFCA by JBA states; *'The majority of the county has groundwater that is at least 5m below ground surface or lower'*. The 'Areas Susceptible to Ground Water Flooding' Map from the NPT County Borough Council PFRA indicates that the site is located in an area considered to be < 25% susceptibility to Groundwater Flooding. Therefore, it can be concluded that the site and proposals are at **Low Risk** from groundwater flooding.

Refer to Appendix D – Areas Susceptible to Groundwater Flooding.

4.5 Artificial Sources of Flooding

There are no canals or other artificial / man-made surface water bodies within the immediate vicinity of the site or surrounding area which could or would pose a flood risk to the site over the course of its lifetime expectancy.



The NRW 'Risk of Flooding from Reservoirs' map shows that the site is not at risk of flooding from reservoirs, even in the hypothetical event of critical infrastructure (Dams) failing. The risk of flooding from reservoirs is extremely unlikely to happen. For instance, all large reservoirs must be inspected and supervised by a reservoir panel engineer. As the enforcement agency; NRW ensure that reservoirs are inspected regularly, and essential safety / maintenance work is carried out.

Therefore, it can be concluded that the probability of flooding from artificial sources is **Low / Residual**.

4.6 Flooding from Sewers

There are no recorded or known incidents of flooding to the site from sewer flooding and / or existing drainage infrastructure failure. There are no recorded reports or incidents of the DCWW and / or Private drainage network serving the site and surrounding area failing (surcharging). In the highly unlikely event of the system being surcharged (exceeds its capacity); then discharged effluents would be contained within the main highways (via kerbs) and conveyed away (south) from the site following the natural fall in topography.

5 FLOOD MITIGATION

5.1 Flood Risk Mitigation

The risk of flooding to the proposed development from all identified sources is assessed to be **Low**, with the exception of flooding from Fluvial sources (Rivers); namely, and exclusively; the **Gnoll Brook** which represents a **Medium-High** Flood Risk to The Site.

There is no hydraulic modelled data available for the **Gnoll Brook** at this moment in time. The works entailed within this planning application (change of use, limited to internal and refurbishment / reconfiguration) does not warrant the undertaking of hydraulic modelling which would be superfluous to the scale and nature of the proposals. The proposals are typical of many residential applications in the local vicinity.

The FMfP has been used as the best possible and most up-to-date source of information. Should modelling outputs for the Gnoll Brook become available in the future, then this report should be updated, and in particular to further inform mitigation measures and evacuation procedures.

It is advised that a Flood Warning and Evacuation Plan (FWEP) be developed in consultation with the NPT County Borough Council Emergency Planning Team.

The Site is served by **Flood Alerts** but not **Flood Warnings**. It is unusual for places that are at **High Risk** of flooding from Fluvial Sources (Rivers) to not come under the coverage and provision of NRW's Flood Warning Service. Site owners and residents should register to receive **Flood Alerts**. Should **Flood Warnings** become available in the future; site owners and residents should all register to receive the service. **Refer to Figure 5.**



Figure 5: NRW Flood Alert and Flood Warning Coverage

Generic flood risk mitigation measures that should be applied (if appropriate and necessary) as far as is possible are outlined below.

External alterations such as commercial flood guards (barriers) are available and could be fitted to doorways. They can be applied and removed as and when by site users / residents and can provide a protection and freeboard to inundation waters of up to 0.6m and will prevent the ingress of waters to properties thus minimising and avoiding internal damage. Other products which would protect the dwellings from inundation and which should be considered; include flood fences, flood doors and air bricks.

Additional *internal* alterations that should be introduced where possible to the building aspect of the proposed development in line with CIRIA Guidance include:

- Raised electronic control units and sockets;
- Install smart air bricks or air brick covers;
- Provide low level flood guards on all access points;
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives;
- Use solid flooring (tiled, resin, concrete) at ground level, where possible;
- Ensure that with the time afforded by advance warning, evacuation of property via safe egress and removal of valuables from the building can be implemented;
- Clearance of the existing surface water drainage system to improve drainage of the site and follow necessary maintenance procedures (to new and existing surface water drainage) to ensure that the system functions to optimum capacity;
- The predicted depths, rise, speed of inundation and velocities are likely to satisfy the TAN 15 suggested tolerable conditions for more extreme events.

5.2 Access and Egress

Safe access / egress is provided by Ena Avenue. Access / egress is usually good and unrestricted.

5.3 Safe Refuge and Flood Procedure

In the highly unlikely event of the site and / or wider area flooding before a Flood Alert is issued site occupants should seek safe refuge upon the upper floors which will be at levels well above any potential DFLs over the course of the development lifetime expectancy, including the potential impacts of climate change.

If safe to evacuate, then residents should head south along Ena Avenue, left (east) along Greenway Road (B4287), and then right (south) toward Brynhyfryd Bowls Club via Westernmoor Road to an area outside of the extreme flood extents (from all sources) and **away** from the potential source (s) of flooding. The Bowls club provides a potential area of safe refuge for local residents until emergency services arrive. **Refer to Figure 6.**



Figure 6: *Proposed Flood Evacuation Route Plan*

5.4 Flood Risk Elsewhere

There will be no external works proposed as part of this redevelopment with the building remaining the same footprint. All works are internal and have no bearing on flood risk to third party land / infrastructure. There will be no adverse effects or increased flood risk elsewhere implications as a result of the works (i.e. no loss of flood 'storage' / displacement of inundation waters). The situation will be no worse than that of the existing.



5.5 Finished Floor Levels (FFLs)

Existing FFLs to be retained. Although raising them could alleviate flood risk, it is not seen as practically possible and could cause / lead to an increase in flood risk elsewhere (i.e. displacement of potential inundation waters / loss of 'storage'). An existing and assumed (although informed) FFL of **14.35 m AOD** has been used for the purposes of this study and which are to be retained under the proposals. All habitable spaces to be situated at a level of at least **16.7m AOD**. For these to be effected by inundation waters; internal flood depths of >2m would need to occur.

5.6 Flood Alleviation

The site is enclosed by brick walls approximately 0.5 meters high, providing a barrier to prevent floodwaters from entering the area.

In 2022, the Brynau and Preswylfa Natural Flood Management (NFM) Scheme was completed within the upper reaches of the Gnoll Brook Catchment, located on Woodland Trust land at Brynau, Cimla, Neath. This initiative aims to reduce flood risks in the Gnoll Brook and Gnoll Park Brook catchment areas. The scheme integrates natural flood management features within newly planted woodlands at Brynau, revitalizing an ancient woodland site at Gnoll Country Park and safeguarding over 200 nearby properties. Key measures include uncovering a stone-lined underground drain to bring water to the surface and installing "leaky barriers" across the drain's channel to slow water flow. Additionally, two ponds may be constructed to temporarily store water during heavy rainfall, further enhancing flood mitigation.

On July 9, 2025, Neath Port Talbot Council approved its Local Flood Risk Management Strategy and Plan (LFRMSP) following extensive consultation with stakeholders and residents. Mandated by the Flood and Water Management Act 2010, this strategy outlines the council's approach to managing flood risks from surface water, ordinary watercourses, and groundwater over the next six to seven years. As the Lead Local Flood Authority, the council is responsible for developing, maintaining, applying, and monitoring this strategy. The LFRMSP clarifies roles, prioritizes actions, details flood mitigation efforts, and supports residents and businesses in reducing flood risks. Councillor Scott Jones, Cabinet Member for Streetscene, which includes flood defence oversight, emphasized, "Flooding poses a significant threat to communities across Wales and the UK. Through careful planning, we aim to minimize risks to Neath Port Talbot's communities."

The council has improved its flood response by adopting advanced technology, investing in personnel, and streamlining processes to manage risks effectively. The LFRMSP builds on these successes, outlining flood management strategies for the next six to seven years to ensure Neath Port Talbot remains a safe and appealing place to live, work, and visit. Climate change has intensified flooding, with 300 properties in the county borough experiencing internal flooding since 2020, compared to 130 between 2013 and 2020. Increasingly unpredictable, intense, and frequent rainfall continues to disrupt local communities.

Councillor Jones noted, "While preventing all flooding is impossible, proactive risk management can significantly reduce its likelihood and impact."

Neath Town Centre faces significant flood risk due to the Gnoll Brook; a fast-responding ('flashy') watercourse fed by tributaries and drains from the Cimla residential area. The brook carries substantial debris, often causing flooding, particularly along Gnoll Drive, where it overflows before entering culverts beneath the town centre and discharging into the River Neath at Parr Avenue. Since 2021, the Lead Local Flood Authority has implemented NFM projects to reduce debris flow and peak water levels during rainfall. Three additional projects, approved for 2024 and 2025, will further mitigate flood risks. However, a feasibility study is needed to assess the effectiveness of these NFM measures and determine additional actions required to protect residential and commercial properties from a 1-in-100-year flood event. Any further measures will undergo the planning process, incorporating environmental considerations to inform design.



6 CONCLUSIONS

Vale Consultancy has been instructed by *DP Architecture Ltd (On Behalf of the Client)* to prepare a Flood Consequences Assessment (FCA) report to accompany a planning application for the proposed development at 27 Ena Avenue, Neath; ("The Site").

The assessment has been undertaken in accordance with the requirements of Technical Advice Note 15 (TAN 15) dated March 2025 and the Local Development Plan (LDP).

The Flood Map for Planning - Rivers and Sea indicates that the site is located in **Flood Zone 1** (Rivers), **Flood Zone 2** (Rivers), **Flood Zone 3** (Rivers).

Therefore, it can be concluded that the site and proposed development is at **Medium - High Risk** of flooding from Fluvial (Rivers) sources.

However, the potential associated consequences of flooding are deemed to be acceptable and manageable over the next 100-years, and the developers wholly accept the risk and potential consequences. Mitigation measures outlined in Section 5 should be rigorously adopted.

The site falls in Flood Zone 1 (Sea) and is not deemed to be at risk of flooding from Tidal sources over the course of its lifetime expectancy (100-years), including the potential impacts of climate change.

The site falls marginally within Flood Zone's 2 and 3 from Surface Water and Small Watercourses; albeit the large majority of the site is located within Flood Zone 1.

The site is deemed to be at **Low – Medium** Risk of flooding from Pluvial sources; however, and again, the potential inherent associated consequences are deemed to be acceptable and manageable over the next 100-years, including the potential impacts of climate change.

Although the site does not technically comply with TAN15, it is an existing residential property in a well-established residential and urban area. The proposals are for **Redevelopment** of the site and are in alignment with the aims, objectives, and policies of the LDP. For instance; it will assist in meeting affordable housing targets within NPT County Borough Council, and which is also in alignment with current UK political legislation surrounding increasing and development of affordable housing.

The works are limited to internal refurbishment and reconfiguration and there will be no increase in vulnerability classification. The design proposals have considered flood risk and have been catered to minimise the perceived risk and potential inherent associated consequences. The developer wholly accepts the risks and consequences as outlined in this report.

The Fluvial flood risk from the Gnoll Brook cannot be quantified at this stage due to the lack of a hydraulic model. This planning application does not warrant the undertaking of such an exercise which would be economically unviable and superfluous to the scale and nature of the development proposals.

This FCA is proportionate in its depth and detail to that of the scope of works entailed within the proposals.

This FCA has been undertaken by suitably qualified personnel.

The proposals are in alignment with the aims and objectives of the LDP and TAN15.



APPENDIX A:
Existing Site Plans & DCWW Asset Plans



LEGEND

Clean Water

-  Sluice Val
-  Air Val, SINGLE
-  Tap
-  Pressure Reducing Valve
-  Meter
-  BULK Meter
-  FH
-  Cap
-  Existing Main
-  NON COMPANY

Sewerage External

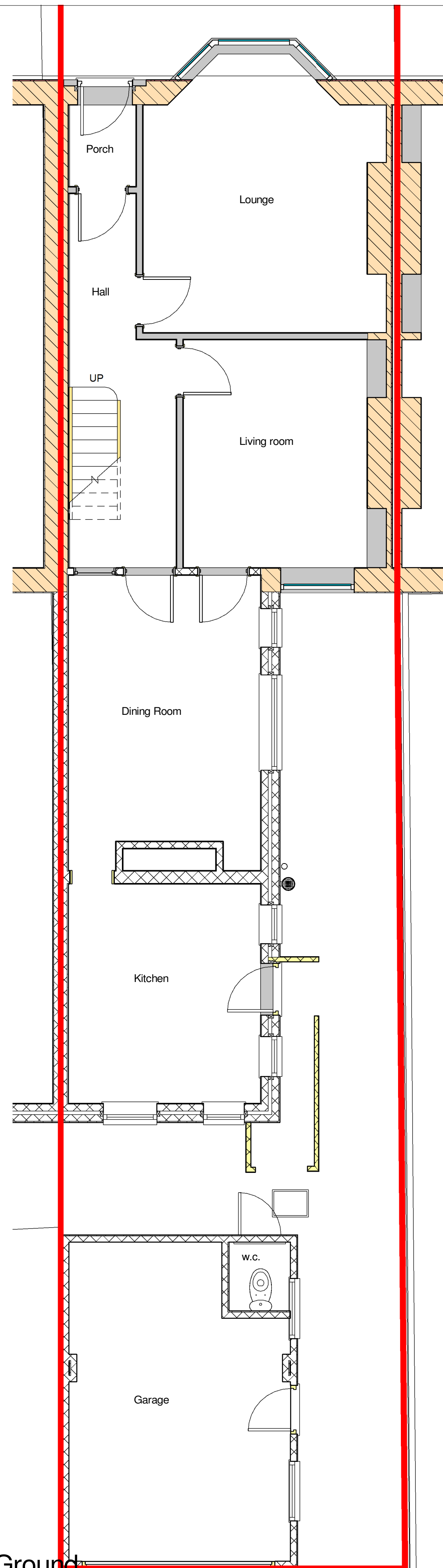
-  Foul
-  Surface Water
-  Combined
-  Rising Main
-  Private
-  Treatment Works
-  Pumping Station
-  Special Purpose
-  Unknown End
-  Change, Combined Overflow
-  Outfall, FOUL
-  Lamp Hole, Foul
-  Private Sewer Transfer
-  Lateral Drain
-  Inspection Chamber

Dwr 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 and any onus of locating the apparatus before carrying out any excavations rests entirely on you. The information which is supplied hereby by the company, is done so in accordance with statutory requirements of sections 198 and 199 of the water industry Act 1991 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 drain sewer or disposal main 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.

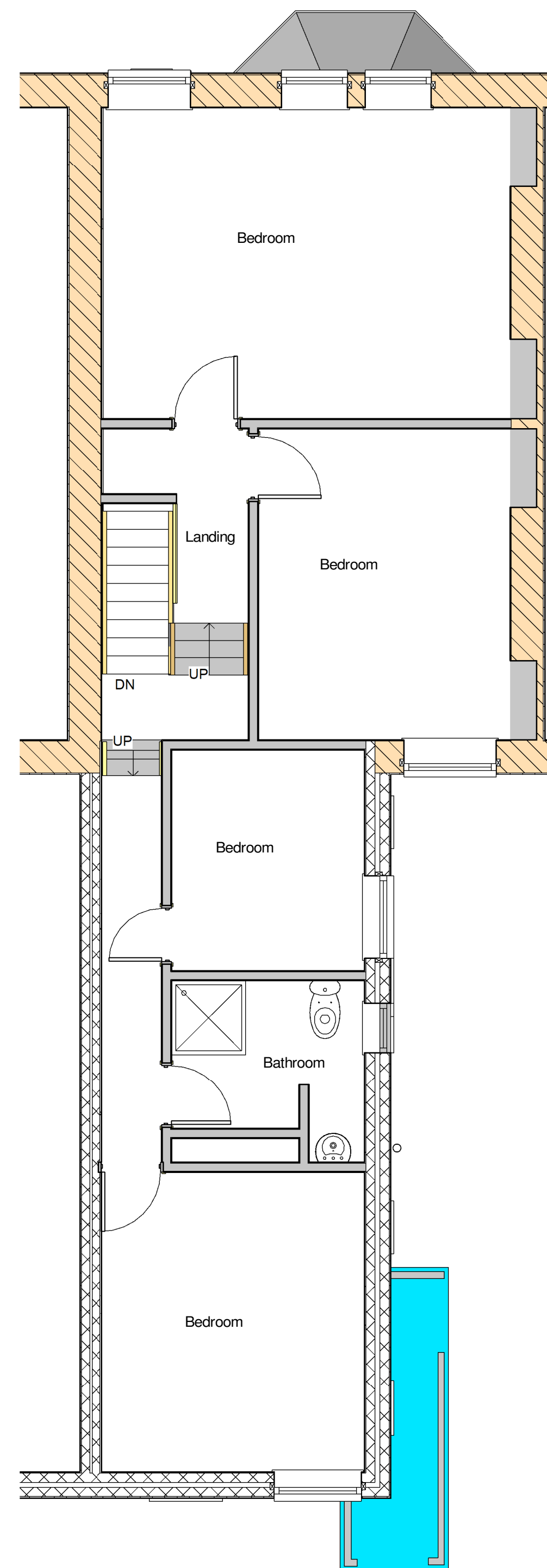
EXACT LOCATION OF ALL APPARATUS TO BE DETERMINED ON SITE

Reproduced from the Ordnance Survey's maps with the permission of the Controller of Her Majesty's Stationary Office. Crown Copyright. Licence No: WU298565.

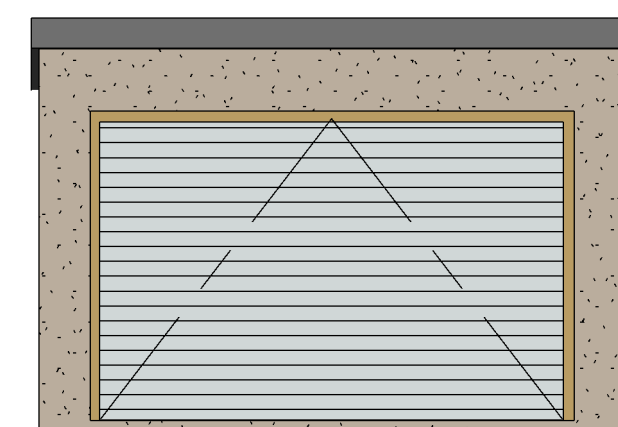
Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be Asbestos Cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible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



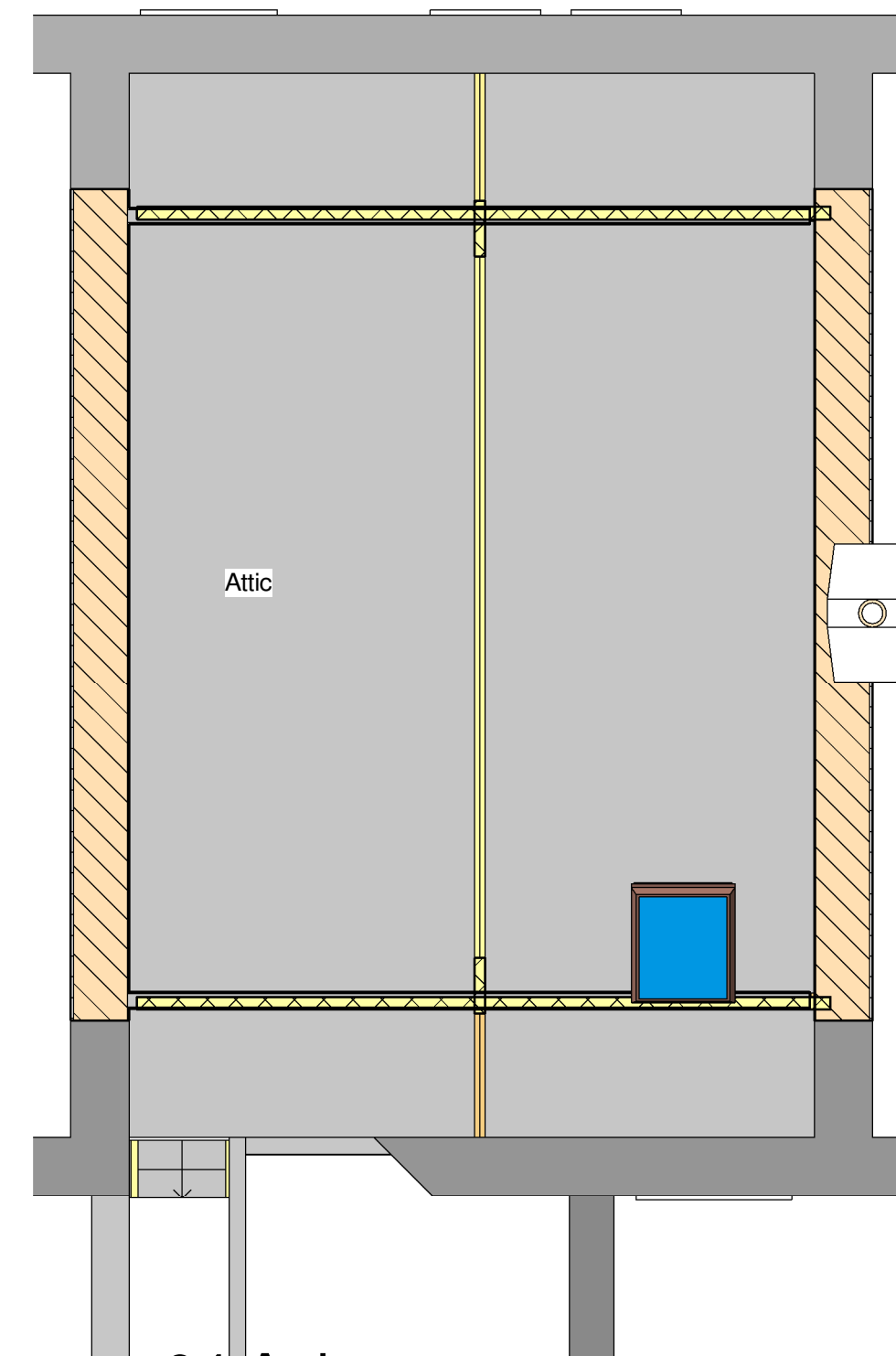
1 02 Ground Floor
1 : 50



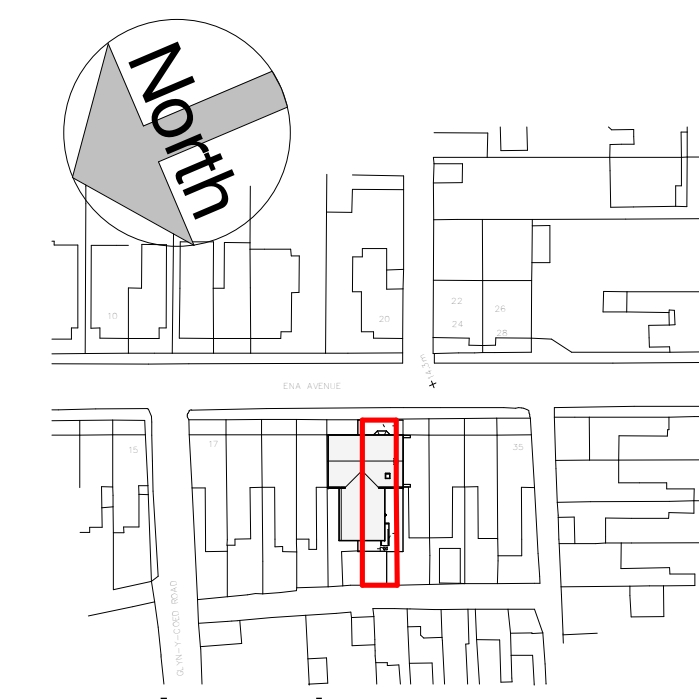
2 03 First Floor
1 : 50



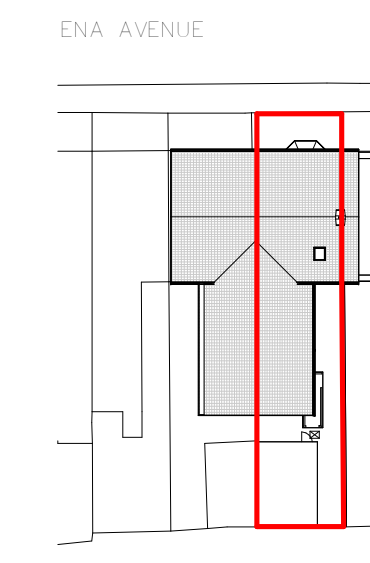
10 04 Garage Lane Elevation



3 04 Attic Plan
1 : 50



4 Location
1 : 1250



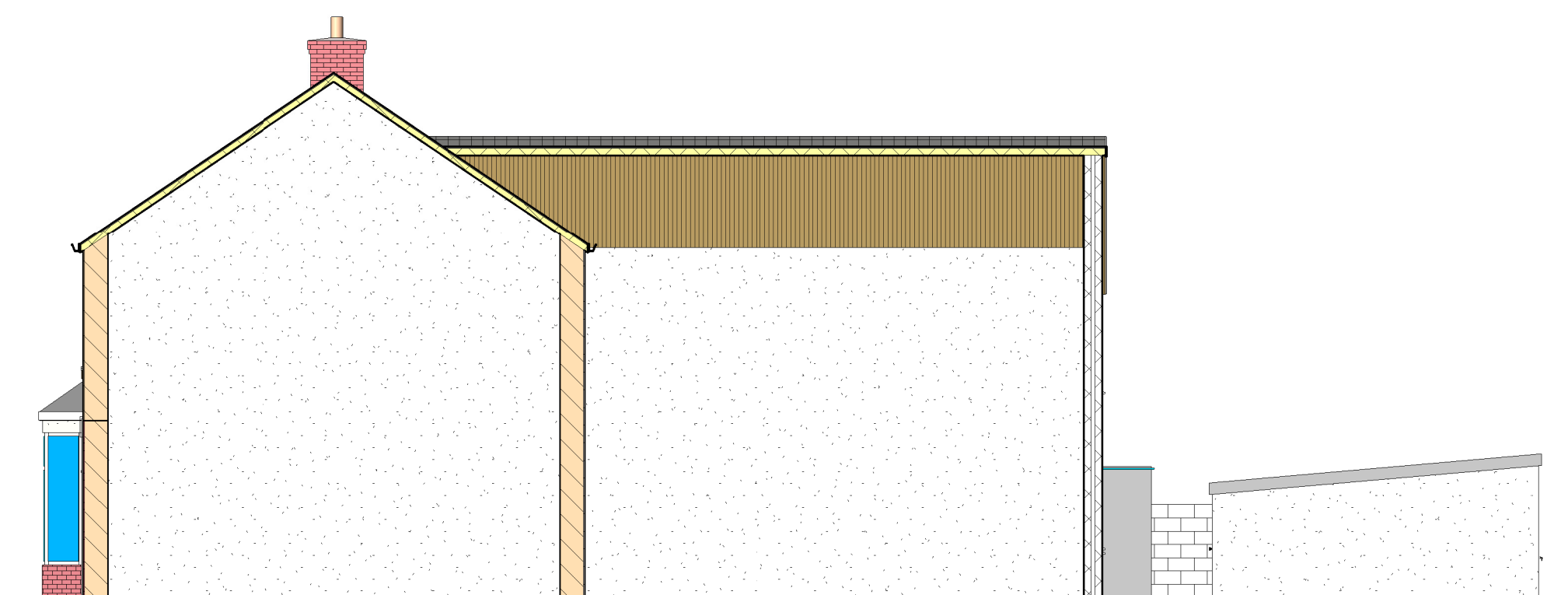
5 Site
1 : 500



6 Front
1 : 50



8 Path Side
1 : 100



9 Boundary Side / Section



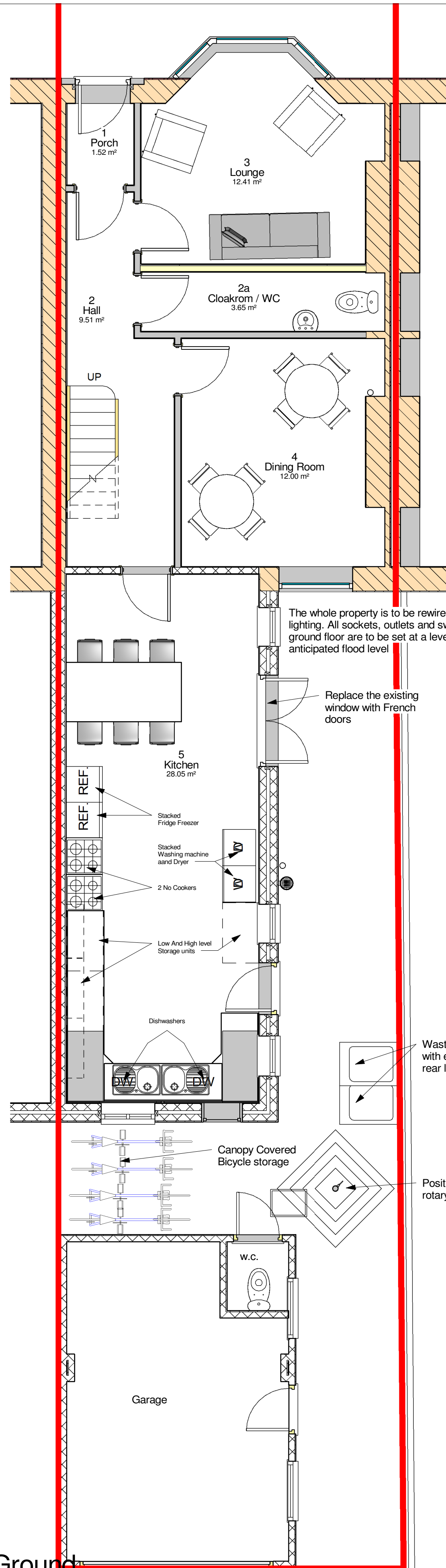
7 Rear
1 : 50

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56 Walter Road Swansea SA1 5PY
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e-mail david@dparchitecture.co.uk

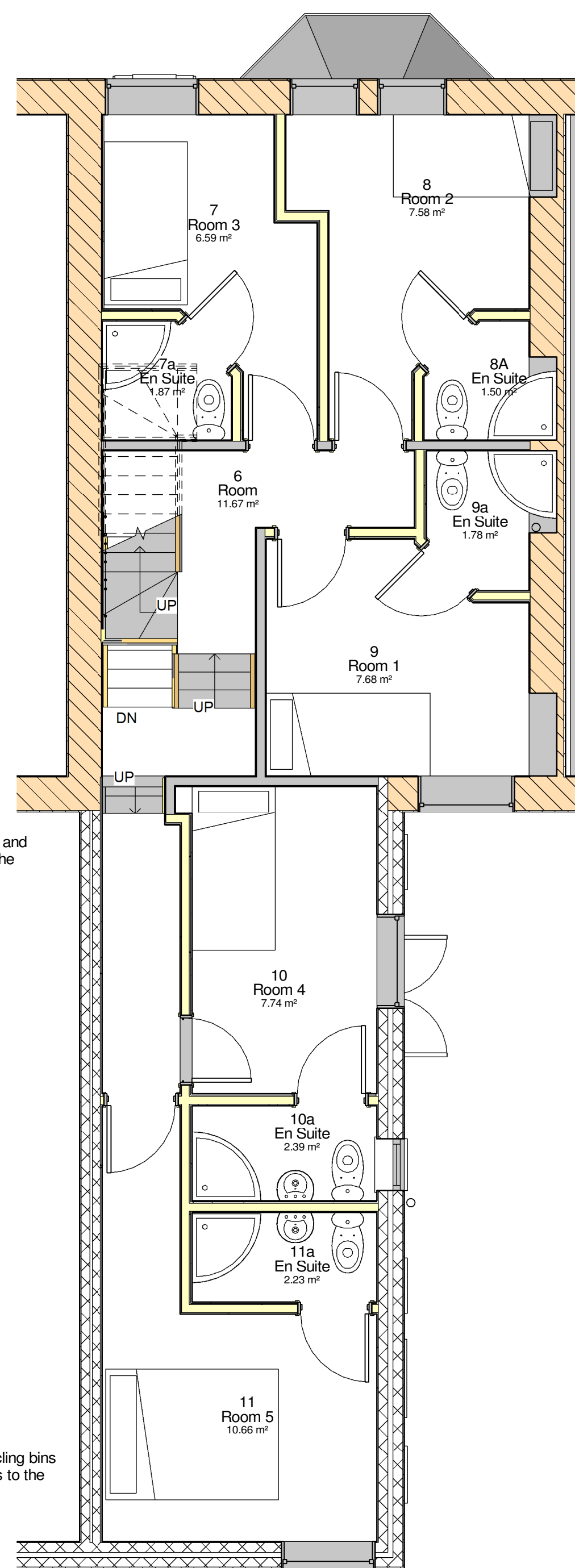
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27 Ena Avenue Neath			Existing Plans and Elevations	
Scale	As Shown	Approved	Figured dimensions must be taken, not dimensions. All discrepancies in title must be reported immediately to Contractor. Contractor must check all dimensions on site.	
Date	May 25	Job No.		
Drawn By	dp	Dwg. No.		
			25 - 07	25 - 07/01



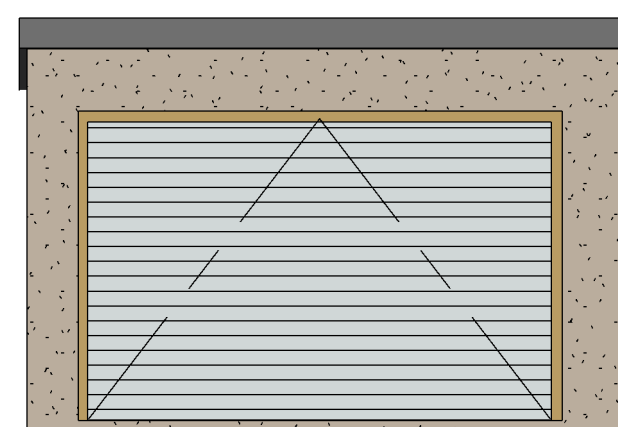
APPENDIX B:
Proposed Site Plans



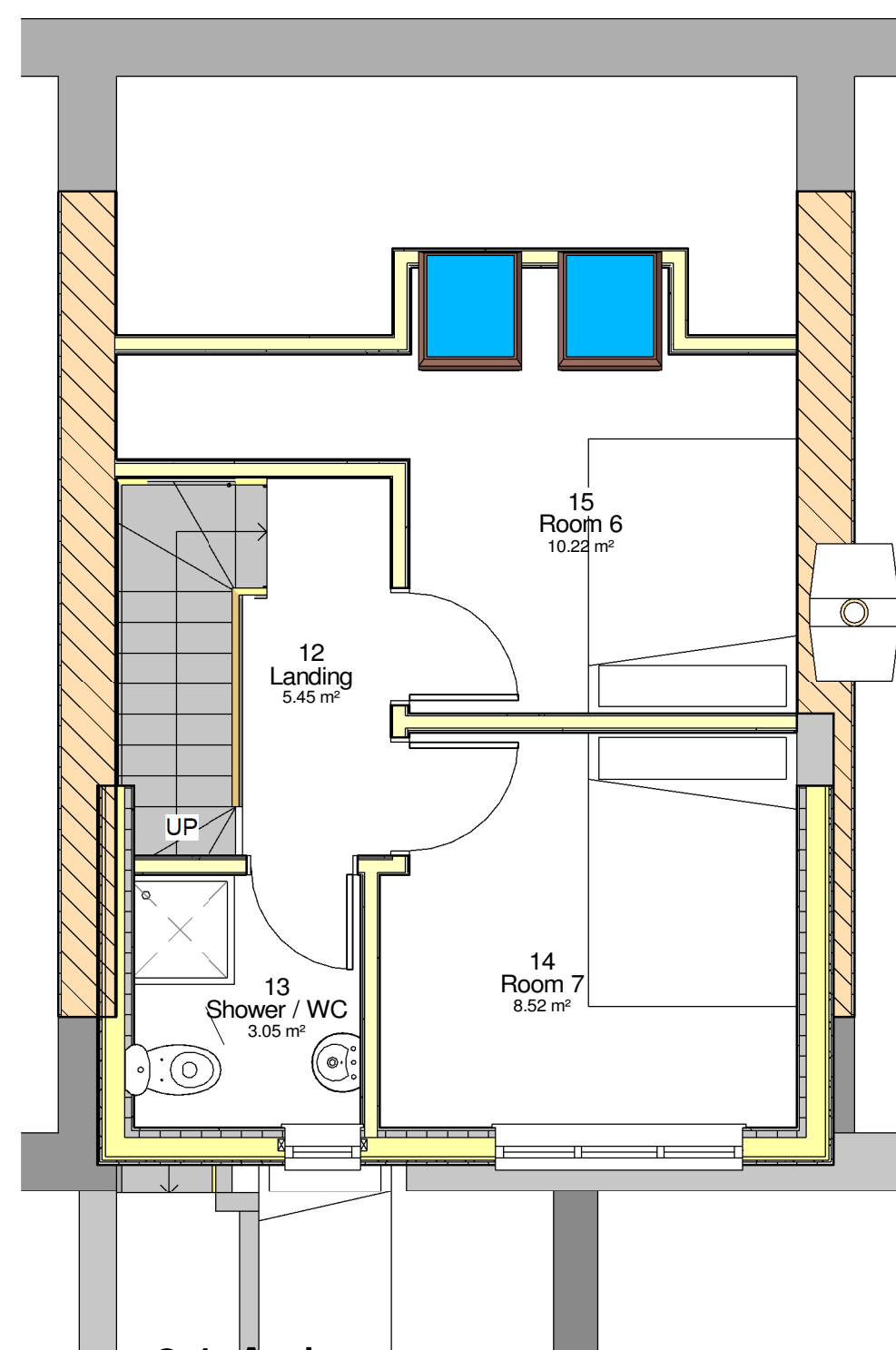
1 02 Ground Floor
1 : 50



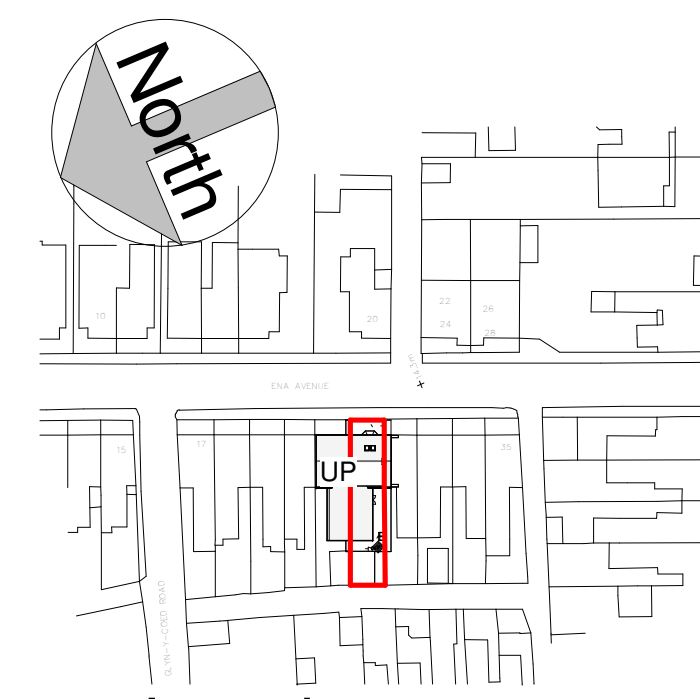
2 03 First Floor
1 : 50



10 Garage Lane Elevation

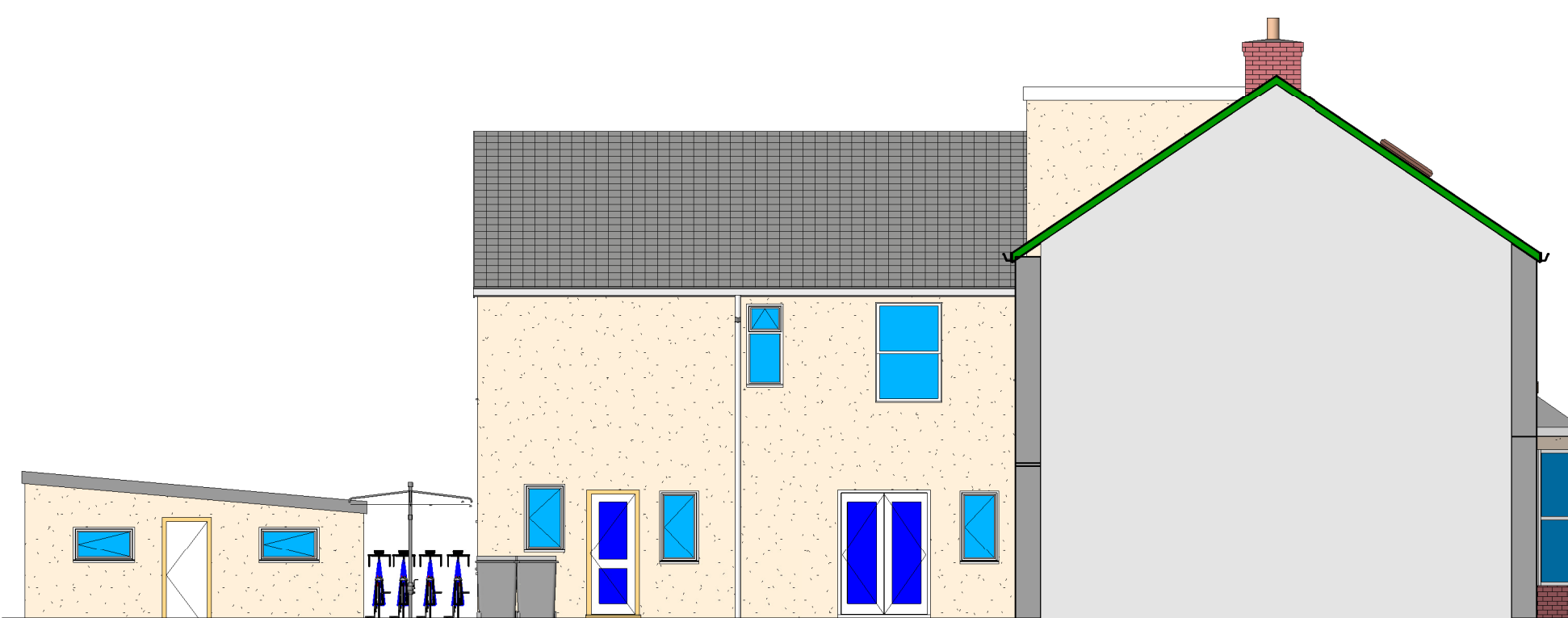


3 04 Attic Plan
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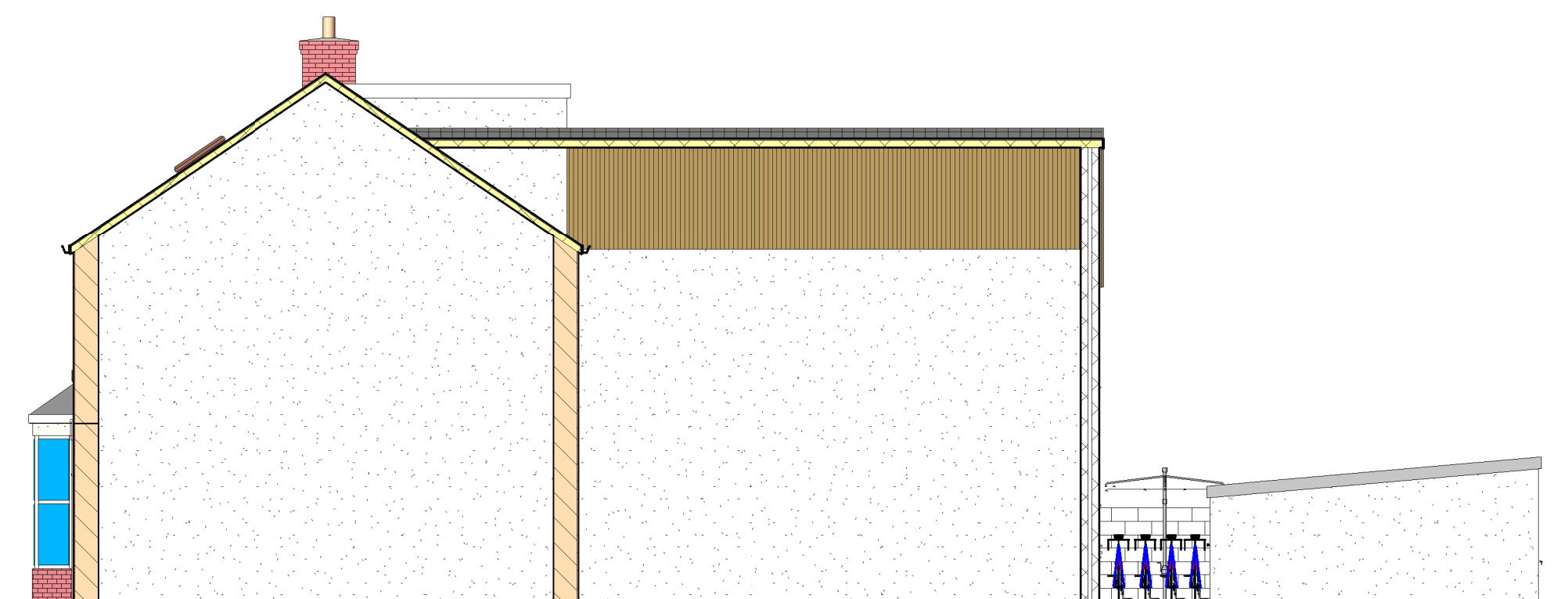


4 Location
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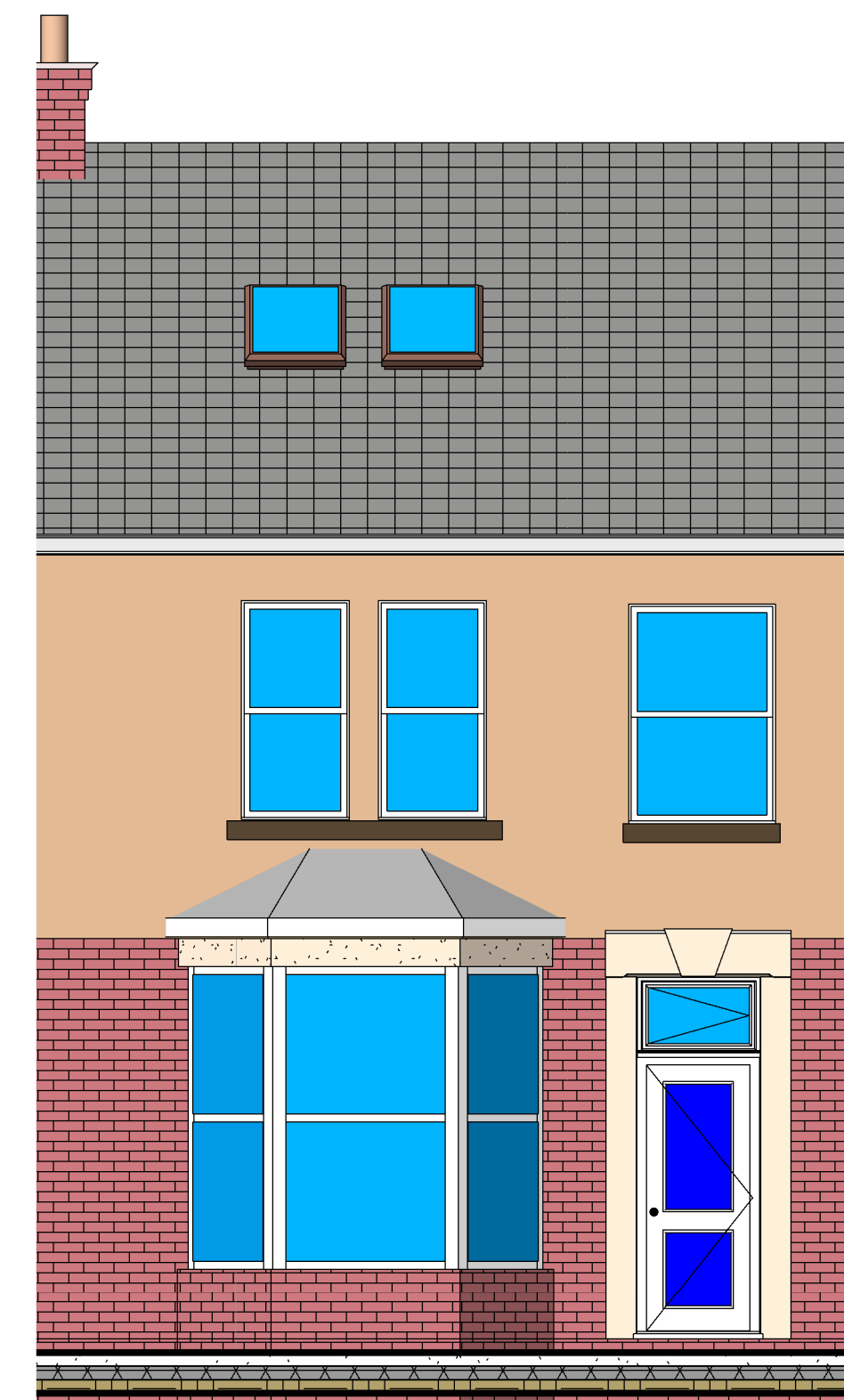
5 Site
1 : 10



8 Path Side
1 : 100



9 Boundary Side / Section



6 Front
1 : 50



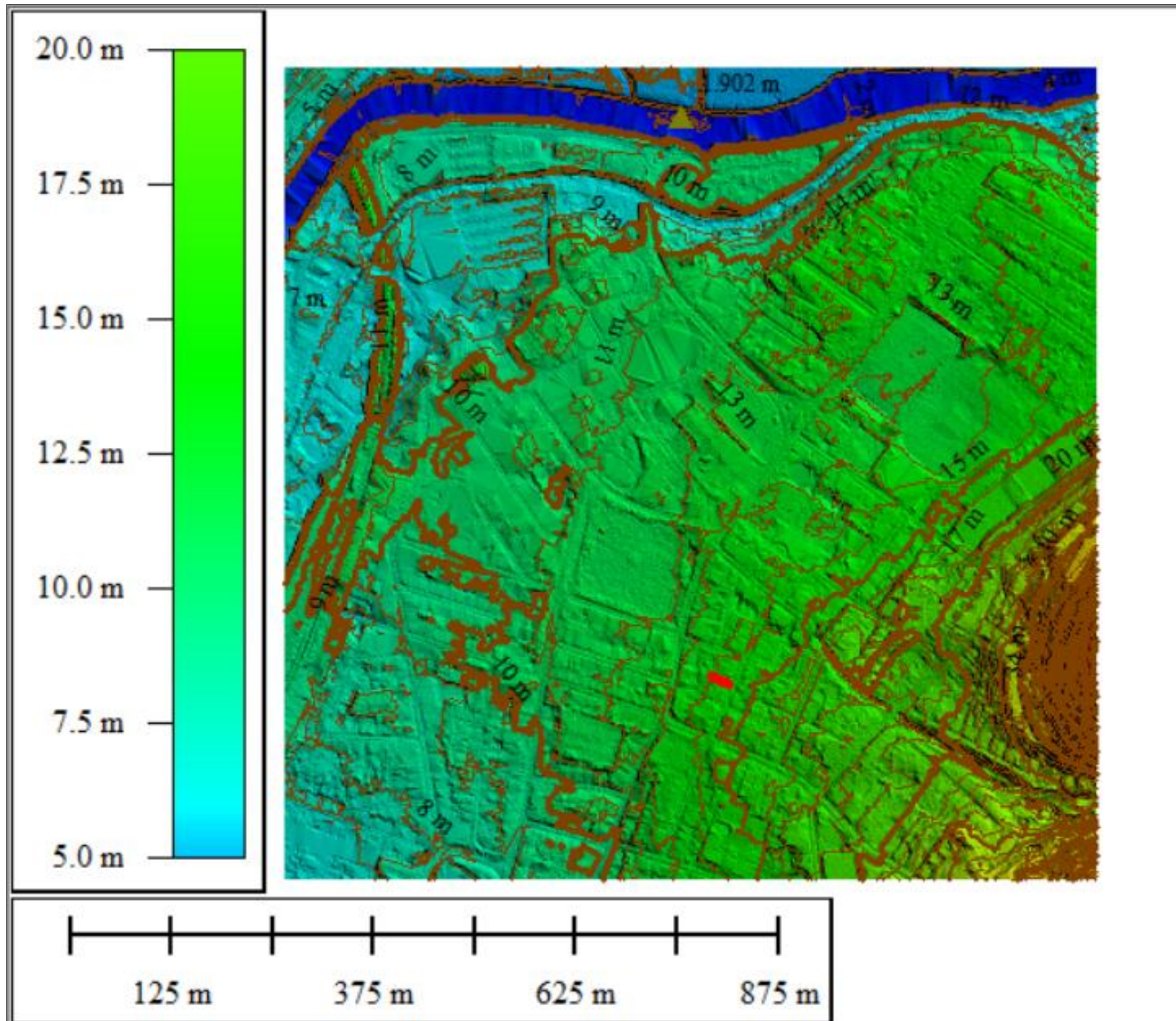
7 Rear
1 : 50

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Job			Description	
27 Ena Avenue Neath			Proposed Plans and Elevations	
Scale	As Shown	Approved	Figural dimensions must be taken, not dimensions. All discrepancies in title must be reported immediately to Contractor. Contractor must check all dimensions on site.	
Date	May 25	Job No.		
Drawn By	dp	Dwg. No.		
			25 - 07	25 - 07/02a



APPENDIX C: LiDAR Extract



1m Resolution LiDAR Extract Digital Terrain Model (DTM) with contours at spot heights

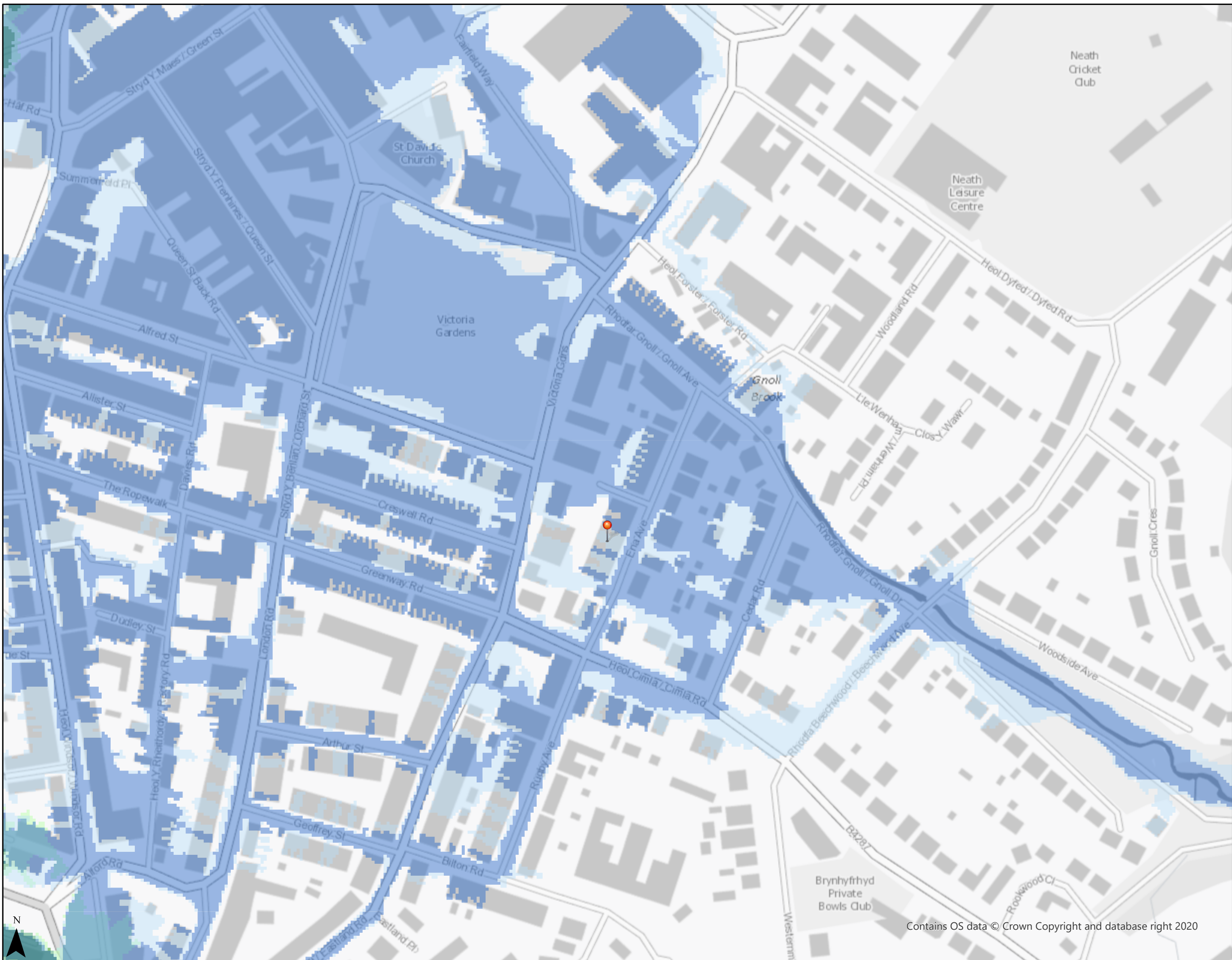


APPENDIX D:
NRW Flood Maps and Relevant Consultee Correspondence

Flood Map for Planning - Detail
22186 - 27 Ena Avenue, Neath

Legend

- Flood Defence Locations
- TAN15 Defended Zones
- Rivers
 - Sea
 - Rivers and Sea
- Rivers
- Flood Zone 3
 - Flood Zone 2
- Sea
- Flood Zone 3
 - Flood Zone 2
 - Recorded Flood Extents
 - Main Rivers



Contains OS data © Crown Copyright and database right 2020

Scale at A3: 1:2,500

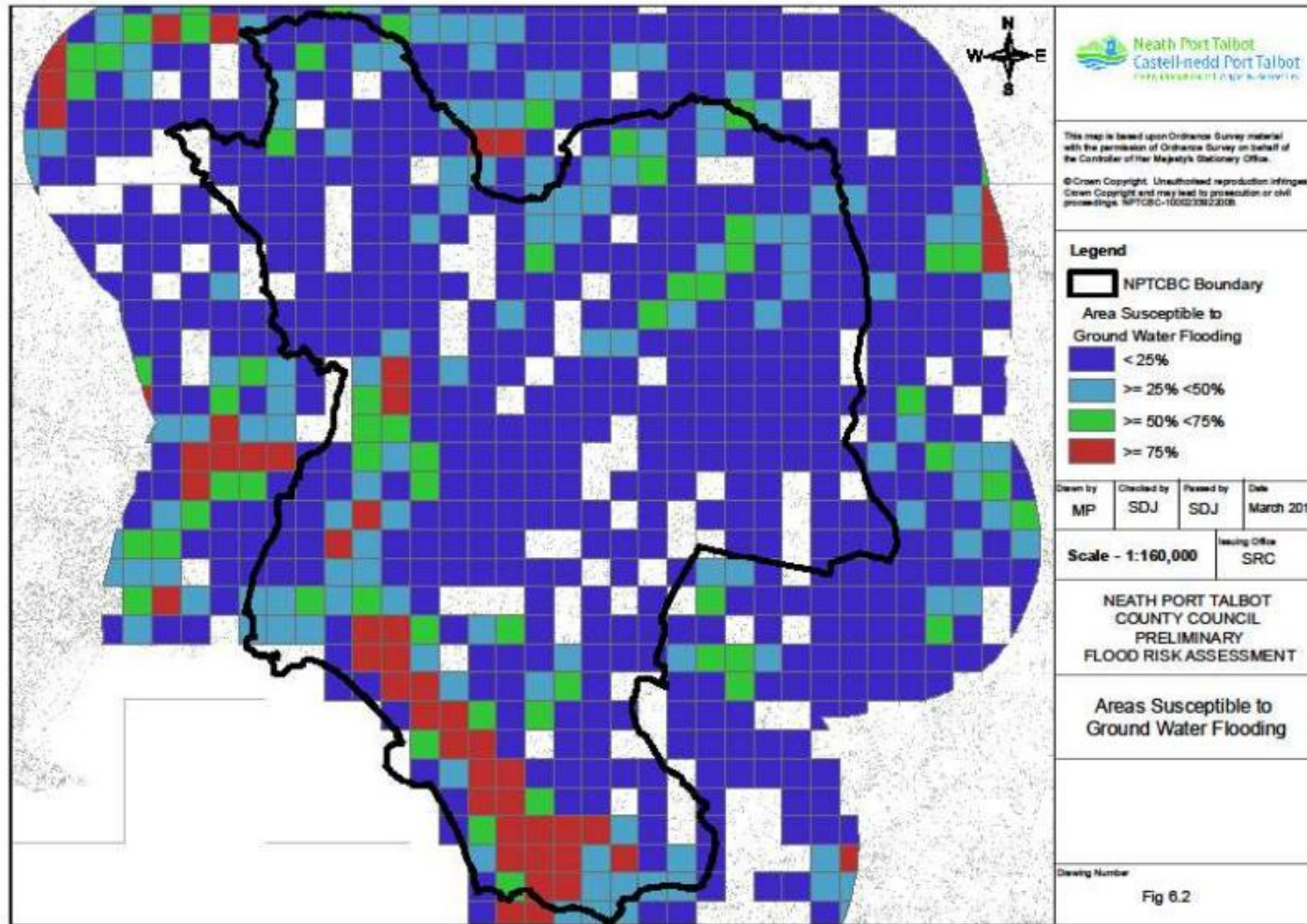
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Disclaimer

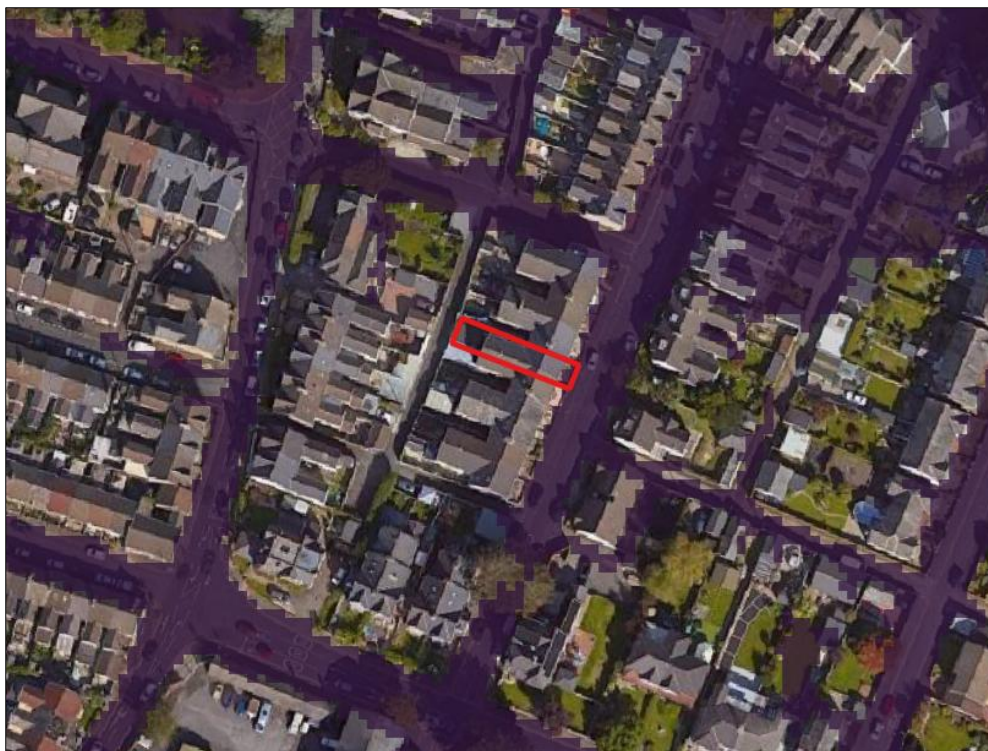
<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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Figure 6.2



Areas Susceptible to Groundwater Flooding



Depths

_mean	_median	_stdev	_min	_max	_range
0.15513658523...	0.13604402542...	0.04433491391...	0.11947154998...	0.22898674011...	0.10951519012...

Velocities

_mean	_median	_stdev	_min	_max	_range
0.20571178570...	0.21170383691...	0.03507322771...	0.15466572344...	0.24477374553...	0.09010802209...



NRW Flood Risk Maps for Surface Water and Small Watercourses (National scale modelling) – Maximum Estimated Flood Extent, Depths (m), Velocities (m/s) and Hazard Ratings During a '**Low Risk**' Event

22186 – 27 Ena Avenue, Neath



NRW Flood Risk Maps for Surface Water and Small Watercourses (National scale modelling) – Maximum Estimated Flood Extent, Depths (m), Velocities (m/s) and Hazard Ratings During a '**Medium Risk**' Event

22186 – 27 Ena Avenue, Neath



NRW Flood Risk Maps for Surface Water and Small Watercourses (National scale modelling) – Maximum Estimated Flood Extent, Depths (m), Velocities (m/s) and Hazard Ratings During a '**High Risk**' Event