

Part 2



Figure 7: Depth Map for undefended 1% AEP (1 in 100) year event with allowance for climate change, showing escape route
(Source: NRW)

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. It should be noted that while the site itself does not fall within a NRW flood warning or flood alert area, the applicant should sign up to the nearby Flood Alert Area: North and west Pembrokeshire (Rivers on the north and west coast of Pembrokeshire) flood alert 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 8: NRW Flood Alert 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 5: Flood Warnings

Flood Plan:

It is recommended that the applicant and future owners, occupiers and Landlords of the property 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 proposal is for the change of use of the existing building, as such post development, there will be no unacceptable loss of floodplain storage or increase in run-off from the site.

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.

The development is for the change of use of the existing building, and does not include any additional construction.

The development is for the change of use of the existing building. As such, there will be no change in the impermeable coverage on site post development, and no change to the existing drainage system on site.

Conclusion

Unda Consulting Limited have been appointed by Ciconia Properties Ltd to undertake a Site Specific Flood Consequence Assessment (FCA) for 50 Commercial Road, Port Talbot, SA13 1LG. 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 Proposed part change of use of shop (Use Class A1) and first floor flat (Use Class C3) to a five-person House of Multiple Occupation (HMO) (Use Class C4) together with alterations to fenestration to main building and outbuilding.

The existing site usage is a ground floor shop (Use Class A1) and first floor flat (Use Class C3), which is classified as "less vulnerable development" and "highly vulnerable development" respectively under TAN15.

Post development, the site will remain "less vulnerable development" and "highly vulnerable development" t, as the application is for the Proposed part change of use of shop (Use Class A1) and first floor flat (Use Class C3) to a five-person House of Multiple Occupation (HMO) (Use Class C4) together with alterations to fenestration to main building and outbuilding. There will therefore be an intensification of usage post development, with some residential living accommodation located at ground floor level.

The site is located within Flood Zone C2 (Areas of the floodplain without significant flood defence infrastructure), which means it is defined as land having a less than 1 in 1000 annual probability of tidal flooding.

The site is shown to be located entirely outside of the Flood Zone 3 (1:100 year) extent, but within the Flood Zone 2 (1:1000 year) extent.

The risk would appear to be predominantly fluvial and originate from the Ffwrdd Wyllt 200m to the north west of the site.

Modelled flood levels and flood extents have been received from the NRW as part of a flood data request (NRW ref: AT119274a). The results summarised below are taken from Port Talbot Harbourside Hydraulic Model. The 1 in 100, 1 in 100 + climate change and 1 in 1000 in defended and un-defended scenarios have been provided.

The site is shown to be entirely outside of the present day defended and undefended 1:100 year modelled flood extent, and will therefore remain dry during the modelled 1:100 year scenario at the present day.

The site would be susceptible to flooding, for return periods in excess of the present day 1:100 year event.

For the defended and undefended 1:100 year event with allowance for climate change the site could be inundated with up to 0.15m of floodwater, with a velocity of 0.15m/s. For the defended and undefended 1:1000 year event the site could be inundated with up to 0.15m of floodwater, with a velocity of 0.30m/s.

The modelled outputs provided by NRW show a maximum depth of floodwater on site of 0.15m for a 1:100 year event including climate change. The proposal however is for the change of use of the existing building, and as such it will not be possible to raise the ground floor level above modelled flood levels.

Based on the plans provided, no bedrooms are located at ground floor level, and internal access is maintained from the ground floor to the first floor level. With a ground floor to underside of first floor height of 3.00m (based on the plans provided) the first floor (and therefore all bedrooms) will therefore be dry for the design event.

The depth of flooding on site for the defended 1:100 year event with allowance for climate change is 150mm, with a velocity of 0.15m/s. This is below the tolerable allowances in TAN15.

The modelled flood depth and flood velocity maps provided by NRW shows that an escape route can be provided with a flood depth of below 600mm and a flood velocity of under 0.3m/s for the 1:100 year event with allowance for climate change.

Site users should exit the site and travel west along Commercial Road, then north along Dyffryn Road.

In the case of an extreme flood event without warning, residential occupants and users should seek refuge on the first floor of the building. Internal access will be maintained from the ground floor to the first floor and no bedrooms are located at ground floor level.

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

The development is for the change of use of the existing building, and does not include any additional construction.

The development is for the change of use of the existing building. As such, there will be no change in the impermeable coverage on site post development, and no change to the existing drainage system on site.

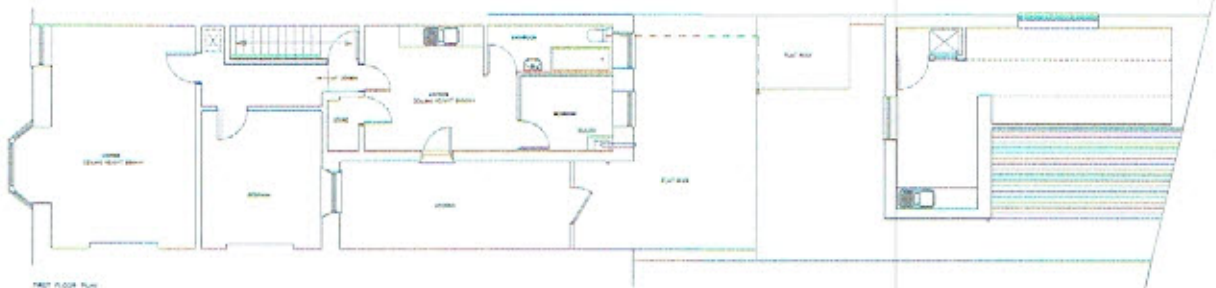
In summary:

- Flood Zone C2 as defined by Natural Resource Wales (NRW).
- Fluvial risk originating from the Ffwrdd Wyllt.
- The site is shown to be entirely outside of the present day defended and undefended 1:100 year modelled flood extent, and will therefore remain dry during the modelled 1:100 year scenario at the present day.
- The depth of flooding on site for the defended 1:100 year event with allowance for climate change is 150mm, with a velocity of 0.15m/s. This is below the tolerable allowances in TAN15.
- Risk of groundwater and sewer surcharge flooding would appear to be low.
- The Natural Resources Wales Surface Water Flood Map suggests that the site lies outside of areas of "High", "Medium" and "Low" risk of flooding from surface water.
- Flood depths do not exceed 600mm at the site or along the escape route, and safe escape as per the requirements of TAN15 can be provided.
- No sleeping accommodation will be located at ground floor level.
- Safe refuge is provided on the first floors of the property.
- Internal access will be maintained to an area of safe refuge above modelled flood levels within the residential unit.
- Flood proofing of the building will be incorporated as appropriate.
- A flood warning and evacuation plan will be implemented post development.

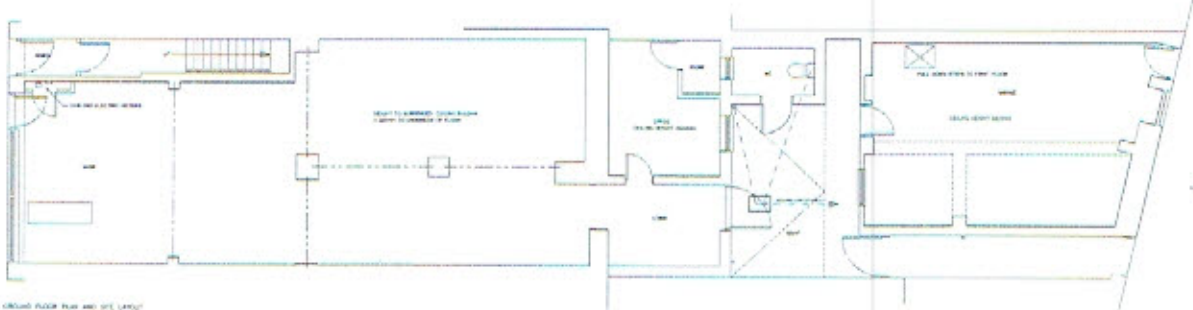
Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Appendix

- Existing and proposed plans.
- NRW Flood Data.



FIRST FLOOR PLAN



GROUND FLOOR PLAN AND SITE LAYOUT

NO.	REVISION	DATE	BY	CHECKED BY
1	ISSUED FOR PERMIT	10/10/2018	BAJ	BAJ
2	ISSUED FOR CONSTRUCTION	10/10/2018	BAJ	BAJ

50 COMMERCIAL ROAD
PORT TOLBOT
SATS TUG
TUG
OWNER NAME

BAJ
BANGKOK ARCHITECTURE JOURNAL

PROJECT NO.	DATE	DESIGNER	CHECKER
4434	10/10/2018	BAJ	BAJ



