

Flood Consequence Assessment

Likely Mechanisms and Sources of Flood Risk

Fluvial Flooding

Fluvial flooding is most commonly caused by intense rainfall causing flash flooding, or following prolonged rainfall upon saturated ground, resulting in overbank flows concealed on the floodplain adjacent to the river. There are no rivers close to the application site and as such it is not considered the proposal will have an impact from fluvial flooding.

Tidal Flooding

The application is in close proximity to the coast and as such could be susceptible to tidal flooding during extreme weather events. It is anticipated that with modern weather and tidal forecasting and the position of the site in relation to the potential source of flooding that a period of at least 4 hrs would be available for completing the tasks outlined below. The site operator would maintain membership with NRW's flood warning system and any local systems which have a particular regard to the potential for tidal flooding.

Ground Water Flooding

Risk of Flooding from Groundwater The local Strategic Flood Consequences Assessment states that there are no specific areas of historical groundwater flooding incidents in the Neath Port Talbot area, where the site is located and overall groundwater is not believed to be a major source of flooding.

Surface Water Flooding

Risk of Flooding from Surface Water Surface water flooding occurs following intense rainfall events, when water is unable to infiltrate into the ground or cannot discharge to a watercourse. The proposal will result in no external works and as such will not have an impact on surface water flooding. The site falls outside the defined area where there are surface water issues.

Risk of Flooding from Artificial Sources

The site is located within outside NRW's risk of flooding from reservoirs dataset.

The depths of flooding throughout the site

The building is existing and no external works are proposed. The building will only be susceptible to coastal flooding which would be gradual and predictable. The building will be used for fitness classes and would not have expensive fit out.

The speed of inundation of the site and rate of rise of floodwaters

As discussed above, speed and rise of coastal flooding is predictable and slow. Early warnings to customers can easily be provided. A flood response plan will be implemented to ensure that future occupiers are aware of the risk of flooding. It is

acknowledged that some aspects of the TAN15 Acceptable Criteria cannot be met once inundation has occurred, however, it is argued that through proper implementation of a flood response plan, customers should be able to leave the area before flooding occurs.

The effects on access and egress and infrastructure, for example public sewer outfalls, combined sewer overflows, surface water sewers and effluent discharge pipes from waste water treatment works

Modern sewer systems are typically designed to accommodate a 1 in 30 year return period flood event, and the road sewer systems were often constructed for a 1 in 20 year return period event. Consequently, storm events with a return period exceeding 30 years would be expected to result in flooding of some parts of the sewer system.

The impacts of the development on natural heritage

Proposal is a change of use application only and will not result in an impact on natural heritage.

The impact of the development in terms of flood risk on neighbouring properties and elsewhere on the flood plain

As stated throughout the report, the proposal is for the change of use of the property only and will not result in physical development which would effect flood risk on neighbouring properties.

Conclusion

The proposal is for a change of use only and would not result in additional physical development. As such the proposal will not result in the creation of additional surface water issues on adjacent sites.

The site will only be at risk from The proposal will adopt a Flood Response Plan to ensure proposed users can leave the premises in a safe manner in the event of a flood.

In terms of the Flood Consequence Assessment, the proposal will result in no external alterations and the proposal will seek to utilise the existing building. As a minimum the internal works will seek to undertake the following design features:

- Existing floor level will be raised.
- All electric sockets will be raised to an appropriate level to mitigate flood damage.
- The proposal will result in no additional hard surfacing and will not therefore result in surface water run off.
- All access points will be retained.

The external hard surfaced areas currently drain to the surrounding docks via pipe work or natural soak away.

The building will be used to accommodate fitness classes and gym equipment and it is not felt the proposal would cause issues relating to coastal flooding.

The application site lies in an area which is designated as a Flood C2 Zone as being at risk of flooding with a higher than 1% probability in any year from fluvial flooding (1 in 100 year events) and 0.5% in any year from tidal flooding (1 in 200 year events).

The site lies adjacent to the coast and it is mostly at risk from tidal flooding. The impact of such flooding on the site would be slow moving shallow water ingress.

As previously discussed, the proposal will be for use as a gym with no physical alterations.

Whilst the site lies in a flood C2 Zone, the likely extent of flooding due to the depths of water being shallow will result in a very low risk to customers and employees. The very nature of tidal flooding would take a significant period of time and would mean the likelihood of personnel being required to escape through flood water as very rare. The site would be evacuated prior to it becoming a safety issue.

Conclusion

The proposed use for the application site is compatible with the local authority's wish to see this area developed and provide employment opportunities. Furthermore there are a number of other potential uses which the site could be used for without planning consent which could be argued to be a far more vulnerable use.

There are no plans to alter the existing drainage infrastructure.

Personnel on site will be trained to adequately cope with a flood event which would be predictable over many hours and even days.

Flood mitigation measures will be utilised with respect the fit out of the building.