



Flood Consequence Assessment for Planning

Prepared for:
Shilat Limited

August 2023

Our reference:
93284-Sami-VictoriaRd

Location:
Ginos
2A Victoria Road
Port Talbot
SA12 6AB



Document Issue Record

Project: Flood Consequence Assessment for Planning

Client: Shilat Limited

Location: Ginos, 2A Victoria Road, Port Talbot, SA12 6AB

Application: Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above

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Key Facts

Flood Risk Posed:

- Partially Flood Zone C1 as defined by Natural Resource Wales (NRW).
- The site is shown to be within fluvial Flood Zone 2, but entirely outside of fluvial Flood Zone 3 on the Flood Map for Planning.
- The site is also shown to be within a TAN15 Defended Zone – Rivers.
- The site is also shown to be partially within tidal Flood Zone 3 and entirely within tidal Flood Zone 2.
- The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.
- Existing building and roads surrounding the site lie outside of areas of High, Medium and Low risk of flooding from surface water. The very rear (south east) of the site is shown to be within an area with a “Low” risk of flooding from surface water and small watercourses.
- Risk of reservoir, groundwater and sewer surcharge flooding would appear to be low.
- The site is shown to be partially within the modelled 1:200 year and entirely within the 1:1000 year tidal flood extents provided for 2116.
- The site is shown to be entirely outside of the present day 1:100 year extent, 1:100 year plus climate change and 1:1000 year fluvial extents.

Flood Risk Management:

- Comparison of approximate finished floor levels with modelled flood levels shows the entire building is above the 1:200 year plus climate change tidal flood level, and all residential uses are therefore flood free.
- Safe escape as per TAN15 can be provided.
- Flood proofing of the building will be incorporated as appropriate.
- A flood warning and evacuation plan will be implemented post development.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Introduction

Unda Consulting Limited have been appointed Shilat Limited (hereinafter referred to as “the applicant”) to undertake a Site Specific Flood Consequence Assessment (FCA) for Planning at Ginos, 2A Victoria Road, Port Talbot, SA12 6AB. (hereinafter referred to as “the site”). The FCA has been undertaken in accordance with Technical Advice Note 15 (TAN 15) and the associated technical guidance.

The site appears to be located partially within Flood Zone C1 as defined by Natural Resource Wales (NRW) on their Development Advice Map. Under Technical Advice Note 15 (TAN 15), a FCA is required if a proposed development:

- includes building or engineering works in Flood Zone C1 or C2;
- includes building or engineering works on land classified as having critical drainage problem;
- changes the use of land or buildings in a location at risk of flooding from rivers or the sea, or with critical drainage problems;
- changes the use of land or buildings in a way that increases the flood vulnerability of the development where it may be subject to other sources of flooding;
- is in Flood Zone B, but larger than 1 hectare.

Given that the proposed application site is located partially within Flood Zone C1 (Risk of flooding from rivers or the sea, served by significant flood defence infrastructure, including flood defences), and includes building works, the applicant is required to submit a FCA under TAN 15. The assessment should demonstrate to the Local Planning Authority (LPA) and NRW how flood risk will be managed now and over the development’s lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.

The objectives of a FCA to support a planning application are to establish:

- whether the proposed development is likely to be affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate.

Existing Situation

Site Usage:

The site comprises of an existing building, which is used for commercial uses with a hairdressers on the ground floor.



Figure 1: Aerial view of the site and immediate surrounding area (Source: Google Earth)

Topography:

Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LIDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +0.3m every 2m. This dataset is derived from a combination of the full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital Surface Model (DSM) produced from the signal returned to the LIDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model. 1.0m horizontal resolution DTM LiDAR data has been used for the purposes of this study.

1m horizontal resolution LiDAR topographic data shows topographic levels on site to range between approximately 6.65mAOD and 7.58mAOD. The site slopes generally down from northwest to southeast. Topographic levels in the area of the existing building range between 7.22mAOD to 7.58mAOD.

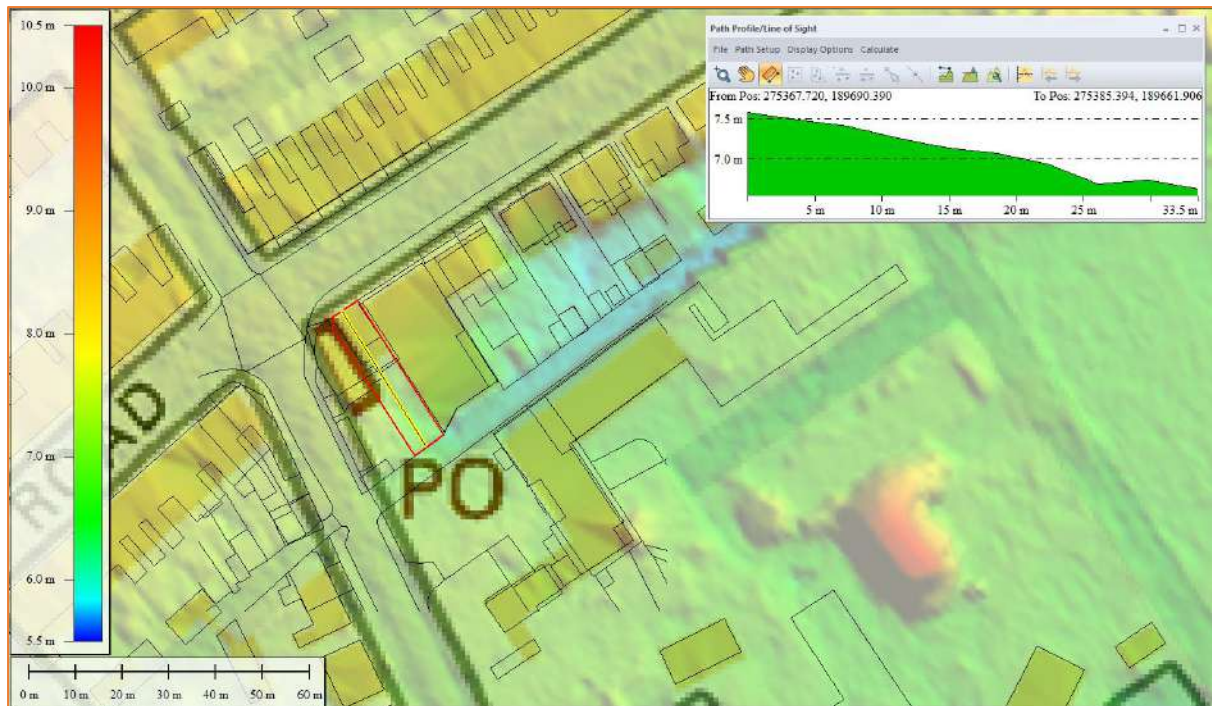


Figure 2: EA 1m LiDAR DTM showing topographic levels across the site. Transect (inset) runs from northwest to southeast
(Source: EA LiDAR, OS Mapping)

Proposed Development

The proposed planning application is for the Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above.

Existing and proposed site plans can be found in the report Appendix.

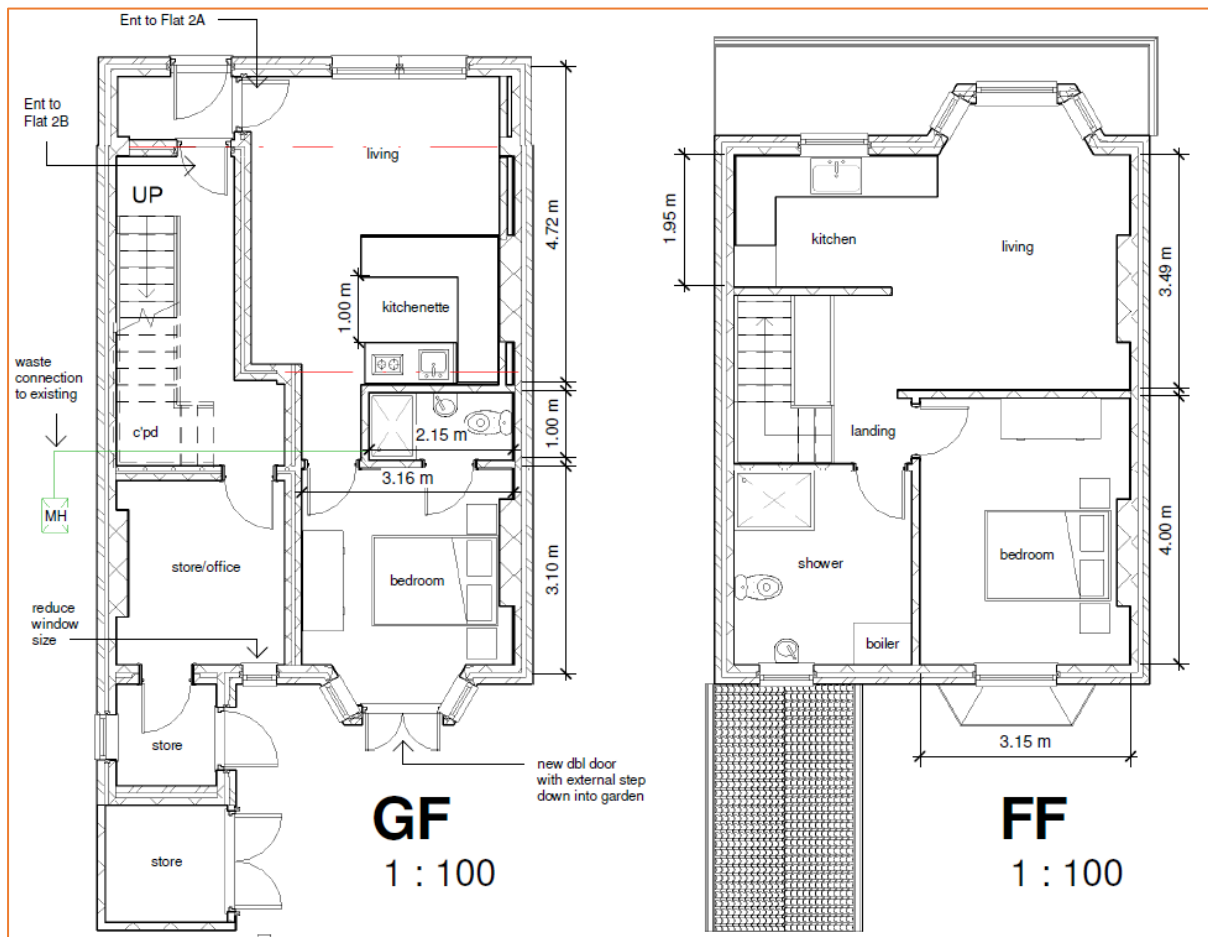


Figure 3: Proposed Floor Plans (Source: CCS Solutions)

Assessment of Flood Risk

Flood Zones:

Within planning, Flood Zones refer to the probability of river and sea flooding. They are shown on the Natural Resource Wales Development Advice Map, available on Natural Resource Wales' web site.

Description of Zone	Zone Name	Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/coastal flooding.	A	Used to indicate that justification test is not applicable and no need to consider flood risk further.
Areas known to have been flooded in the past evidenced by sedimentary deposits.	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.
Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.	C1	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences
Areas of the floodplain without significant flood defence infrastructure.	C2	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

Table 1: Flood Zones

The Flood Zones shown on the Natural Resource Wales Development Advice Map do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.



Figure 4: Natural Resource Wales Development Advice Map (Source: NRW)

The site is located partially within Flood Zone C1 (Risk of flooding from rivers or the sea, served by significant flood defence infrastructure, including flood defences), which means it is defined as land having a 1 in 1000 annual probability of tidal flooding.

The risk would appear to be fluvial and tidal and originate from the River Afan (which is tidally influenced), approximately 235m to the south east of the site at its closest proximity.

The Flood Map for Planning has no official status until it is formally implemented through planning policy, however, it represents the best available information the Welsh Government have on flood risk and Natural Resources Wales will continue to use this to inform their planning advice.

Local Planning Authorities are also expected to use the Flood Map for Planning alongside the draft TAN15 to support Local Development Plan work and in Strategic Flood Consequences Assessments.

The DAM is considered out of date by NRW, and no updates have been made for over 2 years, and no future updates are expected. The new Flood Map for Planning (FMfP) is therefore considered by NRW to be the best available spatial information held on flood risk and is being updated every 6 months.

NRW will consider both the DAM and the FMfP as part of the consultation process.

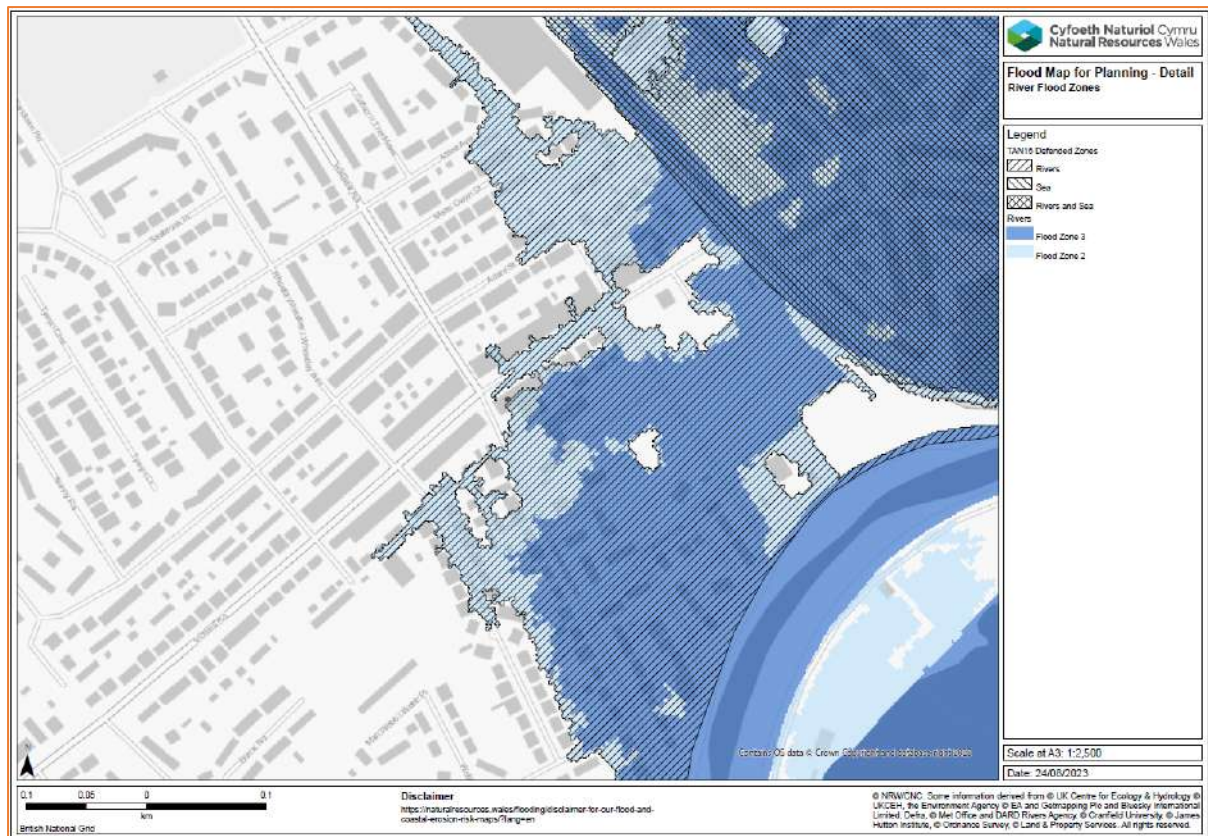


Figure 5: Natural Resource Wales Fluvial Flood Zone Map (Source: NRW)

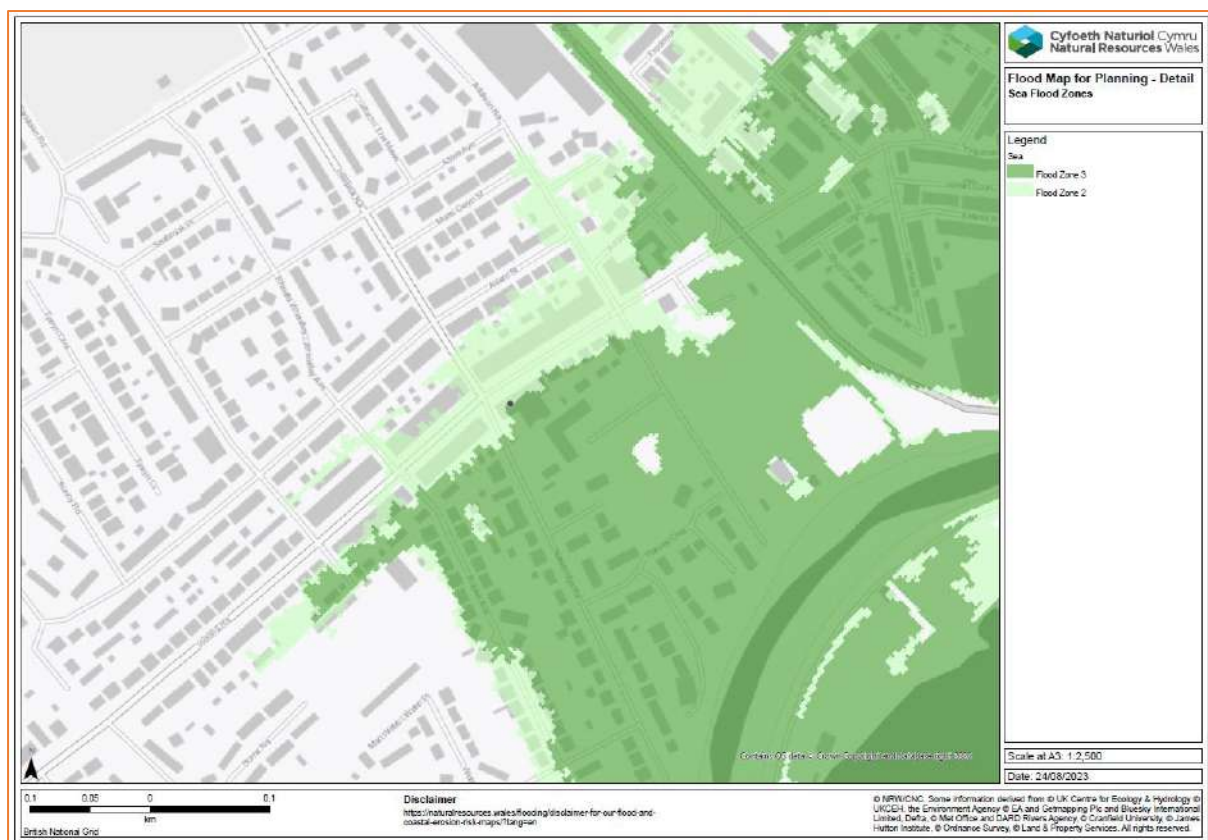


Figure 6: Natural Resource Wales Tidal Flood Zone Map (Source: NRW)

The site is shown to be within fluvial Flood Zone 2, but entirely outside of fluvial Flood Zone 3 on the Flood Map for Planning. The site is also shown to be within a TAN15 Defended Zone – Rivers. The site is also shown to be partially within tidal Flood Zone 3 and entirely within tidal Flood Zone 2.

The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.

Fluvial / Tidal (River Afan):

The River Afan (Welsh: Afon Afan) is a river in Wales whose valley formed the territory of the medieval Lords of Afan. The Afan Valley encompasses the upper reaches of the river. The valley is traversed by the A4107 road. Settlements in the area include Cwmafan, Pontrhydyfen and Cymmer. The town of Aberavon, whose name in Welsh Aberafan means 'mouth of the Afan', grew up on the banks of the river and was later subsumed by town of Port Talbot.

The Afan rises on the northern slopes of Mynydd Llangeinwyr to the east of Blaengwynfi, and flows in a generally south-westerly direction roughly parallel to the River Neath with which it shares its western watershed.

The river passes the Afan Argoed Country Park in its middle reaches. It converges with the river Pelenna at Pontrhydyfen. From here it turns southward towards Port Talbot.

To aid the construction of the docks at Port Talbot, the river was impounded and a diversion channel built that now forms the lower reaches of this river. There are two weirs in this final tidal reach of the Afan; Greenpark Weir at the upstream tidal limit, which has been reconstructed in 2017 and provides headwaters for the dock feeder channel that approximately follows the river's original route, and Newbridge Weir, which is the most downstream weir, presents a barrier to fish passage and is in a poor state of repair.

Modelled flood levels and extents:

Modelled flood levels and flood extents have been received from the NRW as part of a flood data request. Modelled flood data has been provided from the Port Talbot Harbourside model (JBA Consulting, 2017).

Natural Resources Wales (NRW) has provided the Port Talbot Harbourside Hydraulic Model, which provides flood risk modelling for the area and takes account of fluvial and tidal sources, and their interaction. The Port Talbot Harbourside PAR Project Report confirms that the modelling takes account of existing flood defences / maintained bank levels, and applies climate change allowances in accordance with latest guidance, i.e. tidal flood risk considered to 2116, and fluvial flows increased by 30%.

The site is shown to be partially within the modelled 1:200 year and entirely within the 1:1000 year tidal flood extents provided for 2116.

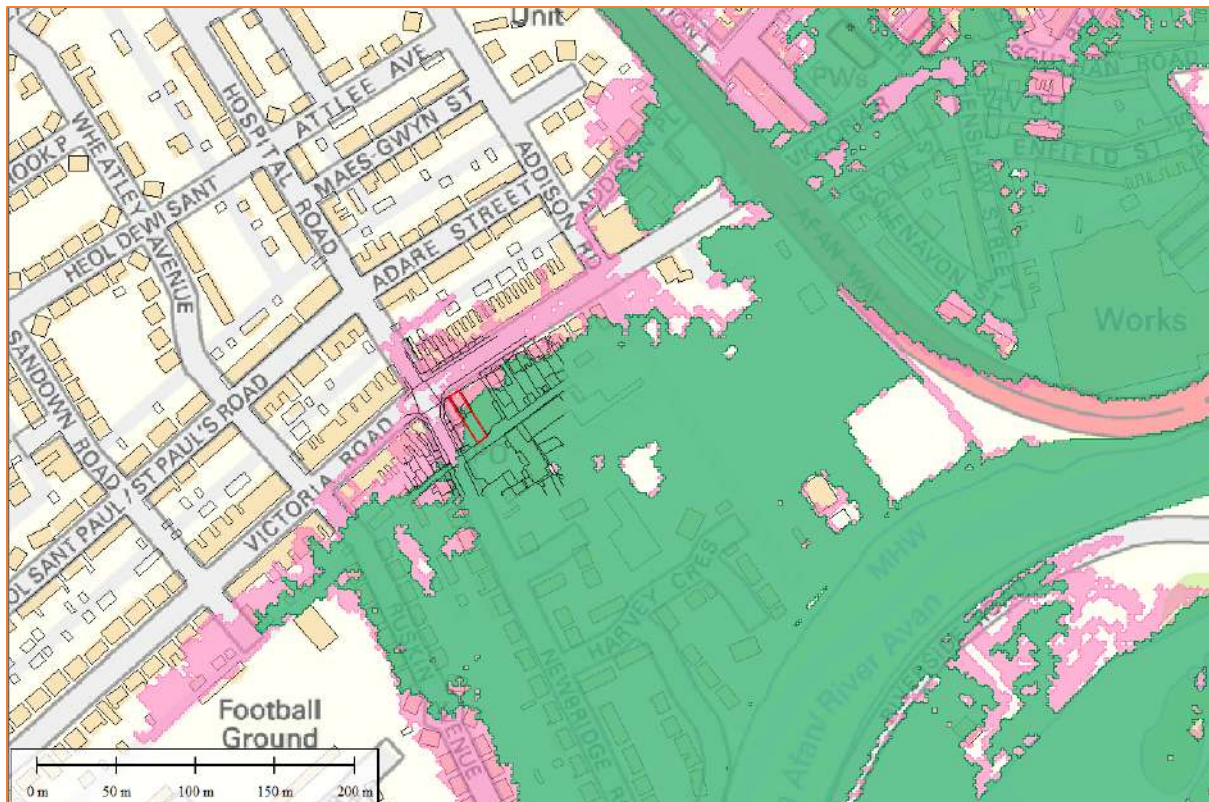


Figure 7: Modelled 1:200 year (green) and 1:1000 year (pink) tidal flood extents in 2116 (Source: NRW, OS Mapping)

No modelled flood data for the present day 1:200 year or 1:1000 year tidal events has been provided by NRW. The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.

Modelled maximum on site flood levels have been extracted for the site of 7.28mAOD for the 1:200 year climate change event and 7.54mAOD for the 1:1000 year climate change event.

Comparison of the modelled flood levels provided with topographic levels across the site (6.65mAOD to 7.58mAOD) shows that the site is between 0.30m above and 0.63m below the 1:200 year climate change flood level, and between 0.04m above and 0.89m below the 1:1000 year climate change flood level.

The site however slopes generally down from northwest to southeast. Topographic levels in the area of the existing building range between 7.22mAOD to 7.58mAOD, and comparison of the modelled climate change flood levels with these topographic levels shows this area of the site is between 0.30m above and 0.06m below the 1:200 year and 0.04m above and 0.32m below the 1:1000 year flood levels.

Based on the plans provided, the finished ground floor level is shown to be 0.15m above external ground level. As such, with a maximum 1:200 year plus climate change flood depth of 0.06m, the entire building is above the design flood level and therefore flood free.



Figure 8: Modelled 1:100 year (orange), 1:100 year + CC (red) and 1:1000 year (purple) fluvial flood extents (Source: NRW, OS Mapping)

The site is shown to be entirely outside of the present day 1:100 year extent, 1:100 year plus climate change and 1:1000 year fluvial extents.

The site lies within the West Wales River Basin District, where the Change Factor / Central Estimate climate change allowance is a 30% increase in fluvial flows. The Port Talbot Harbourside model report states that a 30% increase in fluvial flows is used to represent climate change.

Flood defences:

The site is shown to be within Flood Zone C1- served by significant infrastructure, including flood defences. The flood defences along the River Afan include flood defence walls and embankments, and there is also a coastal defence wall. The Shoreline Management Plan - Lavernock Point to St Ann's Head Policy is to Hold the Line for the Long Term – up to 2105.

Historical flood records:

According to NRW they hold no historic flooding information in this area.

Pluvial (Surface Water and Small Watercourses):

Pluvial (surface water) flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

In 2013 the EA and NRW, working with Lead Local Flood Authorities (LLFAs), produced an updated Flood Map for Surface Water. It is considered to represent a significant improvement on the previous surface water flood maps available, both in terms of method and representation of the risk of flooding. The modelling techniques and data

used are considerably improved, and also incorporated locally produced mapping where this is available to represent features best modelled at a local scale.

The Flood Map for Surface Water assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year (annual probability of flooding is shown in brackets):

- 1:30 (3.3%)
- 1:100 (1%)
- 1:1000 (0.1%)

The mapping below shows the Risk of Flooding from Surface Water and Small Watercourses centred on the site. Please note that NRW do not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation.

The Natural Resources Wales Surface Water and Small Watercourses Flood Map suggests that the existing building and roads surrounding the site lie outside of areas of High, Medium and Low risk of flooding from surface water. The very rear (south east) of the site is shown to be within an area with a "Low" risk of flooding from surface water.

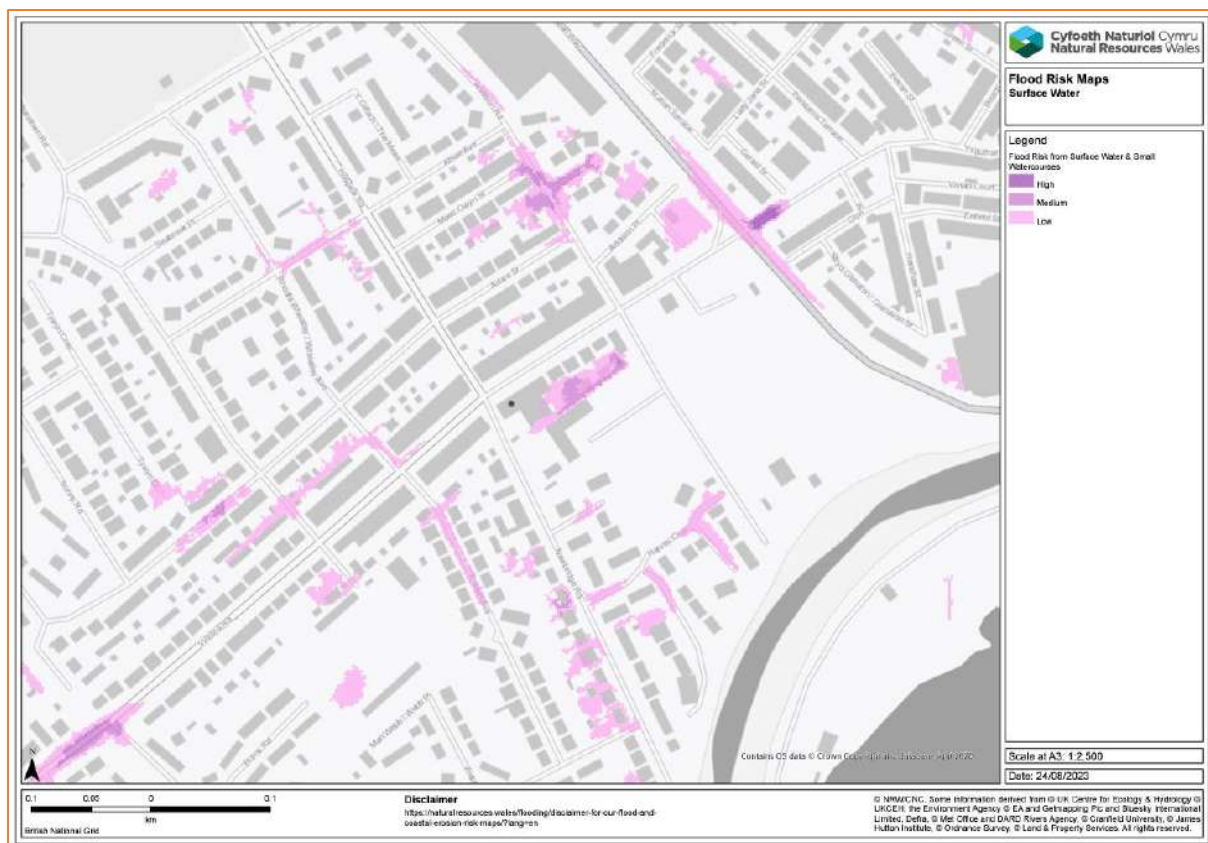


Figure 9: Extract from Natural Resources Wales Surface Water and Small Watercourses Flood Map (Source: NRW)

Groundwater:

Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional

groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

No information has been provided to suggest that the site is susceptible to groundwater flooding.

Sewer Surcharge:

Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

No information has been provided to suggest that the site is susceptible to sewer surcharge flooding.

Other Sources:

The Natural Resources Wales Risk of Flooding from Reservoirs Map suggests that the site lies outside the "Maximum extent of flooding" from reservoir failure. The Natural Resources Wales also advise on their website that reservoir flooding is extremely unlikely. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. These inspections are monitored and enforced by the Natural Resources Wales themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial flooding to occur.

There do not appear to be any further artificial (man-made) sources of flood risk (such as raised canals) in the vicinity of the site.

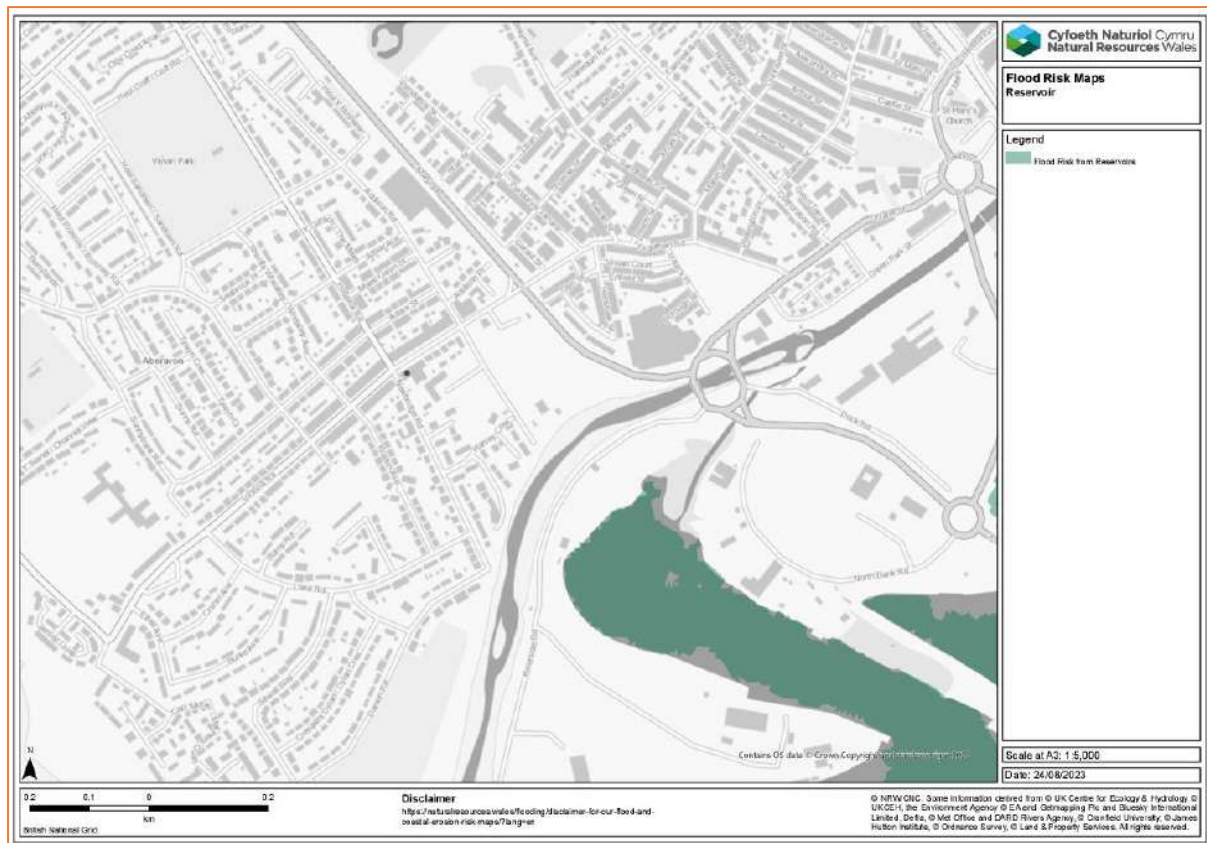


Figure 10: Extract from Natural Resources Wales risk of flooding from reservoirs (Source: NRW)

Flood Risk Management Measures

Vulnerability to flooding:

TAN15 classifies property usage by vulnerability to flooding.

The site comprises of an existing building, which is used for commercial uses with a hairdressers on the ground floor. The site is therefore classified as “less vulnerable development” throughout.

Post development, the site will become “highly vulnerable development” throughout, as the application is for the Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above.

Particular flooding consequences may not be acceptable for particular types of development. For example, allowing residential development in areas which are subject to high risks of flooding can result in a traumatic impact on people's lives. The precautionary framework identifies the vulnerability of different land uses to flooding, and for this purpose, development has been subdivided into three categories:

Development category	Types
Emergency services	hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood
Highly vulnerable development	all residential premises (including hotels and caravan parks), public buildings (e.g. schools, libraries, leisure centres), especially vulnerable industrial development (e.g. power stations, chemical plants, incinerators), and waste disposal sites
Less vulnerable development	general industrial, employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites

Table 2: Vulnerability to flooding categories

The Emergency Services category describes facilities which need to be operational and accessible at all times. Highly vulnerable development describes development where the ability of occupants to decide on whether they wish to accept the risks to life and property associated with flooding, or be able to manage the consequences of such a risk, is limited. It also includes those industrial uses where there would be an attendant risk to the public and the water environment should the site be inundated. Less vulnerable development describes development where the ability of occupants to decide on whether they wish to accept such risks is greater than that in the highly vulnerable category. The vulnerability attributed to a mixed use proposal will be defined by the most vulnerable use.

There are uses which are considered to be exceptions to the general rule, and have not been classified above, because they are required in a fluvial, tidal or coastal location by virtue of their nature. These include boatyards, marinas, essential works required at mooring basins, and development associated with canals.

Physical Design Measures:

In accordance with section A1.14 of TAN15 there is a frequency threshold of flooding below which flooding of development should not be allowed. The following table, taken from TAN15, provides indicative guidance as to what the frequency threshold could be for different types of development in terms of annual probability of occurrence:

Type of development	Threshold frequency	
	Fluvial	Tidal
Residential	1%	0.5%
Commercial / retail	1%	0.5%
Industrial	1%	0.5%
Emergency services	0.1%	0.1%
General infrastructure	1%	0.5%

Table 3: TAN15 Flood frequency thresholds

Tan15 requires the development to be flood free in the 1:100 year fluvial / 1:200 year tidal event for the lifetime of the development (i.e. including an allowance for climate change) (section A1.14).

The site is shown to be entirely outside all of the modelled fluvial present day 1:100 year extent, 1:100 year plus climate change and 1:1000 year extents.

The site is shown to be partially within the modelled 1:200 year and entirely within the 1:1000 year tidal flood extents provided for 2116.

The site however slopes generally down from northwest to southeast. Comparison of the modelled climate change flood levels provided with topographic levels in the area of the existing building on site shows this area of the site is between 0.30m above and 0.06m below the 1:200 year and 0.04m above and 0.32m below the 1:1000 year flood levels.

Based on the plans provided, the finished ground floor level is shown to be 0.15m above external ground level. As such, with a maximum 1:200 year plus climate change flood depth of 0.06m, the entire building is above the design flood level and therefore flood free.

To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the development, in consultation with the Local Authority building control department.

These measures can include the following:

- Closed-cell foam used in wall cavities;
- External walls rendered resistant to flooding to 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;
- Anti-syphon fitted to all toilets;

It is also recommended that flood proof doors are installed for the ground floor external doors. Demountable flood defence barriers could instead be used to defend ground level doorways and low windows if flood doors are not practical or other planning constraints prevent it.

Safe Escape:

TAN 15 requires a route of safe escape for all site users to be provided from new development in Flood Zone C.

Type of development	Maximum depth of flooding (mm)	Maximum rate of rise of floodwaters (m/hr)	Maximum speed of inundation of flood risk area (hrs)	Maximum velocity of floodwaters (metres/sec)
	Property Access			Property Access
Residential (habitable rooms)	600 600	0.1	4	0.15 0.3
Commercial & Retail	600 600	0.3	2	0.15 0.3
Industrial	1000 1000	0.3	2	0.3 0.45
Emergency Services	450 600	0.1	4	0.15 0.3
General Infrastructure	600 600	0.3	2	0.3 0.3

Table 4: TAN15 Table A1.15

Table A1.15 shows the threshold frequency beyond which proposed development would be expected to flood under extreme conditions (1:1000 year event with allowance for climate change). For new residential development a maximum flood depth of 600mm would be the allowance at the property (residential habitable rooms) and for the site access.

Comparison of the modelled 1:1000 year plus climate change flood levels with topographic levels in the area of the existing building, and at the site access shows this area of the site is between 0.04m above and 0.32m below the 1:1000 year flood levels. As such, the flood depths are within the tolerable allowances of TAN15.

NRW has also provided flood hazard data for the tidal 1:1000 year flood event in 2116. The proposed escape route is to exit the site to Victoria Road and travel west / southwest along Victoria Road. This route is shown to have a maximum of 'Very Low Hazard', and is shown to be almost entirely dry after the junction with Hospital Road.

Safe escape as per the definitions in TAN15 can therefore be provided.

Flood Hazard	Colour	Hazard to People Classification
Less than 0.75		Very low hazard - Caution
0.75 to 1.25		Danger for some - includes children, the elderly and the infirm
1.25 to 2.0		Danger for most - includes the general public
More than 2.0		Danger for all - includes the emergency services

Table 5: Hazard to People Classification (Source: NRW)

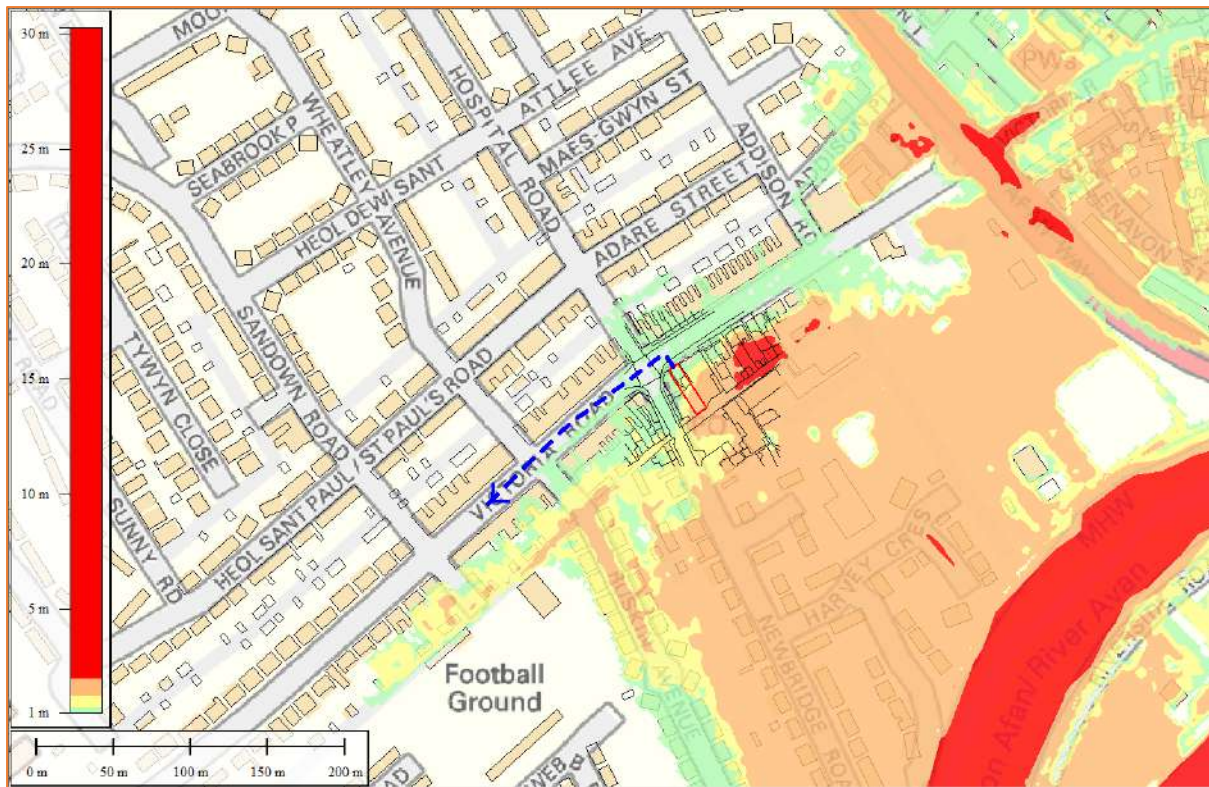


Figure 11: Modelled maximum flood hazard for the 1:1000 year tidal flood event in 2116. Proposed escape route shown by blue dashed line (Source: NRW flood data, OS Mapping)

Owners, occupants and tenants should follow the warning and evacuation procedure detailed in the following section.

Flood Alert/Warnings:

The NRW is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.

Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.

The applicant has agreed to implement a flood warning and evacuation plan post development, and subscribe to the NRW's flood warning service. The site lies partially within the River Afan at Port Talbot Flood Warning Area.

The site is in a NRW Flood Warning Area. The NRW issue flood warnings to specific areas when flooding is expected. It is recommended that the applicant registers online with the free NRW Floodline Warnings Direct service at <https://www.fws.environment-agency.gov.uk/app/olr/home?style=NRW&lang=en> to receive flood warnings by phone, text or email.

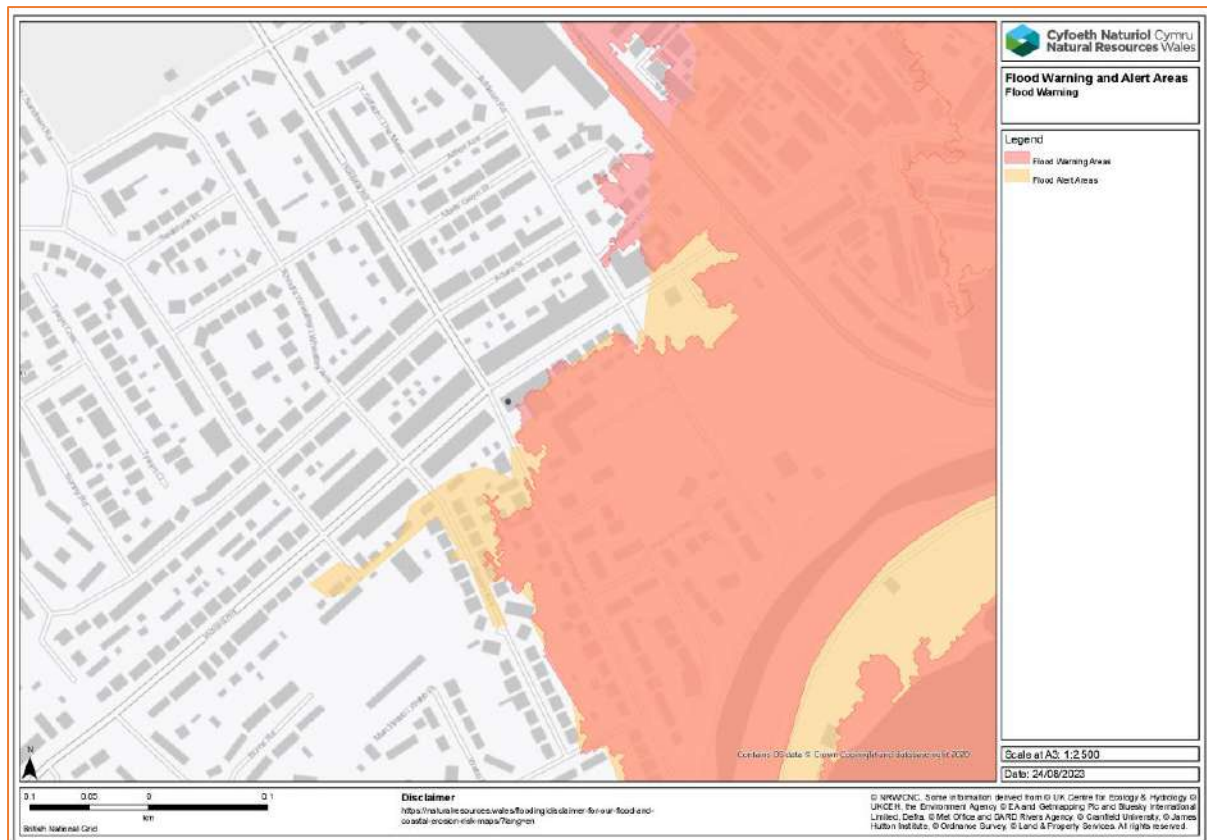


Figure 12: NRW Flood Warning Areas (Source: NRW)

Flood Warning:

The flood warning service has three types of warnings that will help you prepare for flooding and take action:

Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 6: Flood Warnings

Flood Plan:

It is recommended that the applicant and future owners, occupiers and Landlords of the properties prepare a flood plan to protect life and property during a flood event:

Before a flood:

- Find out if you are at risk of flooding.
- Find out if you can receive flood warnings.
- Prepare and keep a list of all your important contacts to hand or save them on your mobile phone.
- Think about what items you can move now and what you would want to move to safety during a flood such as pets, cars, furniture, and electrical equipment.
- Know how to turn off gas, electricity and water supplies.
- Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.
- Consider buying flood protection products such as flood boards and airbrick covers to help reduce flood water getting into your property.

During a flood:

- Tune into your local radio station on a battery or wind-up radio.
- Fill jugs and saucepans with water.
- Grab your flood kit - if you have prepared one.

- Collect blankets, torch, first aid kit, medication and food.
- Move important documents, personal items, valuables, and lightweight belongings upstairs or to high shelves.
- Raise large items of furniture, or put them in large bags if you have them.
- Move people, outdoor belongings, cars and pets to higher ground.
- Switch off water, gas and electricity at mains when water is about to enter your home. Do not touch sources of electricity when standing in water.
- Fit flood protection products, if you have them, for example flood boards, airbrick covers, sandbags.
- Put plugs in sinks and baths. Weigh them down with a pillowcase or plastic bag filled with soil.
- If you do not have non-return valves fitted, plug water inlet pipes with towels or cloths.
- Move your family and pets upstairs or to a high place with a means of escape.
- Listen to the advice of the emergency service and evacuate if told to do so.
- Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.

After a flood:

- If you have flooded, contact your insurance company as soon as possible.
- Take photographs and videos of your damaged property as a record for your insurance company.
- If you don't have insurance, contact your local authority for information on grants and charities that may help you.
- Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask.
- Have your electrics, central heating and water checked by qualified engineers before switching them back on.

Off-Site Impacts**Floodplain storage:**

TAN15 requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

The proposed development is for the change of use the existing building. As such, there will be no increase in built footprint on site post development, and therefore no unacceptable loss of flood storage on site post development.

Surface Water Drainage Strategy:

From 7 January 2019, all new developments of more than 1 dwelling house or where the construction area is 100m² or more, will require Sustainable Drainage Systems (SuDS) for surface water.

Due to the layout of the proposed development, and as the application is for the change of use of the existing building, there is no need for additional surface water drainage features. The development will not adversely affect the surface water flood risk to the surrounding area.

Conclusion

Unda Consulting Limited have been appointed by Shilat Limited to undertake a Site Specific Flood Consequence Assessment (FCA) for Ginos, 2A Victoria Road, Port Talbot, SA12 6AB. The FCA has been undertaken in accordance with Technical Advice Note 15 (TAN 15) and the associated technical guidance.

The proposed planning application is for the Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above.

The site comprises of an existing building, which is used for commercial uses with a hairdressers on the ground floor. The site is therefore classified as "less vulnerable development" throughout.

Post development, the site will become "highly vulnerable development" throughout, as the application is for the Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above.

The site is located partially within Flood Zone C1 (Risk of flooding from rivers or the sea, served by significant flood defence infrastructure, including flood defences), which means it is defined as land having a 1 in 1000 annual probability of tidal flooding.

The risk would appear to be fluvial and tidal and originate from the River Afan (which is tidally influenced), approximately 235m to the south east of the site at its closest proximity.

The site is shown to be within fluvial Flood Zone 2, but entirely outside of fluvial Flood Zone 3 on the Flood Map for Planning. The site is also shown to be within a TAN15 Defended Zone – Rivers. The site is also shown to be partially within tidal Flood Zone 3 and entirely within tidal Flood Zone 2.

The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.

Modelled flood levels and flood extents have been received from the NRW as part of a flood data request. Modelled flood data has been provided from the Port Talbot Harbourside model (JBA Consulting, 2017).

The site is shown to be partially within the modelled 1:200 year and entirely within the 1:1000 year tidal flood extents provided for 2116.

No modelled flood data for the present day 1:200 year or 1:1000 year tidal events has been provided by NRW. The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.

Comparison of the modelled flood levels provided with topographic levels across the site shows that the site is between 0.30m above and 0.63m below the 1:200 year climate change flood level, and between 0.04m above and 0.89m below the 1:1000 year climate change flood level.

The site however slopes generally down from northwest to southeast. Comparison of the modelled climate change flood levels with topographic levels in the area of the existing building shows this area of the site is between 0.30m above and 0.06m below the 1:200 year and 0.04m above and 0.32m below the 1:1000 year flood levels.

Based on the plans provided, the finished ground floor level is shown to be 0.15m above external ground level. As such, with a maximum 1:200 year plus climate change flood depth of 0.06m, the entire building is above the design flood level and therefore flood free.

The site is shown to be entirely outside of the present day 1:100 year extent, 1:100 year plus climate change and 1:1000 year fluvial extents.

The site is shown to be within Flood Zone C1- served by significant infrastructure, including flood defences. The flood defences along the River Afan include flood defence walls and embankments, and there is also a coastal defence wall. The Shoreline Management Plan - Lavernock Point to St Ann's Head Policy is to Hold the Line for the Long Term – up to 2105.

According to NRW they hold no historic flooding information in this area.

The Natural Resources Wales Surface Water and Small Watercourses Flood Map suggests that the existing building and roads surrounding the site lie outside of areas of High, Medium and Low risk of flooding from surface water. The very rear (south east) of the site is shown to be within an area with a “Low” risk of flooding from surface water.

Comparison of the modelled 1:1000 year plus climate change flood levels with topographic levels in the area of the existing building, and at the site access shows this area of the site is between 0.04m above and 0.32m below the 1:1000 year flood levels. As such, the flood depths are within the tolerable allowances of TAN15.

NRW has also provided flood hazard data for the tidal 1:1000 year flood event in 2116. The proposed escape route is to exit the site to Victoria Road and travel west / southwest along Victoria Road. This route is shown to have a maximum of ‘Very Low Hazard’, and is shown to be almost entirely dry after the junction with Hospital Road.

Safe escape as per the definitions in TAN15 can therefore be provided.

Additionally, the risk of flooding posed to the site by reservoir, groundwater, and sewer surcharge flooding would appear to be low.

From 7 January 2019, all new developments of more than 1 dwelling house or where the construction area is 100m² or more, will require Sustainable Drainage Systems (SuDS) for surface water.

Due to the layout of the proposed development, and as the application is for the change of use of the existing building, there is no need for additional surface water drainage features. The development will not adversely affect the surface water flood risk to the surrounding area.

In summary:

- Partially Flood Zone C1 as defined by Natural Resource Wales (NRW).
- The site is shown to be within fluvial Flood Zone 2, but entirely outside of fluvial Flood Zone 3 on the Flood Map for Planning.
- The site is also shown to be within a TAN15 Defended Zone – Rivers.
- The site is also shown to be partially within tidal Flood Zone 3 and entirely within tidal Flood Zone 2.
- The Port Talbot Harbourside PAR Project Report (2016) states that Modelling of the present day tidal flood risk suggests that Port Talbot is also currently protected for this source of flood risk.
- Change of use of a property from hairdresser to residential, creating a studio apartment on the ground floor and a separate flat above
- “Highly vulnerable development” proposed throughout.
- Existing building and roads surrounding the site lie outside of areas of High, Medium and Low risk of flooding from surface water. The very rear (south east) of the site is shown to be within an area with a “Low” risk of flooding from surface water and small watercourses.
- Risk of reservoir, groundwater and sewer surcharge flooding would appear to be low.
- The site is shown to be partially within the modelled 1:200 year and entirely within the 1:1000 year tidal flood extents provided for 2116.
- The site is shown to be entirely outside of the present day 1:100 year extent, 1:100 year plus climate change and 1:1000 year fluvial extents.
- Comparison of approximate finished floor levels with modelled flood levels shows the entire building is above the 1:200 year plus climate change tidal flood level, and all residential uses are therefore flood free.

- Safe escape as per TAN15 can be provided.
- Flood proofing of the building will be incorporated as appropriate.
- A flood warning and evacuation plan will be implemented post development.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Appendix

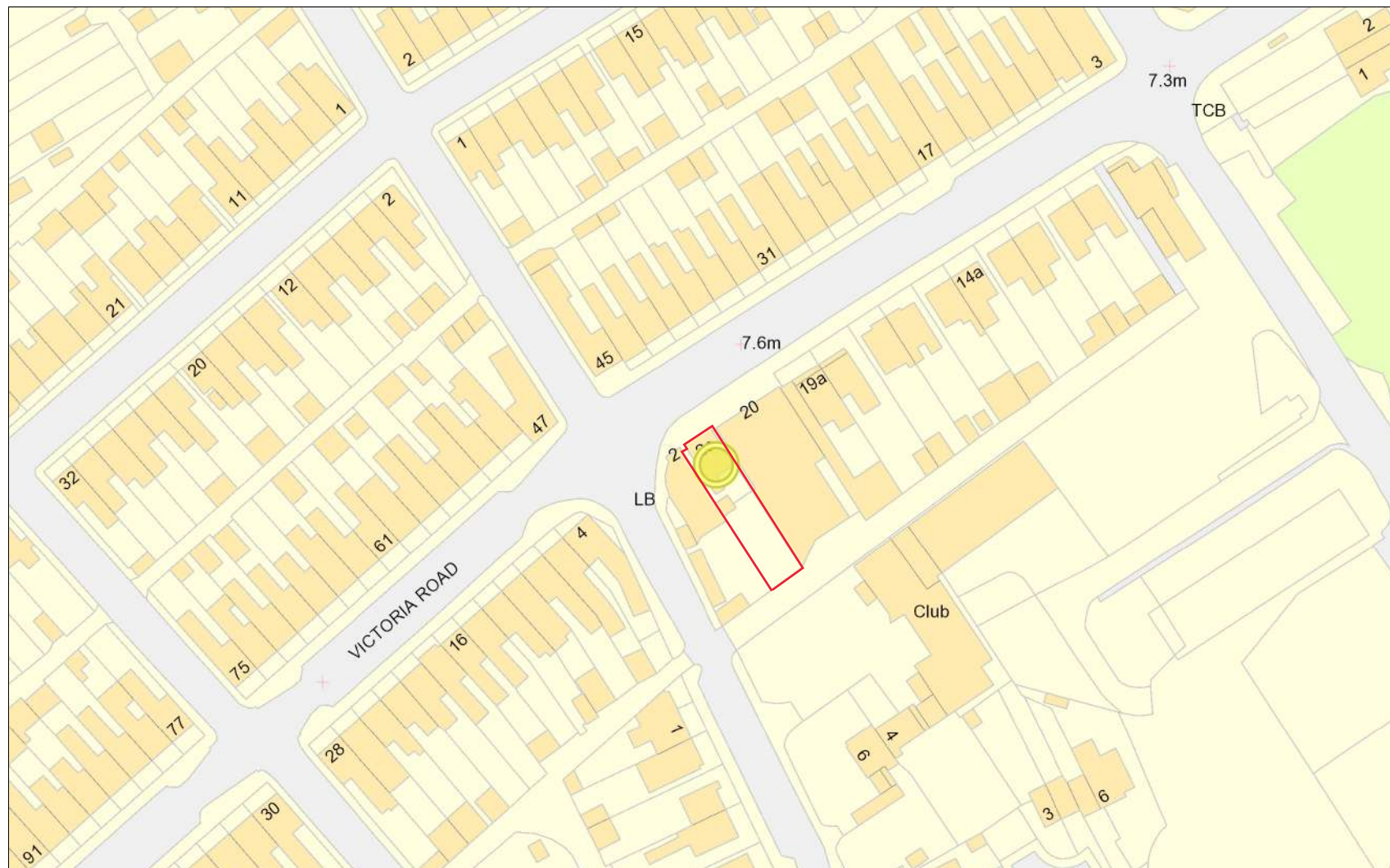
- Plans and drawings.

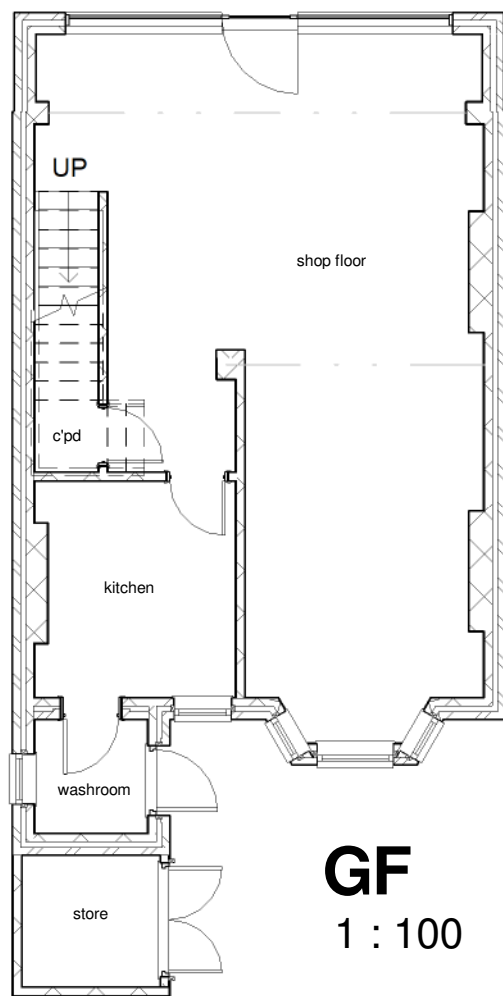
Location Plan

24/07/2023

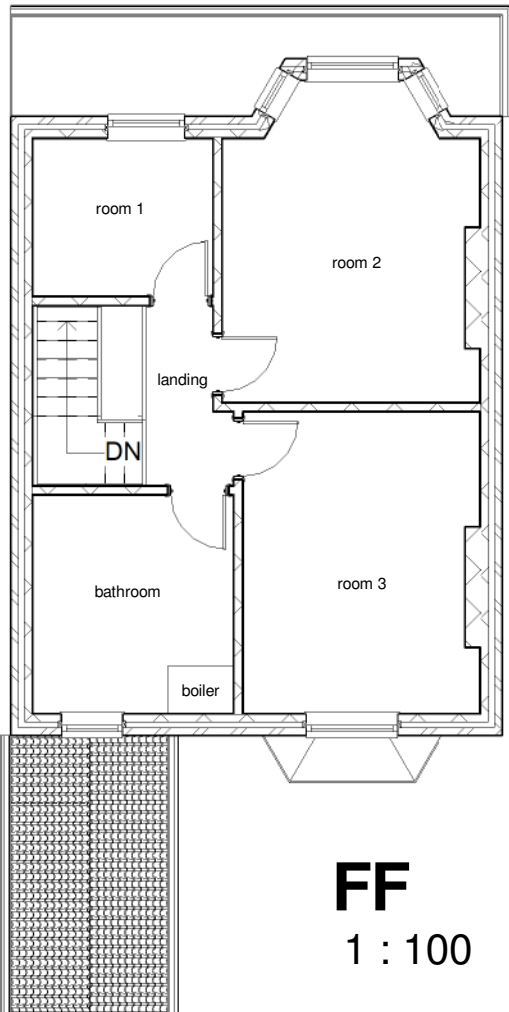


Scale: 1: 1250





GF
1 : 100



FF
1 : 100



Front
1 : 100



Rear
1 : 100

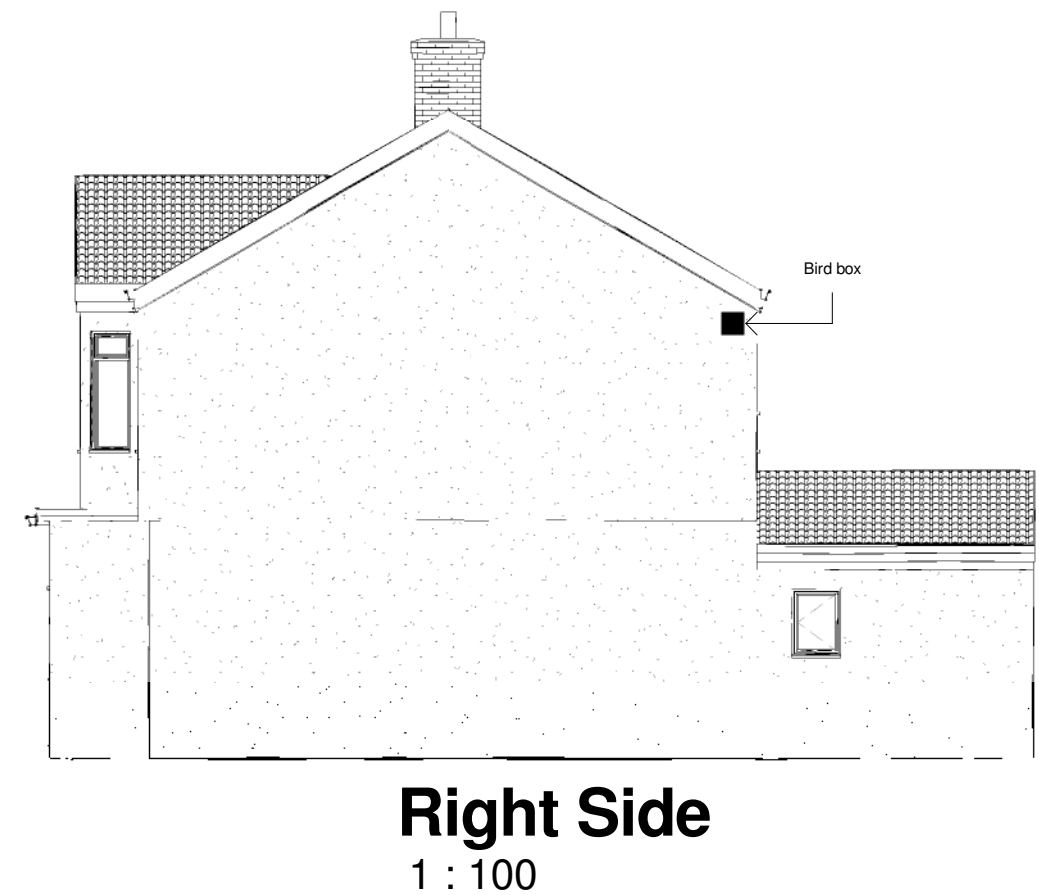
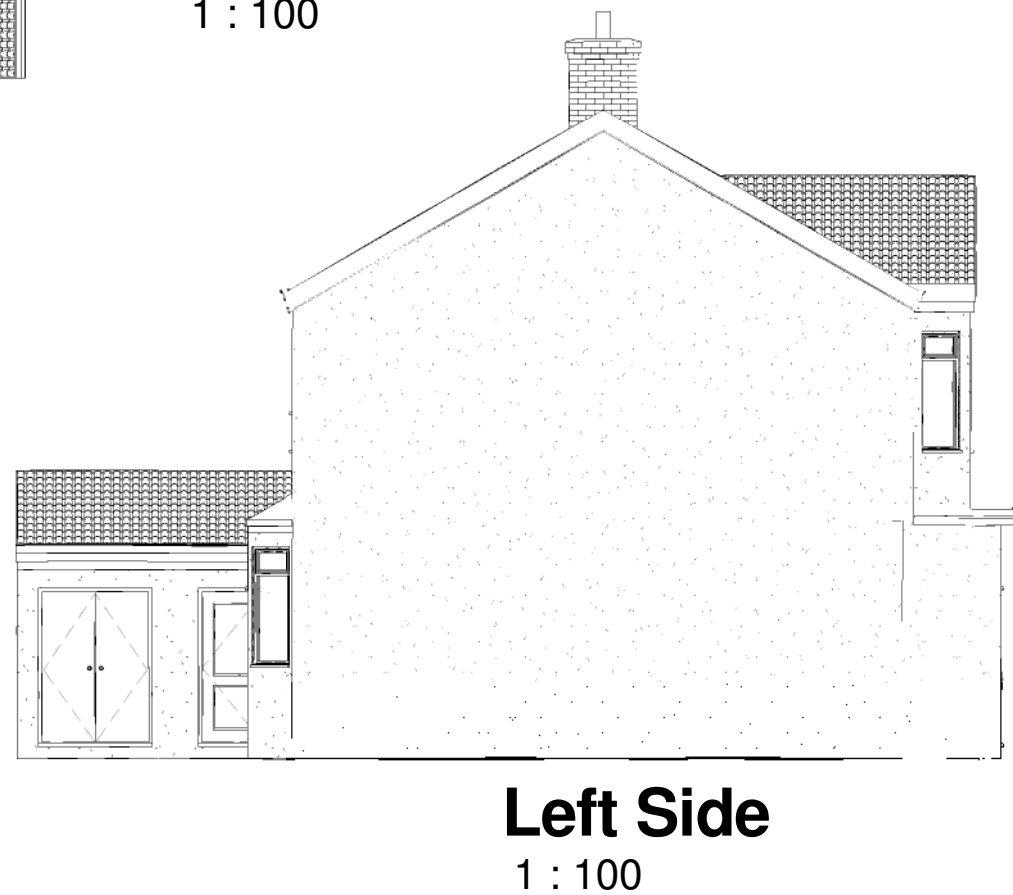
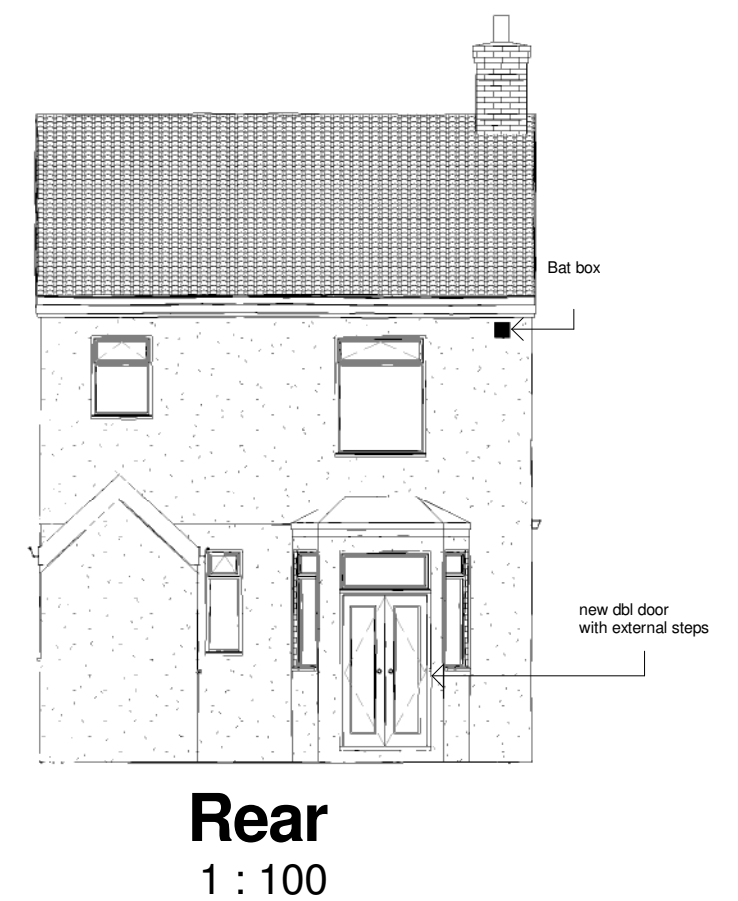
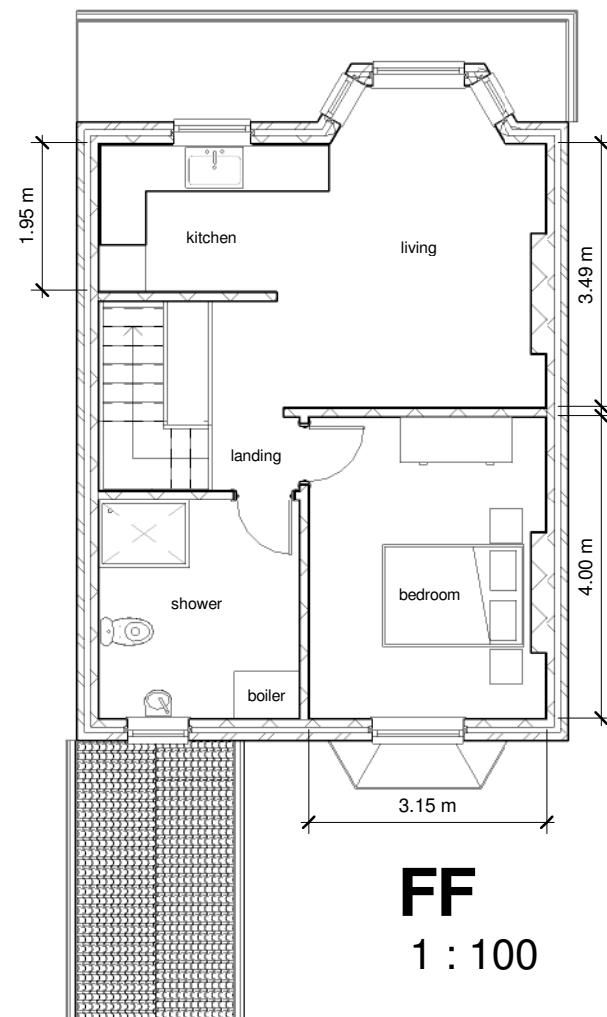


Left Side
1 : 100



Right Side
1 : 100

	No.	Description	Date	 www.ccs-solutions.co.uk				PROJECT 2A Victoria Rd, Port Talbot		CLIENT Mr Ariel Truman					
								Date 20/07/2023		Project number 15/07/2023		Scale (@ A3) 1 : 100			
								SHEET Existing		Drawn by CCS		DRAWING NUMBER A301		REV	
										Checked by Client					

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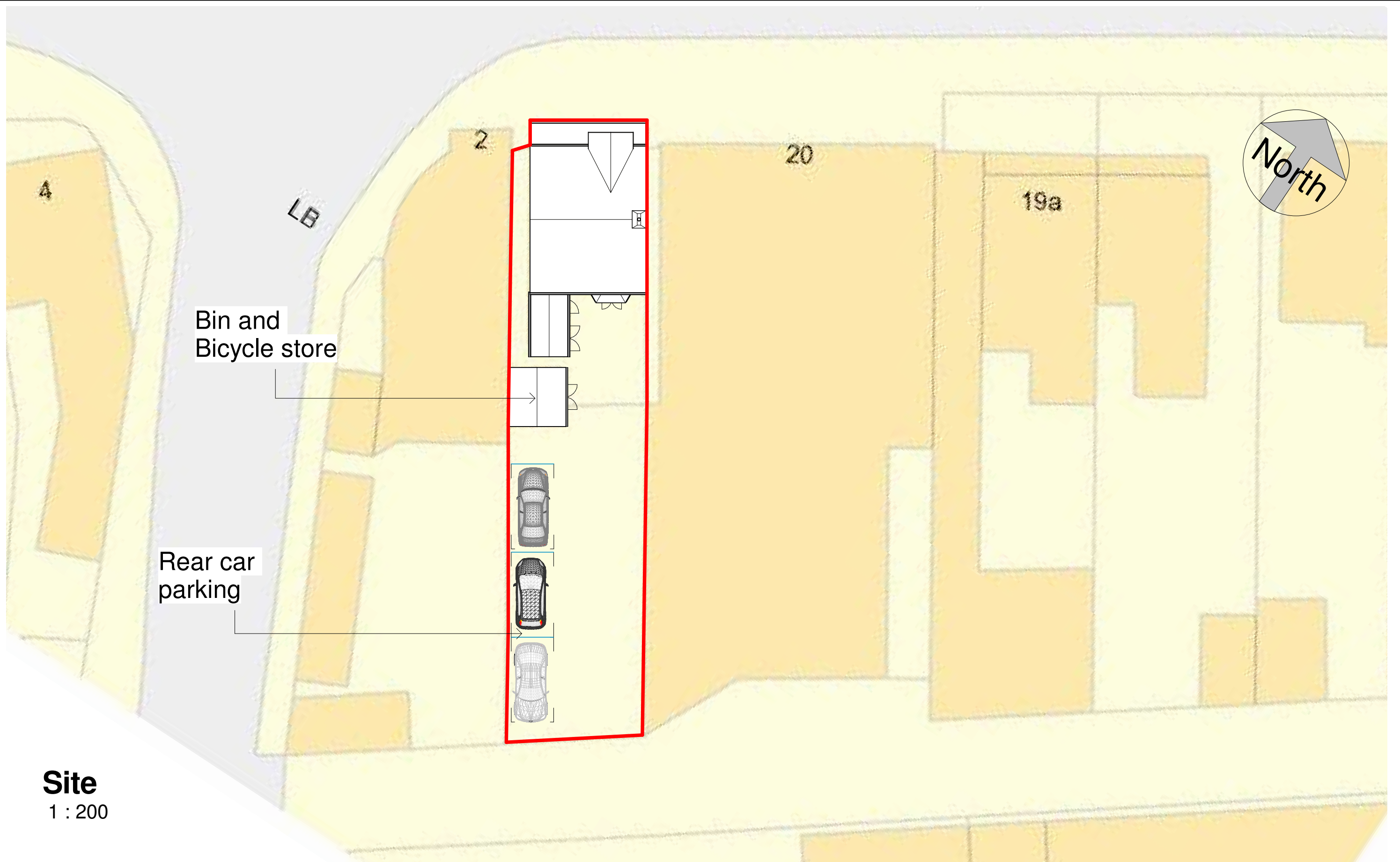


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CODE	STATUS	SUITABILITY DESCRIPTION	PURPOSE OF ISSUE
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PROJECT 2A Victoria Rd, Port Talbot	CLIENT Mr Ariel Truman		
	Date 20/07/2023	Project number 15/07/2023	Scale (@ A3) 1 : 100
SHEET Proposed	Drawn by CCS	DRAWING NUMBER A302	REV B
	Checked by Client		



Site

1 : 200

	No.	Description	Date	 www.ccs-solutions.co.uk		PROJECT 2A Victoria Rd, Port Talbot	CLIENT Mr Ariel Truman		
							Date 20/07/2023	Project number 15/07/2023	Scale (@ A3) 1 : 200
				CODE	STATUS	SHEET Proposed Site Plan	Drawn by CCS	DRAWING NUMBER A304	REV
							Checked by Client		