

44 Victoria Road Sandfields, Port Talbot, SA142 6AD

Flood Consequence Assessment and Justification Test

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Revision A

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This report has been prepared in conjunction with information obtained from NRW in relation to previous modelling assessments undertaken on flooding in the area. The results of this analysis are referenced within this report.

Method

The report will firstly assess the existing site, including a Flood Consequences Assessment, and any potential constraints to the development and the Justification Test demonstrate the suitability of the proposals.

The following report will assess the development proposals against the requirements of the PPW and the standing advice of the Natural Resources Wales and the Lead Local Flood Authority (LLFA).

References

ATI-29715a P5&6, 44 Victoria Rd, Sandfields

Project Background

Mda Civils and Structures Engineering Ltd (the consultant) has been commissioned by Mr Flower (the Client) to produce a Flood Consequence Assessment and Justification Test Report in relation to the proposed change of use

A planning application has been submitted for:

Application P2026/0066, 44 Victoria Road, Sandfields, Neath Port Talbot, SA142 6AD

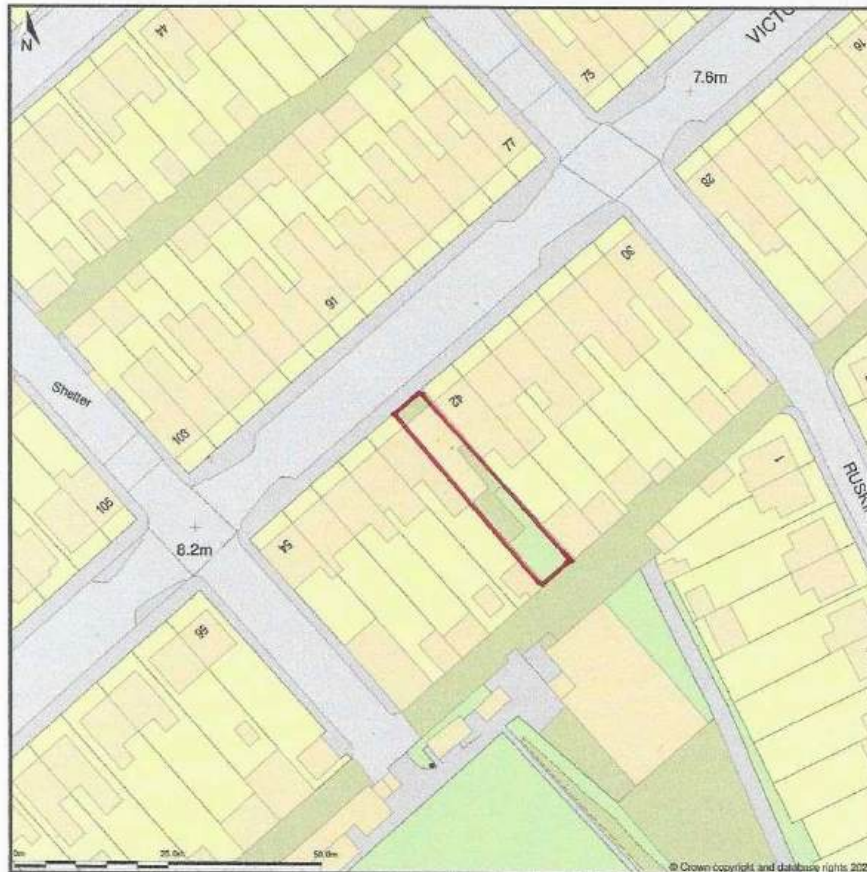
44 VICTORIA ROAD, SANDFIELDS, NEATH PORT TALBOT, SA12 6AD - PROPOSED CHANGE OF USE FROM DENTAL PRACTICE (D1 USE CLASS) TO ONE DWELLING (C3 USE CLASS)

Existing Site Description

The site is located within the Sandfields area of Port Talbot. The site is within a residential area of terrace properties on Victoria Road with the approximate coordinates for the site

Easting: 275261 , Northing:189574

The existing terraced property located at No 44 Victoria Road, benefits from rear access and parking via the lane to the rear of the terraced properties.



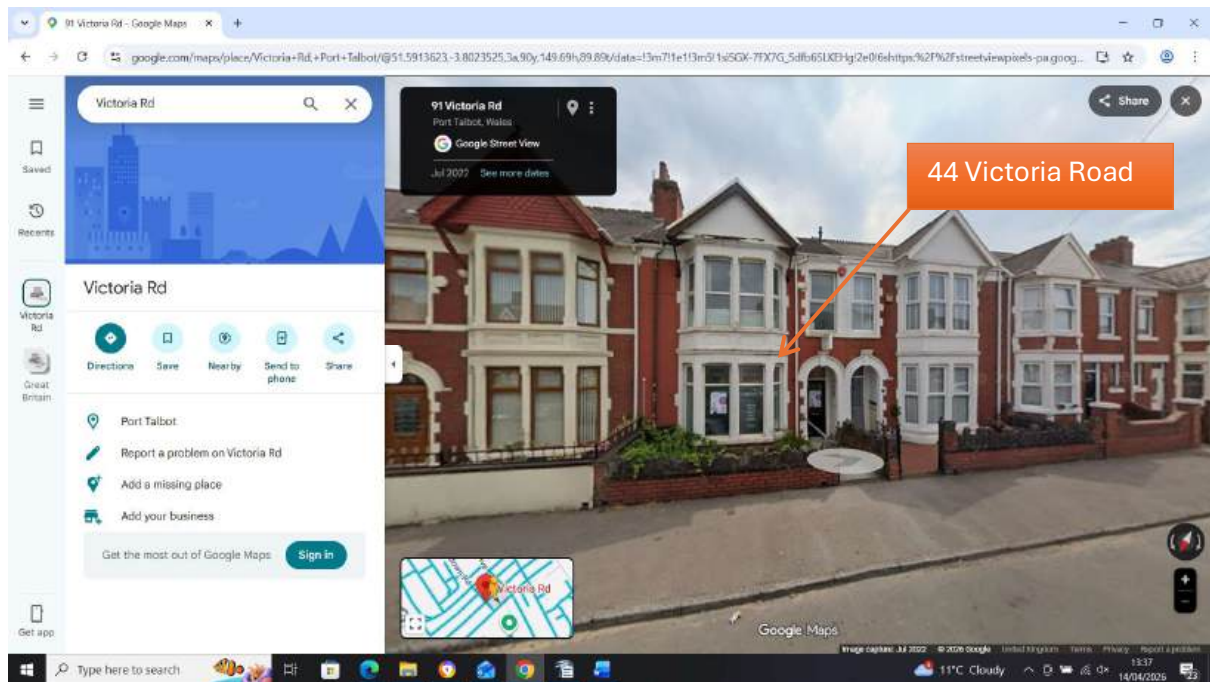
Site Location Plan

The existing building originally designed for residential use, has recently ceased operations as a dental practice. The client now wishes to return the property to a single residential use as its original designation.

The property is one of many terraced dwellings located along Victoria Road and within the wider primarily residential area.

The development includes internal modifications to the existing building to facilitate the conversion back to a single property, but retains the main existing structure and roof. There is no increase in impermeable areas and therefore no additional surface water run off produced as part of these proposals. All bedrooms will be returned as being on the first floor.

There is also the creation of a small usable garden of soft landscaping within the rear external yard of the property.



View of Primary Elevation of 44 Victoria Road

The front garden is bounded by a low-level brickwork/ stone wall. There is no increase in impermeable areas. The existing impermeable yard/garden to the rear of the property will benefit from soft landscaping to facilitate a garden. The access lane behind is adopted and is served by drainage gulleys. An existing gate in the back yard provides access to the rear of the property.

The site levels reduce from the front to the rear of the property.

The site surroundings are urban, predominantly residential areas.

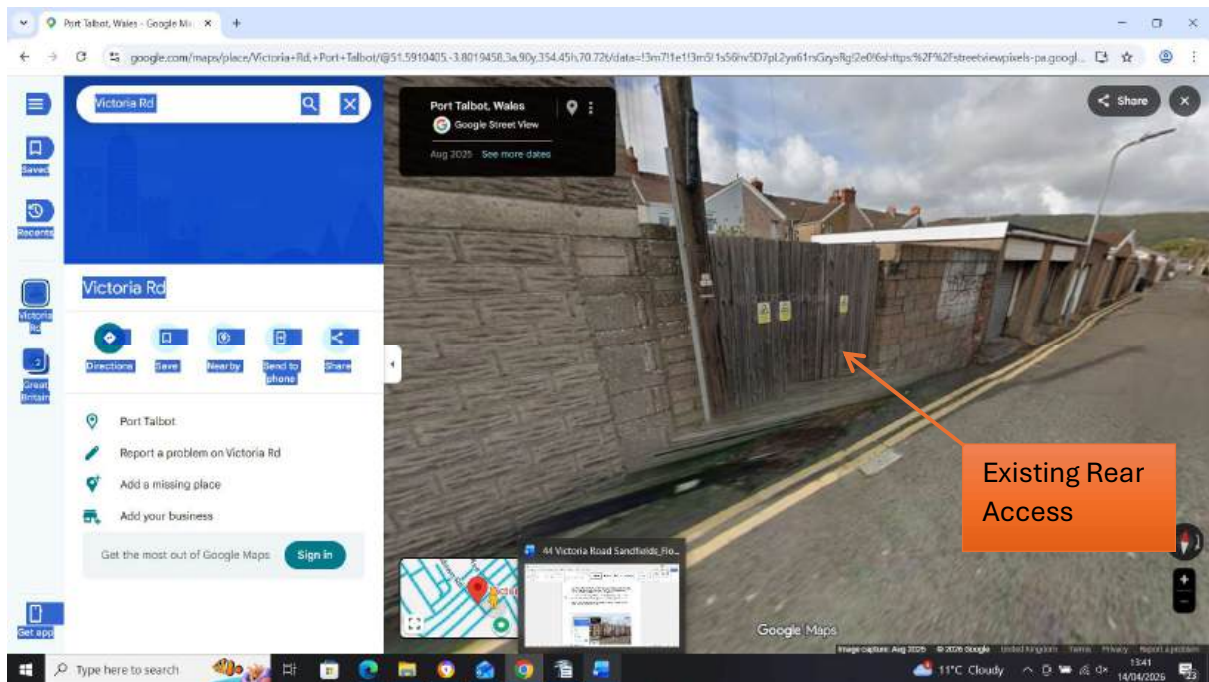
Port Talbot Rugby club is located off the lane to the rear of the property.

Tywyn Primary School is located 350m to the South West.

An electric sub station is located 300mm to the North East.

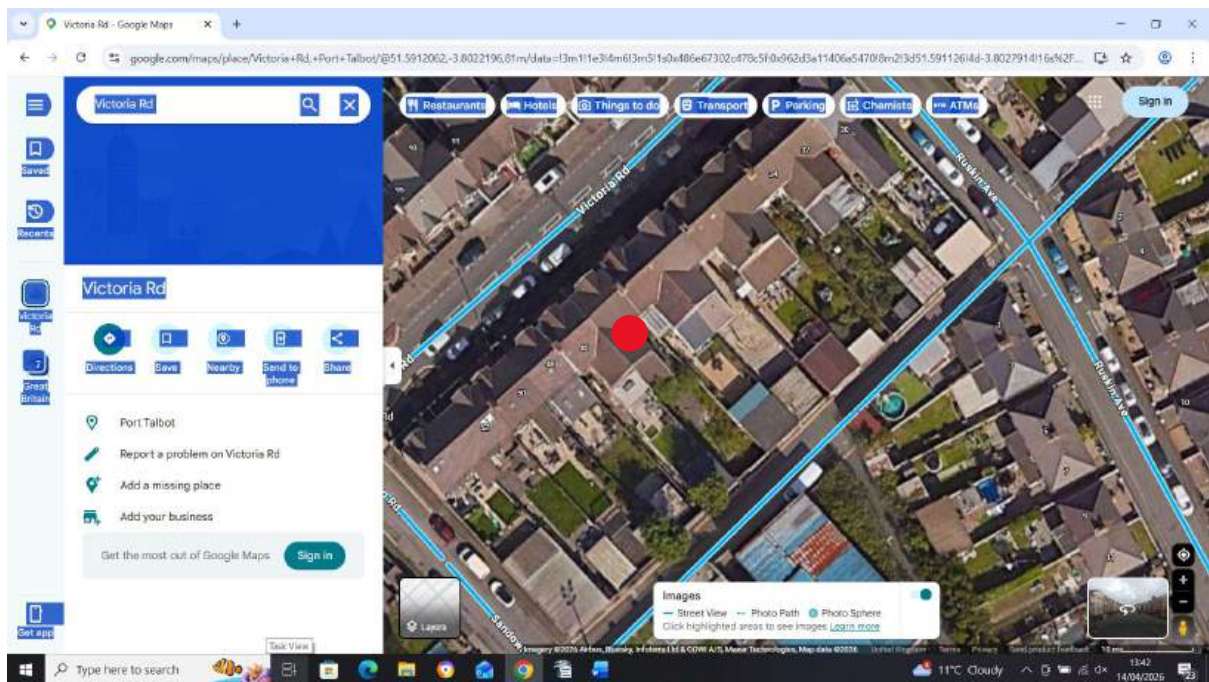
The River Afan is located 325m to the South East/East.

There are a range of commercial premises in the nearby area.



View of Existing Rear Access

The location of the site is indicated by the red marker on the NRW flood map below.



Google Earth Image of Property

A topographical survey has not been undertaken for the site, but from interrogation of LiDAR database the approximate level for the existing site is:

6.15m AOD – Approximate FFL of the property

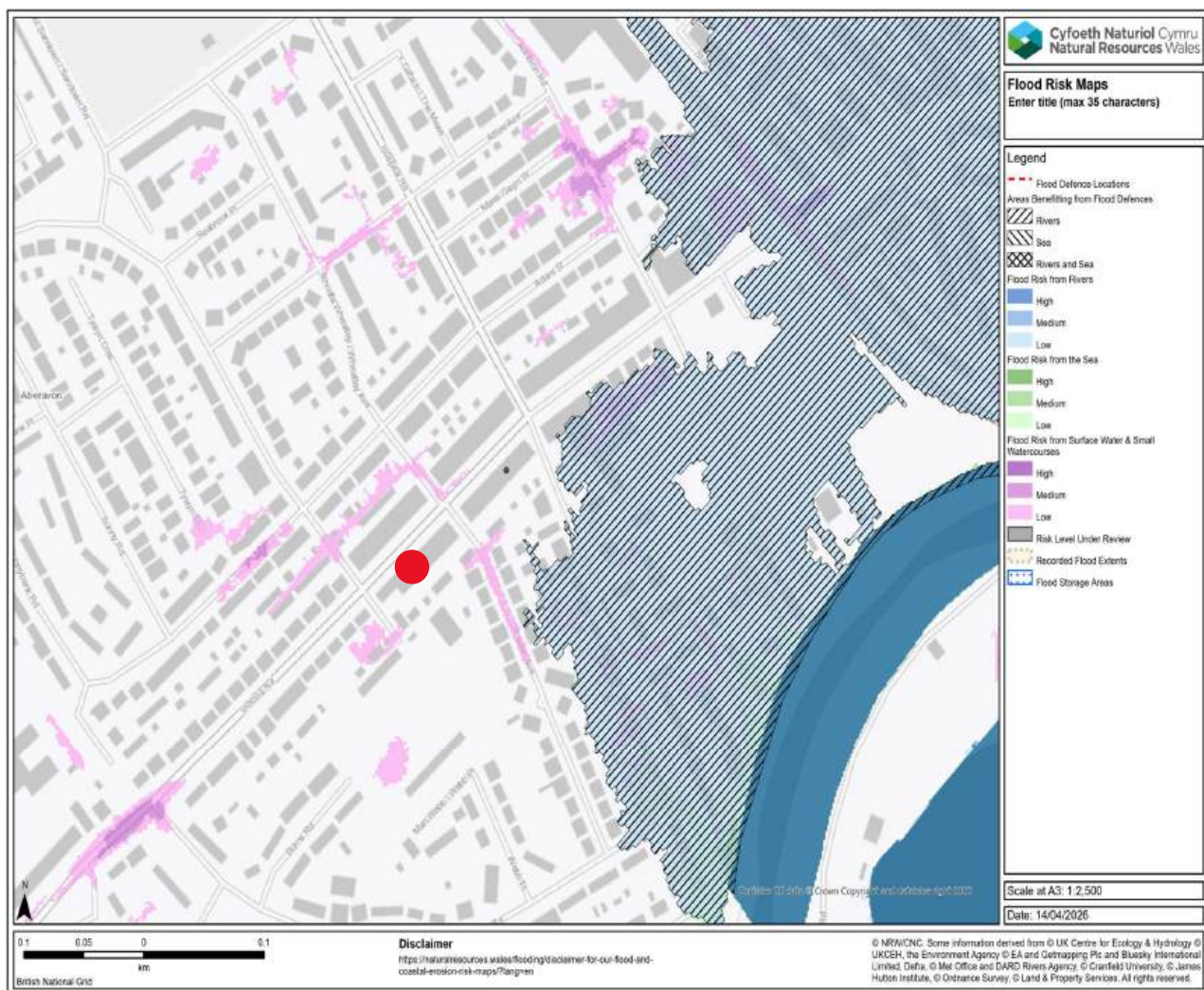
6.00 AOD to front of site

5.21m AOD to rear of site

5.4m AOD to the rear garden

3.75m AOD – River Afon to the South East

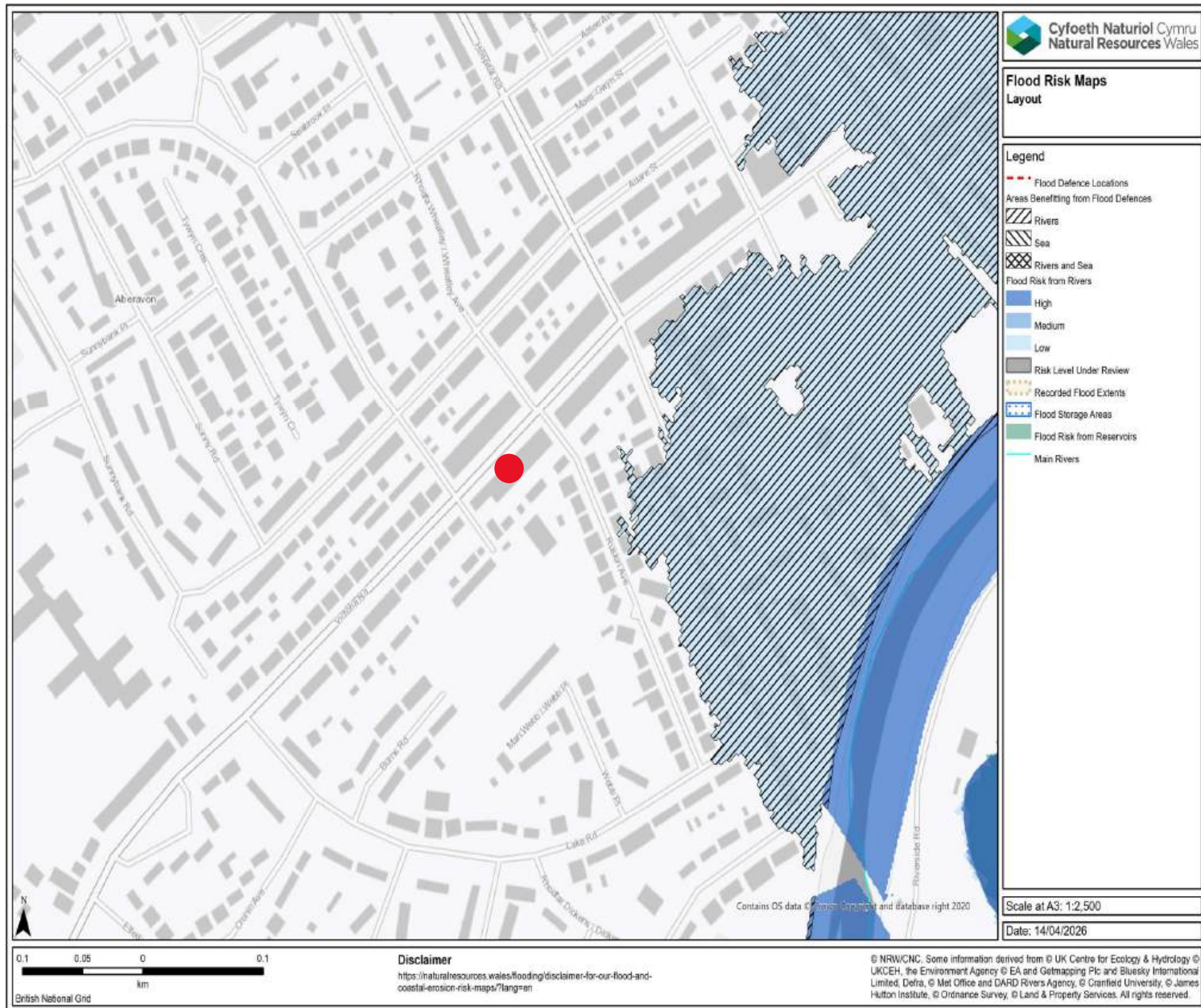
The location of the site is indicated by the red marker on the combined NRW flood map below.



Overall Flood Risk Map

The nearest Main River is the River Afan which is approximately 300m to the South East.No other watercourses are noted on mapping in the local area.

The site is noted as being free of flooding.



The location of the site is indicated by the red marker on the NRW flood risk map from Rivers
 NRW flood maps indicate the property is at low risk of flooding from rivers, sea, surface water and watercourses.

Low risk of flooding from rivers

Low means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%).

Flood Risk from the Sea



The location of the site is indicated by the red marker on the NRW flood map from the Sea

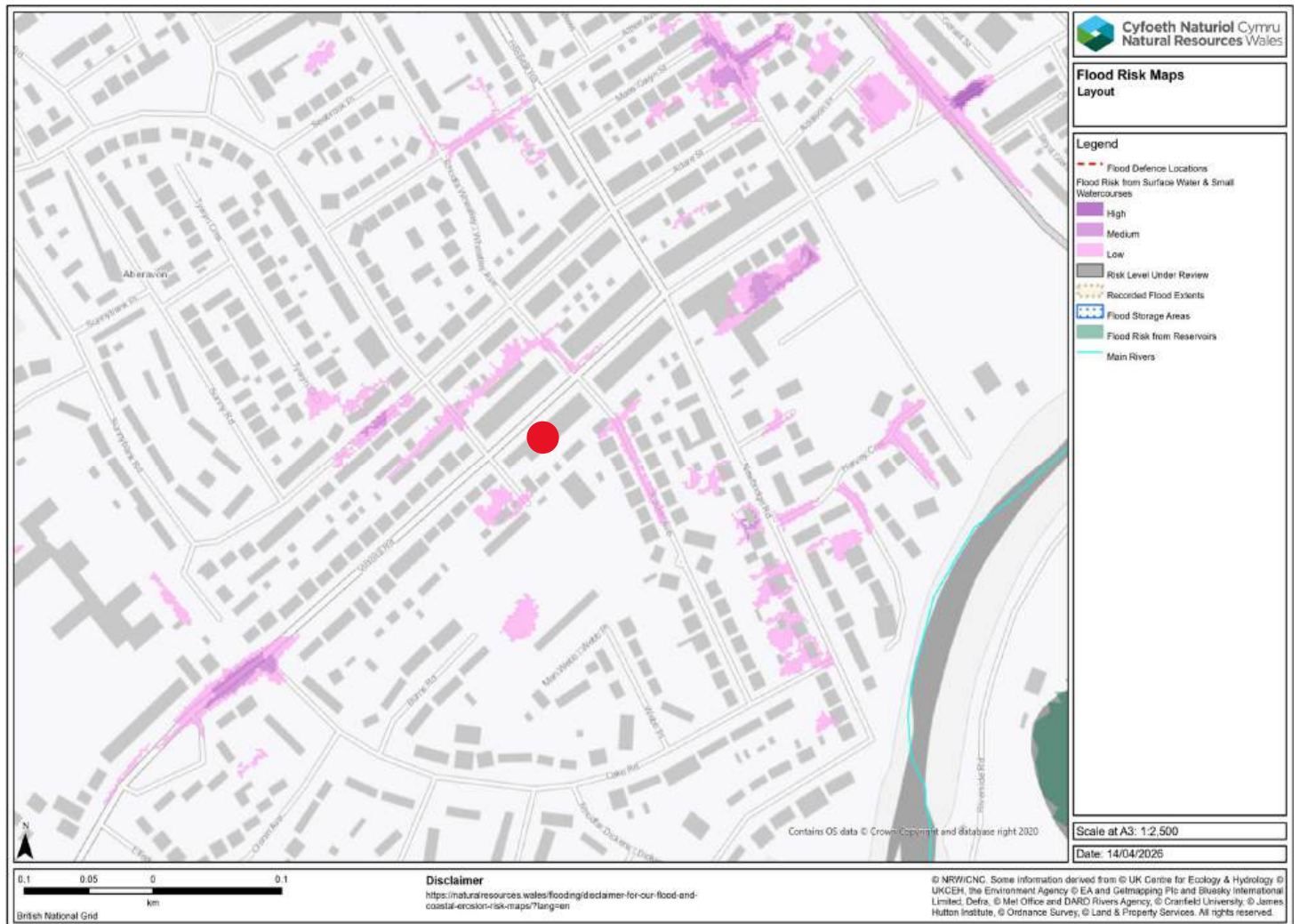
Sea

The sea is located 650m to the South West.

Low risk of flooding from the sea

Low means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (0.5%).

Flood Risk from Surface Water

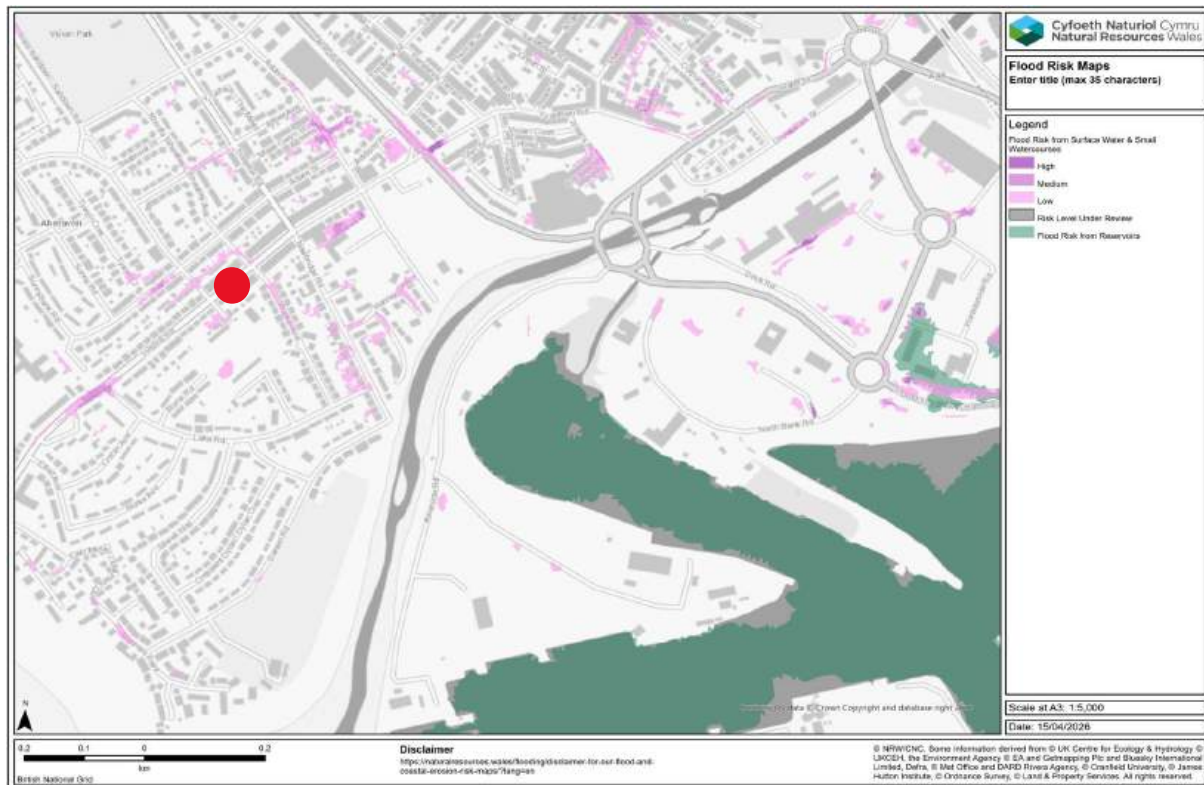


Low risk of flooding from surface water and small watercourses

Low means that each year, this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

Flood Risk from Reservoirs

There is no risk of flooding from reservoirs



Flood Risk from Reservoirs

Existing Private Drainage

The existing property has external SVPs and RWP's which are connecting to below ground drainage system and to the local combined sewerage network. Due to the nature of the development not requiring any alterations to the existing below ground drainage, and no change to the existing building roof and external areas, and with the creation of new soft landscaping to the rear of the property. The drainage has not been investigated further.

There is no increase in surface water run off to the combined system as a result of the proposals.

Public Sewers

DCWW mapping for the location has not been acquired as there are no proposals to change the below ground drainage as part of the development. From an inspection of the site and the local area there appears to only be one set of manhole covers along lane to the rear of the property.

Development and Flood Risk - Flood Risk Zones & Historical Flooding Data

Flood Risk Guidance - TAN15

Proposed Development Category

The proposals include the conversion of the existing commercial property that was originally residential back to residential class. From Figure 2 of the TAN15, buildings used for residential premises have a development category of highly vulnerable development

Flood Zone Classification

The maps.cyfoethnaturiolcymru.gov.uk website provides basic flood mapping data to determine the Flood Zoning and flood risk classifications for the site.

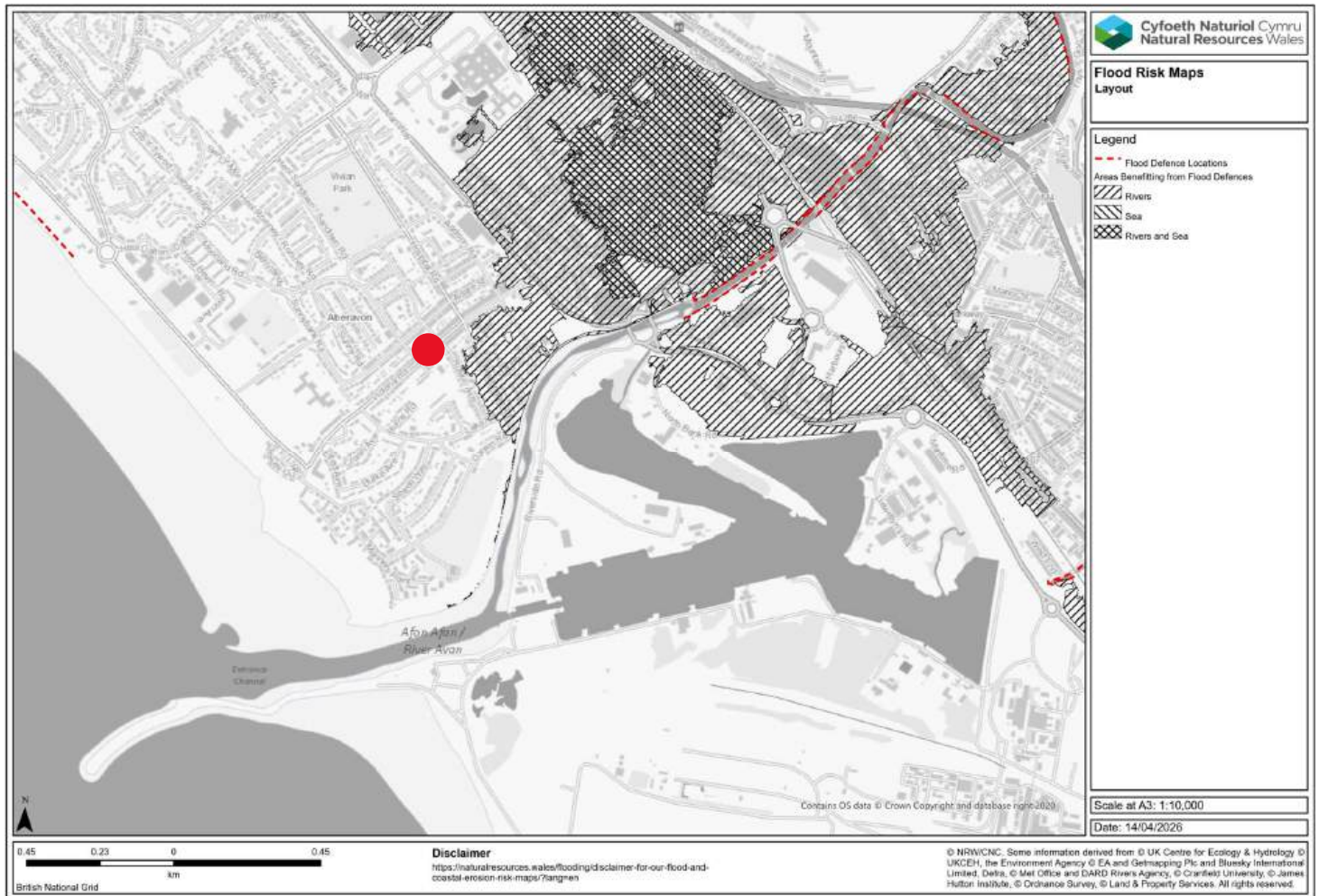
This planning mapping indicates that the property is not within a flood risk zone.

Defended Zones

The property is located in TAN15 defended zones. TAN15 Defended Zones act as a screening tool to enable planning authorities to consider development in areas which may otherwise be mapped as Flood Zone 3 / Flood Zone 2 and could limit development opportunities.

Based on this classification highly vulnerable development is suitable where it is subject to the Justification Test.

Refer to NRW map for defended zones below and Appendix A



Flood Defences

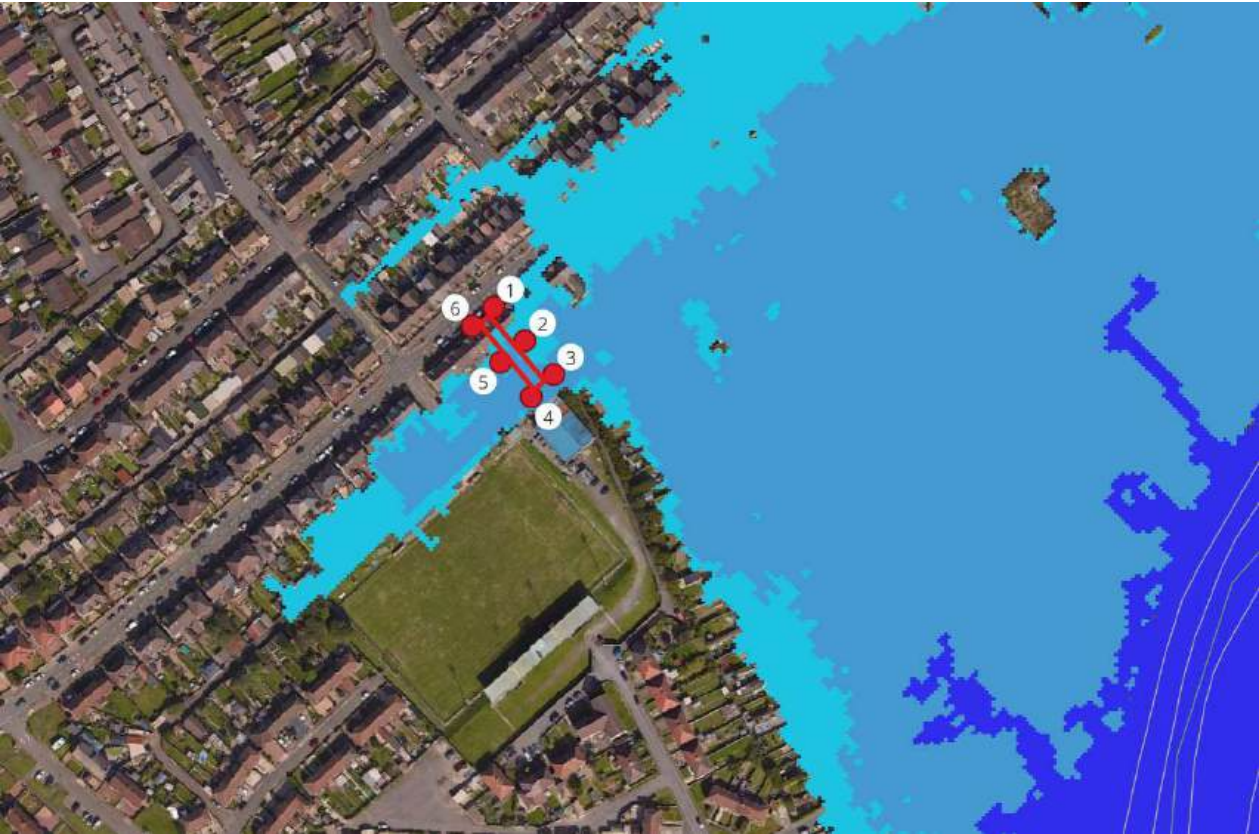
As noted in the sections above, this area of Port Talbot has flood defences in place to protect properties from flooding. The banks of the River Afon have defences in the form of raised banks to protect from flooding.

As the site is benefitting from defences, a breach condition of the defences should still be considered.

Areas Benefiting from Defences (ABDs)

The model was run with existing defences (defended scenario) in place and existing defences removed (undefended scenario). The results of this are provided below.

Undefended Event, 2022T1000, 2122T0200, and 2122T1000



Location 2 & 5 represent the rear of the property.

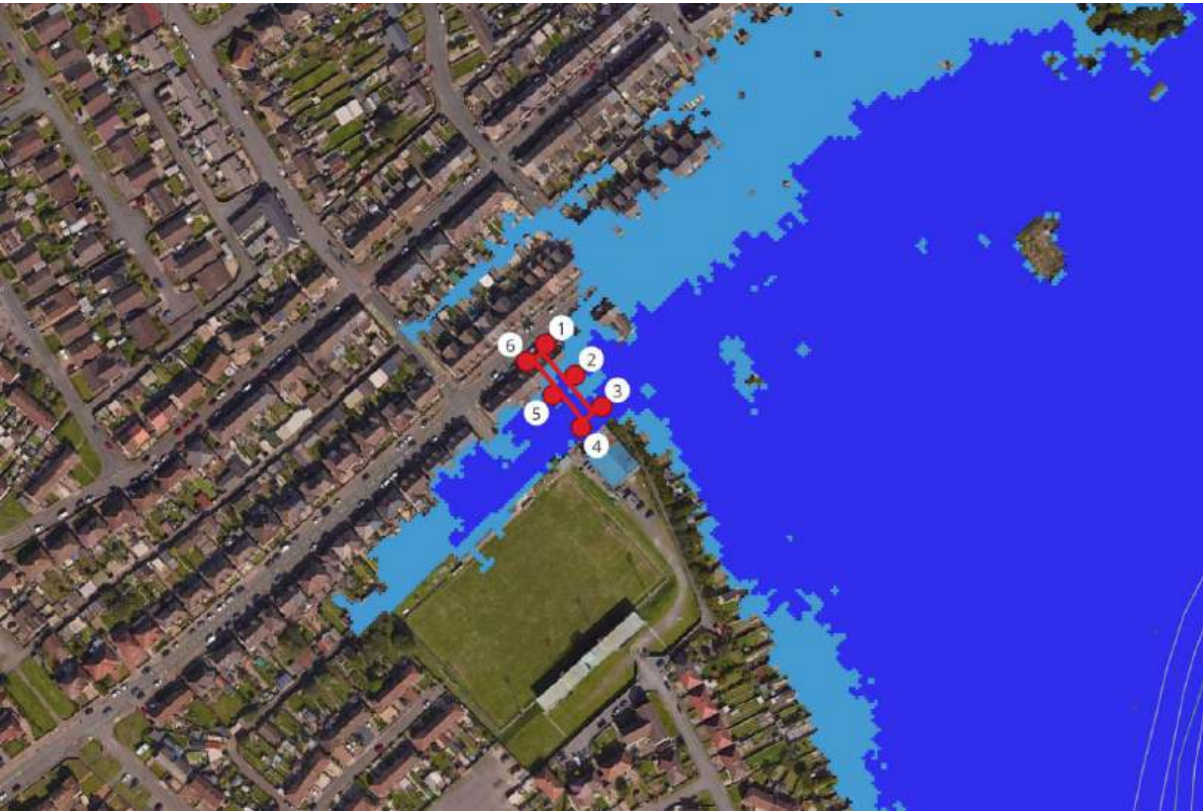
Locations 3 & 4 apply to the rear garden which are at a lower level.

id	PTH_UNDEF_2116_Q0002_2122_T1000_058_FL_height_Max	PTH_UNDEF_2116_Q0002_2122_T1000_058_FL_dept_h_Max	PTH_UNDEF_2116_Q0002_2122_T0200_058_FL_height_Max	PTH_UNDEF_2116_Q0002_2122_T0200_058_FL_depth_Max
1				
2	7.689	0.050		
3	7.688	0.543	7.375	0.230
4	7.689	0.585	7.376	0.272
5	7.689	0.145		

Defended Event, 2022T0030, 2022T0200 and 2022T1000:
Clear of any flooding for these events.



Defended Event, Year 2122T0200 and 2122T1000 (Climate Change)



Location 2 & 5 represent the rear of the property.

Locations 3 & 4 apply to the rear garden which are at a lower level.

Id	PTH_DEF_2116_Q0002_2122_T1000_058_FL_height_Max	PTH_DEF_2116_Q002_2122_T1000_058_FL_depth_Max	PTH_DEF_2116_Q002_2122_T0200_058_FL_height_Max	PTH_DEF_2116_Q002_2122_T0200_058_FL_depth_Max
1				
2	7.692	0.053		
3	7.691	0.546	7.380	0.235
4	7.692	0.588	7.380	0.277
5	7.692	0.148		
6				

Tidal Event – Year 2091 T200 & T1000

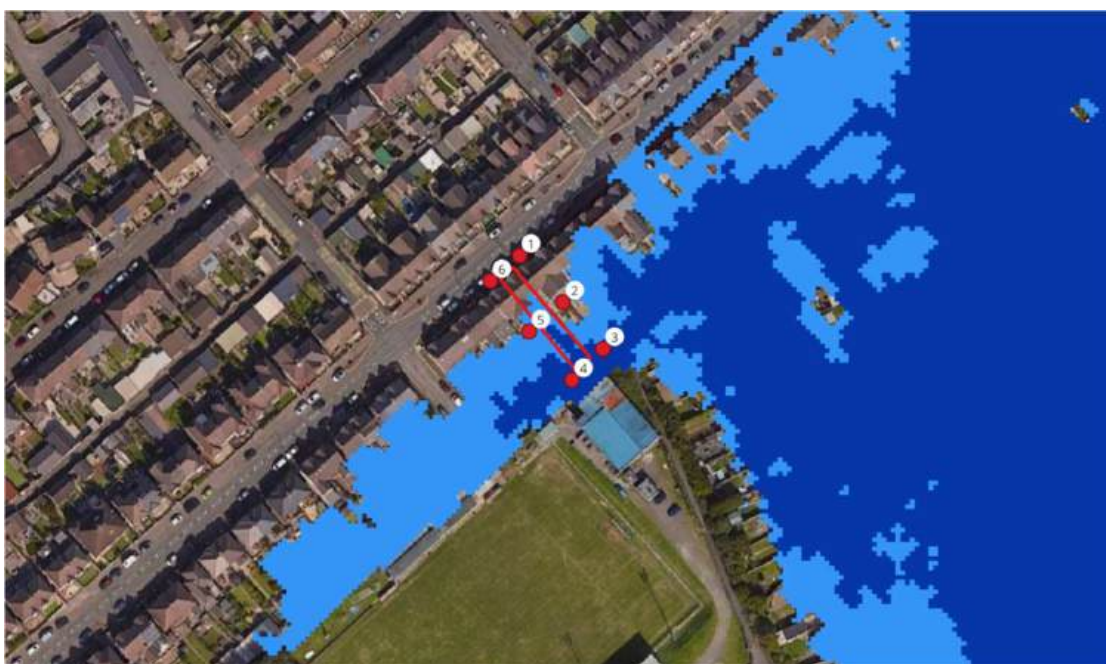
Property remains flood free



Tidal Year 2116 T200 & T1000

Location 2 & 5 represent the rear of the property.

Locations 3 & 4 apply to the rear garden which are at a lower level.



Combined Fluvial Extents

Property remains flood free



Flooding from Groundwater

Given the location of the property within a populated urban area served by positive drainage. The risk of groundwater flooding is considered to be low.

Flooding from Adopted Sewers

The capacity of the adopted sewers in the local area is not known. However, there are noted low level risks associated with flooding from surface water recorded on the Natural Resources Wales mapping. The proposals do not include the change or increase of the existing building shape or size. The introduction of some soft landscaping to the rear of the property reduces the impermeable drain area. Therefore, there is a slight reduction in the runoff from the development and as such no increase in flood risk.

Flooding from Private Drainage

As noted, there are no modifications required to the existing drainage and a small reduction in the drained area. Therefore, a slight reduction in flood risk from the localised private drainage.

Flooding from Surface Water

Surface water flood maps (and risk from small watercourses where present) are also available based on a simplified rainfall event across large areas and ignoring the provision of formalised drainage features which includes public and private drainage but also excludes culverts on watercourses. Therefore, this form of modelling is indicative only and the actual site, and local area, conditions need to be taken into consideration.

The mapping indicates that the site is in a low-risk area of surface water, with only some small extents in the local area which are likely indicative of low spots which have existing formalised surface water drainage features.

There are noted low level risks associated with flooding from surface water recorded on the Natural Resources Wales mapping.

Flooding from Reservoirs, Canals and Artificial Sources

There are no canals within the nearby vicinity of the property that could present a risk to the site.

Reservoir flood mapping for the area indicates that there is no flood risk.

Overall Flood Risk and Conclusion

Key Areas at Risk from Flooding

As noted in the previous sections, the property is not within a flood risk zone.

Flood risk to the property is considered to be low from all sources given the existing flood defences and therefore is suitable for the type of development proposed subject to the Justification Test.

There is also the potential for flooding from a breach in the defences and therefore flood resistance and resilience considerations will be taken into account.

For the undefended scenario 2022 (1000 yr) & 2122 (200 & 1000 yr) there are flood depths of 50-145 to the rear of the property.

For the defended 2022 (30, 200 & 100 yr) the property is free from flooding.

For the defended 2122 (200 yr) and 1000 CC there is estimated flood depths of 50-148mm to the rear of the property.

Tidal 2091 (200 & 1000 yr) the property is free from flooding.

Tidal 2116 (200 & 1000 yr) there is no available data.

Combined fluvial, the site is flood free.

The development is a conversion of an existing residential property back to a house from a dentist practice. Externally the building will remain the same. The floor levels are existing and therefore cannot be raised.

No bedrooms will be on the ground floors.

Therefore, this is not a new development and is inherently tied to the existing property and as such other sites do not need to be considered.

The consideration of suitable mitigation measures are:

- minimal risk to life
- minimal disruption to people living and working in the area
- minimal potential damage to property
- minimal impact of the proposed development on flood risk generally
- minimal disruption to natural heritage

As covered in the assessment of flood risk from different sources, the overall risk to the site is considered low and therefore there is minimal risk to life.

In order to provide protection from possible future event breaches. External doors can be replaced with flood doors to provide full protection.

[Floodtite Flood Doors | UKFDA](#)

The external windows are 0.7m above the external ground level at the front door. The solid stone walls to the property provide sufficient restraint against possible flood waters.

The area is not covered by a flood warning service.

As this is the conversion of an existing building there will be no disruption to people living and working in the area.

The new works to convert the property will be undertaken in accordance with the flood resistance and resilience guidance detailed in CIRIA C790 which should include:

Sockets, switches and meters on the ground floor to be cited as high as possible whilst complying with accessibility requirements to minimise the risk of flood damage.

Pipework and service entries are to be sealed with expanding foam or similar closed cell material, and closed cell material to be used for pipe and service insulation below the flood level.

Plasterboard, where used, is to have a joint 1.0m above the FFL to allow for easier replacement and drying of the structure in the event of a flood.

As there are also no negative impacts on flood risk generally, and no disruption to national heritage, this Justification Test is considered passed by the development.

Based on the details within the report and available flood data, the site passes the Justification Test as it cannot be located somewhere else due to the nature of a change of use.