



LEAVER CONSULTANCY

Flood Risk Assessment

Alverton CP School

Proposed Pump Trail

Client **ALVERTON CP SCHOOL**

Toltuff Crescent
Penzance
Cornwall
TR18 4QD

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1.0 INTRODUCTION

- 1.1 Leaver Consultancy was commissioned by Alverton CP School to provide Planning services for the proposed bicycle pump trail in the existing school field.
- 1.2 This flood risk and drainage statement intends to assess the existing and proposed flood risk to the development and explain the rationale behind the proposed drainage design strategy.

2.0 EXISTING SITE CONDITIONS

Site Location

- 2.1 The site is Alverton CP School, Toltuff Crescent, Penzance, Cornwall, TR18 4QD. The site is in the ward of Alverton within Penzance. A site location plan is provided 0165B AP-01 Site Location Plan.

Existing Site Description and Topography

- 2.2 The proposal is for a bicycle pump trail at the edge of the school field and adjacent soft landscaped area. The soft landscape is grass and trees.
- 2.3 The proposed bicycle pump trail is smaller than one hectare. This site is currently a grass field.
- 2.4 The site is not affected by sources of flooding other than rivers and the sea, for example surface water drains.

3.0 SOURCES OF FLOODING

- 3.1 The site is within Flood Zone 1.
- 3.2 The site is not shown to be at risk of fluvial flooding, as it falls outside of any functional flood plain and is outside the Gov.uk indicative flood plain for extreme events, therefore the site is considered to be in Flood Zone 1.
- 3.3 The nearest open channel watercourse is Larriggan River is circa 100m to the northeast and Newlyn Coombe River is circa 800m to the southwest. The site OD is 35. The OD for Larriggan River is 5 and Newlyn Coombe River is 10.
- 3.4 The site is not shown to be at risk of tidal flooding or flooding from reservoirs. The site is not shown to suffer from surface water flooding. There are no known issues with groundwater flooding. Gov.uk flood maps for the site is provided 0165B Flood Map for Planning.

Existing Hydrology

- 3.5 No geotechnical assessment has been undertaken.
- 3.6 Groundwater was not encountered during the site visit in preparation of the Planning application.

4.0 DEVELOPMENT PROPOSALS

- 4.1 The works include the proposed bicycle pump trail.
- 4.2 The track base is water permeable – made up with subsoil on site, before laying a water permeable weed proof membrane and 60mm crushed aggregate sub base (20mm scalping/ 40mm MOT type 1) or similar and compacted. The finished track surface will be covered with a compacted specialist pump track specific SMA Asphalt wearing course. The Asphalt Surface to be laid to a minimum 60mm depth sculpted into transitions and convex berm shapes before compacting with compactor plates.
- 4.3 As well as water permeable the track drainage is assisted by run-off into linear gravel soakaway – the riding surfaces will be cambered to encourage rain water into French drains or limestone soakaways into the existing grass. French drains shall be installed in wet areas if required.
- 4.4 Considering the track surface it is not necessary to calculate a “rubble filled” soakaway.

5.0 DRAINAGE STRATEGY

Surface Water Run off Hierarchy Review

- 5.1 In order to manage the developed peak flow from the site, the drainage hierarchy of solutions has been considered and reviewed below:

- Infiltrate to ground

No infiltration testing was undertaken at the site, however it is considered that the permeability of the sub soils was adequate for the low volume of storm water, therefore infiltration has been considered suitable for surface water discharge.

- To a surface water body

There is an existing watercourse but not within the site ownership and not within an acceptable distance to consider as a discharge point for the proposed works.

- To a surface water sewer

Not considered at this point due to risk of ecological damage to hedges and trees for connection to drainage within the adjacent highway.

- To a combined water sewer

Not considered at this point due the above.

Foul Water

- 5.2 No foul water drainage is required.

6.0 CLIMATE CHANGE

- 6.1 NPPF and the new Central Government Guidance on Climate Change Allowances, dated April 2016, provide recommended national precautionary sensitivity ranges for peak rain flow intensities.
- 6.2 The water permeable track surface and large perimeter to area ratio should not result in flood risk even with a climate change allowance.
- 6.3 For storm events that exceed the 1 in 100 year event, or any overland flood flows resulting from the failure of the positive drainage network, the flood flows would fall towards the north and east to discharge into the watercourse and highway as with the existing pre-developed site.

7.0 FUTURE SYSTEM MAINTENANCE

- 7.1 The water permeable surface and onsite soakaway will remain private and thus will be fall within the existing school management arrangements and will be required to ensure that the surfacing and on-site soakaway is kept in a good state of repair and regularly maintained.
- 7.2 Maintenance comprises monitoring the performance and if necessary install a sediment/ debris trap.

8.0 CONCLUSION

- 8.1 The site of this proposed bicycle pump trail is outside the Environment Agency's indicative 1 in 1000 year flood plain and therefore flood flows do not encroach onto the developed site.
- 8.2 There are no foreseeable risks to the site from groundwater nor flooding from sewers.
- 8.3 The proposed water permeable surface and on-site soakaway will be formed as part of the proposed bicycle pump trail.
- 8.4 All external levels will be designed to fall away from the track where possible.
- 8.5 We believe that this site can be developed without any risk to the development and other properties downstream from surface water drainage.