A black and grey logo with orange text

Description automatically generated

**Flood Risk Assessment**

**New single storey classroom unit for**

**@Worle**

**58 New Bristol Road**

**Weston-super-Mare**

**Somerset**

**BS22 6AQ**

O.S. National Grid Reference. ST 35452, 62382

September 2023

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**1.0 INTRODUCTION**

**1.1 Commission**

This Flood Risk Assessment has been commissioned by the Management and Trustees of @Worle. This report is in support of a full planning application for the erection of a single storey detached classroom unit at the rear of the existing @Worle building.

**1.2 Objective**

The objective of the Flood Risk Assessment is to table a viable flood defence and surface water drainage strategy for the existing site and the current development proposals. The report includes an assessment of the flood risk as required by the Environment Agency as consultees to the Local Planning Authority.

**1.3 References**

Current and historic information related to the site is used to build the overall picture.

The reader is directed to the comprehensive Flood Risk Assessment dated 2011 prepared by Jubb Consulting Engineers Ltd for Willmott Dixon Construction Ltd allied to the Planning Application 11/P/2229/RG3 for the initial development of the @Worle building.

This Flood Risk Assessment has used the finding of that report as the basis of the commentary.

**2.0 THE SITE**

**2.1 Site Location**

The National Grid reference for the classroom site is 35452, 62382

X Easting 335452 Y Northing 162382

What3Words:- passes.agreed.manliness

**2.2 Site Facilities**

The site is presently occupied by @Worle. The existing building is a single storey timber framed structure built circa 2012. The building is multi-functional. There are extensive car parking facilities and grassed areas around the building. The 3G hockey / football pitch is part of the current facility.

Within the @Worle building there is a kitchen for the daily “Meals on Wheels” operation. There is a pottery plus classrooms used by the Brandon Trust each weekday. Also there is a hall and gym facility operated by @ Worle gym for community use. This is available every day of the week. Worle Community School, use the hall and gym facility at prescribed times during the week. The 3G all weather hockey / football pitch is part of the facility and is available for public hire.

The @Worle building was modified in late 2019 to provide a gym extension and coffee area. (North Somerset Council Planning Consent reference 18/P/4861/FUL refers. North Somerset Council Building Control approval 19/B/0410/FP also refers)

**2.3 Site Access**

Access to the site is from New Bristol Road (B3440) on a shared driveway with Worle Community School. The site is located in a predominately residential area.

**2.4 Geology, Topography and Hydrology**

The site is located on the edge of the large low lying flood plain that stretches inland from the coast and incorporates a large proportion of North Somerset extending east and North east towards Clevedon covering the settlements such as Banwell, Congresbury and Yatton.

The topographical survey (Drawing 23.258 PL01) illustrates the levels across the site. There is a natural fall of some 400mm from east to west. The finished floor level of the @Worle Building is 6.46 AOD.

The strategic Flood Risk Assessment Level 1 for North Somerset Council defines the site as being in the River Banwell catchment. There are local historic rhyne drainage systems nearby. The River Banwell is some 4KM from the site

The site and surrounding area are low lying and there is deemed to be a potential flood risk from Banwell or Uphill catchment.

**2.5 Site Proposals**

It is proposed to purchase and erect a small refurbished timber framed single storey classroom unit to the rear of the existing @Worle building. The classroom unit is some 63 square metres gross internal floor area. Correspondingly this represents a “Minor Extension”

There is no change to the parking arrangement. (During “Out of school” times the large car park in Worle Community School is available for community use.) The all-weather pitch is to remain unaffected in this proposed development.

Drawing 23.258. PL03, part of the planning application documentation, shows the proposed plan and elevations plus site and location plans.

**3.0 Flood Risk Assessment**

**3.1 Environment Agency (EA)**

The Environment Agency (EA) flood map indicates the site is within a Flood Zone 3. Correspondingly a Flood Risk Assessment is required to support the Full Planning Application for the new detached classroom unit.

**3.2 Site Flood Risk and Vulnerability Classification**

Flood Zone 3 – by definition this is an area with a high probability of flooding. The zone comprises land assessed as having 1 in 100 or greater annual probability of fluvial (>1%) or a 1 in 200 or greater annual probability of tidal flooding (>0.5%) in any year.

The site classification for the original @Worle Building under Table D2 of Planning Policy Statement 25 (PPS25) was a Water Compatible development (Outdoors sports and recreation). Under Table D2\* of Planning Policy Statement 25 (PPS 25) the existing @Worle building falls within the less vulnerable classification (Buildings used for .... assembly and leisure).

**\*NB** The government have since changed the use classification of D2 to F(1)(a). The proposed detached single storey classroom unit is deemed to fall within that classification.

**3.3 Local Development Policy Compliance**

North Somerset Council Replacement Local Plan Adopted March 2007 sets out the Council’s policy on flood risk in the area. Policy GDP/4 addresses the flood risk and sustainable water management. This Flood Risk Assessment is deemed to comply with the requirements of that Policy and associated updates.

**3.4 Strategic Flood Risk Assessment**

A Strategic Flood Risk Assessment (SFRA) from Royal Haskoning was commissioned by North Somerset Council in 2008.

That SFRA gave specific information regarding River Banwell and its catchment. The SFRA identifies Worle as an area in which 90% of the population reside within the Environment Agency Flood Zone 3

**4.0 FLOOD RISK SOURCES**

**4.1 Possible sources of flooding**

The site is subject to:-

* Fluvial flood risk from the Uphill Great Rhyne and River Banwell in a tide lock situation.
* Fluvial risk from nearby rhynes in an extreme flood event
* Tidal flood risk should recent flood defence infrastructure fail or overtopping
* Surface water run-off due to
  + Increase in surface water from development
  + Increase in surface water from climate

The Flood Risk Assessment for the initial @Worle development set out a detailed assessment methodology to address the above.

**4.2 Site solutions**

From investigation:-

* There was deemed to be no potential flood risk from tide lock on the River Banwell
* Fluvial flooding from the nearby rhynes is deemed unlikely to impact on the site. This is confirmed by the statements in the North Somerset SFRA for the Uphill and Banwell catchments.
* There is potential for a 1 in 200 year tidal event to inundate the site. There is deemed to be a “danger for some” within the overtopping and the breach scenarios.

The present @Worle building has been constructed in compliance with the findings determined from that methodology.

The current @Worle building design was based on:-

* The site would remain in dry state in a 100 year return period fluvial and fluvial / tide lock situation.
* In the original design the building floor level was to be set above 6.3m AOD (300mm or so above existing site levels) In actual terms the finished floor level was constructed at 6.46 AOD
* There was deemed to be potential long term for overtopping the existing sea defences leading to inundation at shallow depths. The installation of an EA automated telephone warning telephone system plus the adoption of a flood management plan were deemed sufficient counters.
* The maximum storm water discharge rate from this small classroom building (Roof area some 63 sq metres) is minimal and not more than 5 litres/second.

The proposed detached classroom unit is deemed to comply with the same conditions applicable to the @Worle building.

**4.3 Proposed conditions**

The calculations from the previous Flood Risk Assessment for the site indicate a 100 year return period fluvial flood level of less than 5.7m AOD in a critical tide-lock event.

The site levels in the area of development are approximately 5.7 - 6.0m AOD

The finished floor of the new detached classroom unit will be the same level as that of the existing @Worle building namely 6.46 AOD.

**5.0 Summary**

The extension scheme as proposed features:-

* Site topography maintained at current levels
* Finished floor level in line with existing floor level of the @Worle building
* A sustainable drainage system to control surface water runoff and avoid localised surface ponding
* Extension of the flood risk management plan for the @Worle site/buildings to cover the classroom unit. This to include escape routes and evacuation procedures.
* The continuation of the Sustainable Urban Drainage Systems (SUDS) methods as adopted for the exiting building to ensure future discharges do not exceed existing ones.
* The surface water will be discharged through the existing underground surface water drainage system.

**END**

14 September 2023

**REFERENCE**

Documentation submitted with this application

Drawings

* Topographical survey 23.258 PL01
* As existing - floor plan, site and location plans 23.258 PL02
* As proposed - floor plans, elevations, site and location plans 23.258 PL03
* North Somerset Council @Worle Land Transfer Plan dated 20 September 2016

Reports

Design and Access Statement dated 14 September 2023