

TAVISTOCK PRE-SCHOOL DEVELOPMENT

FLOOD RISK ASSESSMENT

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Certificate No. FS 21845



1.0 INTRODUCTION

- 1.1 Engineering Consultancy (EC) have been commissioned by Hampshire County Council to prepare a Flood Risk Assessment (FRA) for the proposed new construction work that is to be constructed on Tavistock Pre-school off of Broadacres, Fleet, Hampshire.
- 1.2 The site under consideration is referenced on the location plan in figure 1 bounded by a red line. There are two schools on the overall site which are managed independently of each other.
- 1.3 Along the eastern boundary, but separated by a public foot path is an ordinary water course and the north eastern corner of Tavistock School appears on the Environment Agencies Flood Map and lies within both flood zones 2 & 3 and therefore a Flood Risk Assessment is required to support the planning application.
- 1.4 These zones are shown in Figures 3 & 4 of this report. The zones are very pixelated and the river flood model may not have taken the earth embankment between the school and the ditch, into consideration during production of the flood prediction map.
- 1.5 The main objectives of this report is as outlined in the Planning Policy Statement 25 (PPS25) & National Planning Policy Framework (NPPF), is to assess the proposed development with regards to its suitability for the type of development proposed in the area planned. It goes on to study whether surface water, foul water, ground water, river or coastal flooding could affect the development.
- 1.6 This document identifies the following :-
 - Potential source of flooding:
 - The probability of flooding:
 - Justification for the development of the site in terms of the Sequential Test:
 - Provide a conceptual surface water drainage strategy that can be agreed in principal at Planning stage.

2.0 SITE DESCRIPTION

2.1 Site Location

- 2.1.1 The cumulative area for both school sites is approximately 2.7 ha and is bound to the north , east & south by residential areas, to the west by woodland. The east also has main river running along it boundary adjacent to a footpath, flowing south to north. This is known as



the Sandy Lane ditch, although it is a deep concrete culvert along this entire boundary length.

- 2.1.2 Each school has its own separate entrance with All Saint gaining access at the cul-de-sac at the end of Leawood Road and Tavistock at the end of Broadacres All Saints C of E School is not part of this application and therefore has not been considered in this report apart from generic statements. The main Tavistock school likewise, with the pre-school proposal being a separate entity from the main school, which may consider a separate application for its own works in the future.

2.2 Site Description

- 2.2.1 The site slopes gently from the south west to the north east where there is a slight low spot, where, in the corner a pond exists. This area is fenced off to create a natural zone with the provision of seating and a decked viewing area overlooking the pond. . This pond is within the Environment Agencies flood zones 2 & 3.
- 2.2.2 The two schools are at the opposite ends of the site with associated hard standings, play grounds & staff car parking. A grassed field and woodland separates the two.
- 2.2.3 Sandy Lane ditch (Culvert), runs along the entire eastern boundary.

2.3 Existing Surface Water Management

- 2.3.1 Both schools are independently drained, from survey record information obtained Tavistock Infant School collect rain water via a piped system and outfalls into the existing water course.
- 2.3.2 It is assumed that as a main river is situated close by, infiltration would be unlikely and that the existing systems should be CCTV'd to establish both service condition & structural stability before connecting any new drainage from the proposed pre-school to it.

2.4 Geology & Hydrology

- 2.4.1 The Geology on site comprises Alluvium and Bracklesham Group Camberley Sand and are described as clayey sand and sandy clay and so it may not be suitable for infiltration in to the ground as mentioned earlier.
- 2.4.2 Ground water was encountered at a shallow depth of around 1.2-1.6m below ground level



- 2.4.3 The Camberley Sand Formation is classified as a Secondary A Aquifer, Secondary A Aquifers are characterised by permeable layers capable of supporting water supplies at a local level rather than a strategic scale and in some cases forming an important base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers. The site does not lie within the Environment Agencies Source Protection Zone (SPZ)
- 2.4.4 There are no Ground water abstraction licenses issued within 1 KM of the site

2.5 Strategic Flood Risk Assessment & Sources of Flooding

- 2.5.1 As set out in the National Planning Policy Framework, the aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding, where ever possible. The Strategic Flood Risk Assessments refine information on the probability of flooding, taking other sources of flooding and the impacts of climate change into account. They provide the basis for applying the Sequential Test on the basis of the flood zones
- 2.5.2 If the SFRA indicates the need to apply the Exception Test then the scope of the SFRA will widen to consider the impact of the flood risk management maintenance scenarios. Where no SFRA is available then the Environment Agencies flood zones will be used for the Sequential Test
- 2.5.3 The nearest water course is the Sandy Lane Ditch and the area around the pond & this application is designated to be within flood zones 2 & 3.
- 2.5.4 The site is not near the sea and so the potential for flooding by the sea is negligible.
- 2.5.5 Sewer overload hasn't been reported and the site is likely to be at the head of the public sewer systems. There are no Public Sewers shown crossing the site, therefore the potential for flooding from surcharge is negligible.
- 2.5.6 Whilst ground water is reasonably high, this is more due to the location of a nearby main river than due to the potential of ground source issue
- 2.5.7 Infrastructure failure, there are no reservoirs, canals or similar structures in the direct vicinity of the site.
- 2.5.8 As the pre-school is to be located within a flood zone 3 an Exception Test is required to be carried out. An agreement in principal has been reached previously with the Environment Agency subject to conditions see Appendix 5.



2.6 Exception Test

- 2.6.1 For the Exception test to be passed at this site, it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk.
- 2.6.2 It must be demonstrated how the development will be safe, without increasing flood risk elsewhere and where possible reduce flood risk overall.

3.0 PROPOSED SITE DESCRIPTION

3.1 Drainage Strategy

- 3.1.1 The proposed location for the pre-school classrooms is on the very edge of the Environment Agency flood zone 3 map, however this area benefits from the protection of an earth bank and this defence will not have been taken into account, when modelling the predicted flood zones.
- 3.1.2 To provide benefit to the neighbouring community an area of flood compensation land can be provided by enhancing the existing pond within the 'natural' area, by increasing in size or providing a wet area allowing additional long term flood storage being similar or greater to the area of encroachment of the new building. This storage can be contained within the existing fenced area preventing children from entering during times of flooding and encouraging more diverse species.
- 3.1.3 The floor level for the temporary classroom can be set some 500mm above the expected water level with its ramped access path falling away towards the existing path.
- 3.1.4 The structure itself is to stand on stilts, so in practise no real encroachment of the flood zone has taken place as predicted flood water can continue to use the space beneath the building.

3.2 Storm Water Drainage

- 3.2.1 Works are to comprise of the provision of a mobile type unit to enhance the existing facility which will be removed from its current location behind the existing school, without major interference to their existing infrastructure.
- 3.2.2 The surface water from the hard standing area together with the roofs discharge into the stream



3.3 Foul Water Drainage

- 3.3.1 There is little in the way of major increase in pupil size just an enhancement & re-sizing of an existing provision, therefore, post construction there will be no increase in peak foul flows leaving the school catchment therefore no changes to the foul drainage is envisaged.

4.0 CONCLUSION

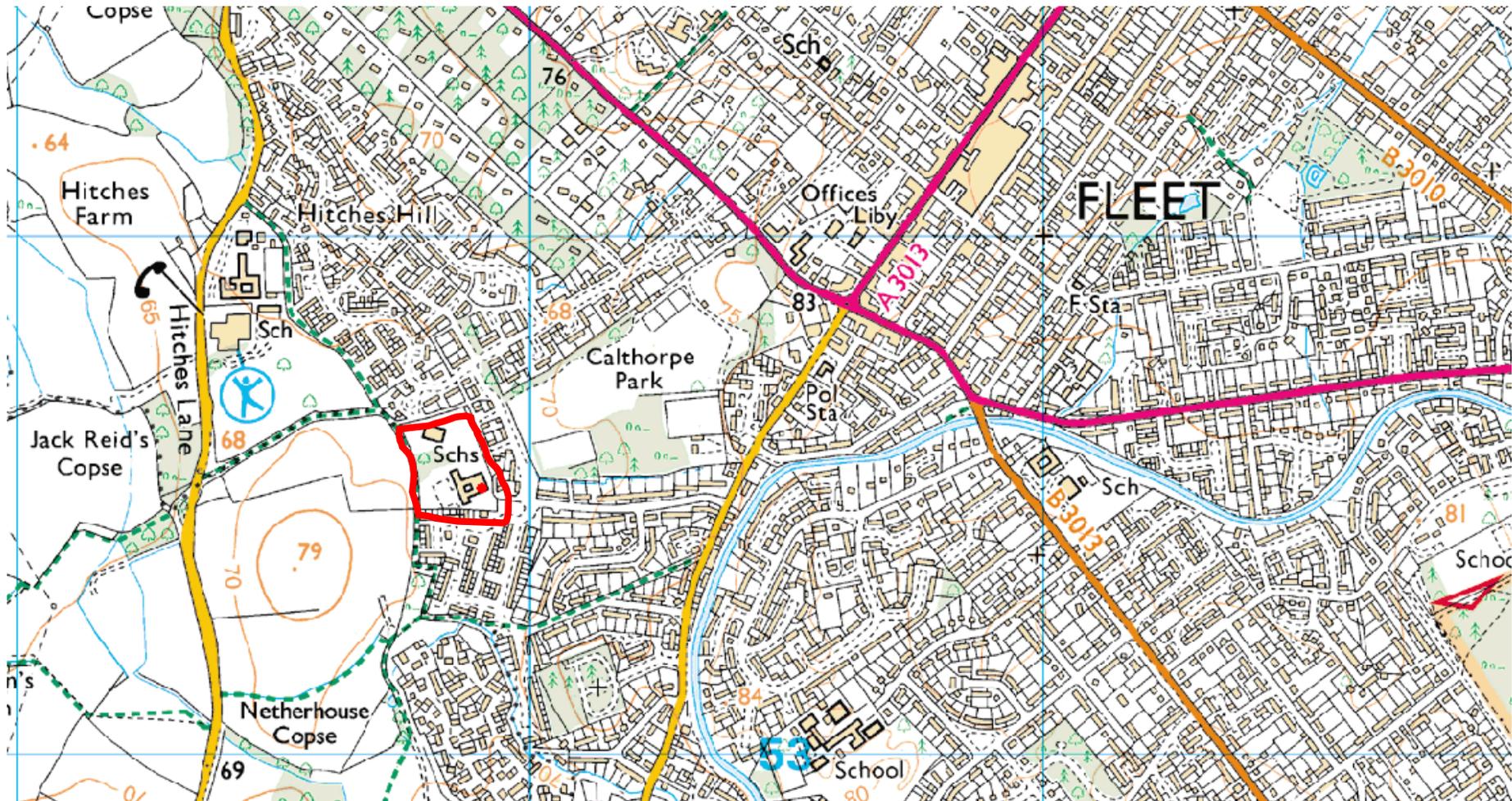
- 4.1.1 The majority of the site is within flood zone 2/3, however, it is proposed to re-site and replace an existing facility with a mobile type unit used as a pre-school to an area encroaching on land in a flood zone 2/3.
- 4.1.2 It is possible to provide long term mitigation measures, despite the non encroachment in practice of the flood zone. Floor levels and access to it are to be set such that it complies with the Exception Test in that during times of flooding safe egress and access can be maintained with the floor level of the structure being at least 300mm above the expected flood water level.
- 4.1.3 The structure is to be on stilts enabling flood waters to use the area beneath.



Figure 1

Site Location Plan





Tavistock & All Saints Schools – Location Plan

Location Map 1:10,000

Figure 2

Existing School Site Plan

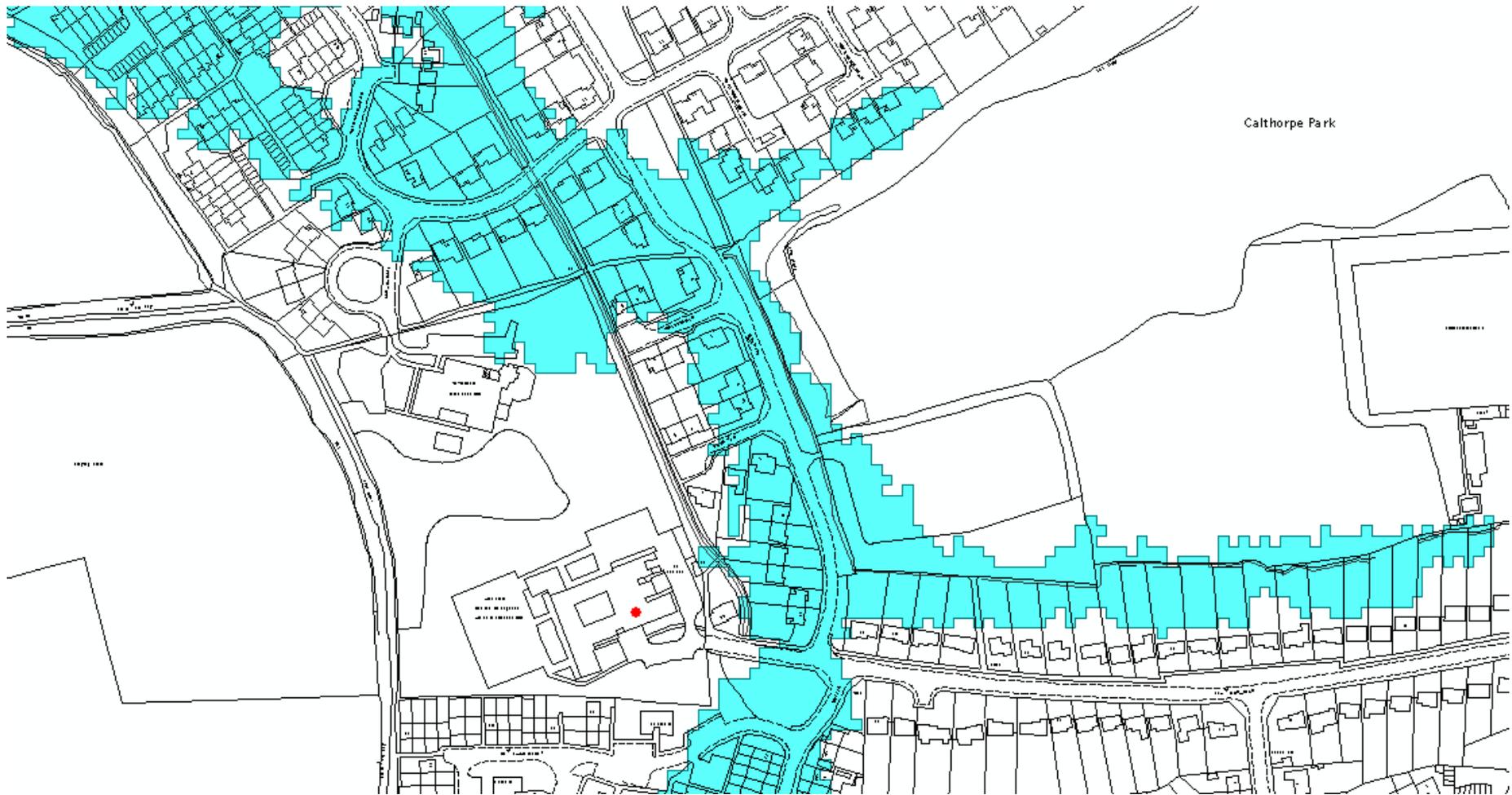


Tavistock & All Saint Schools - site map

Scale 1:2,500

Figure 3

Flood Zone 2 Map

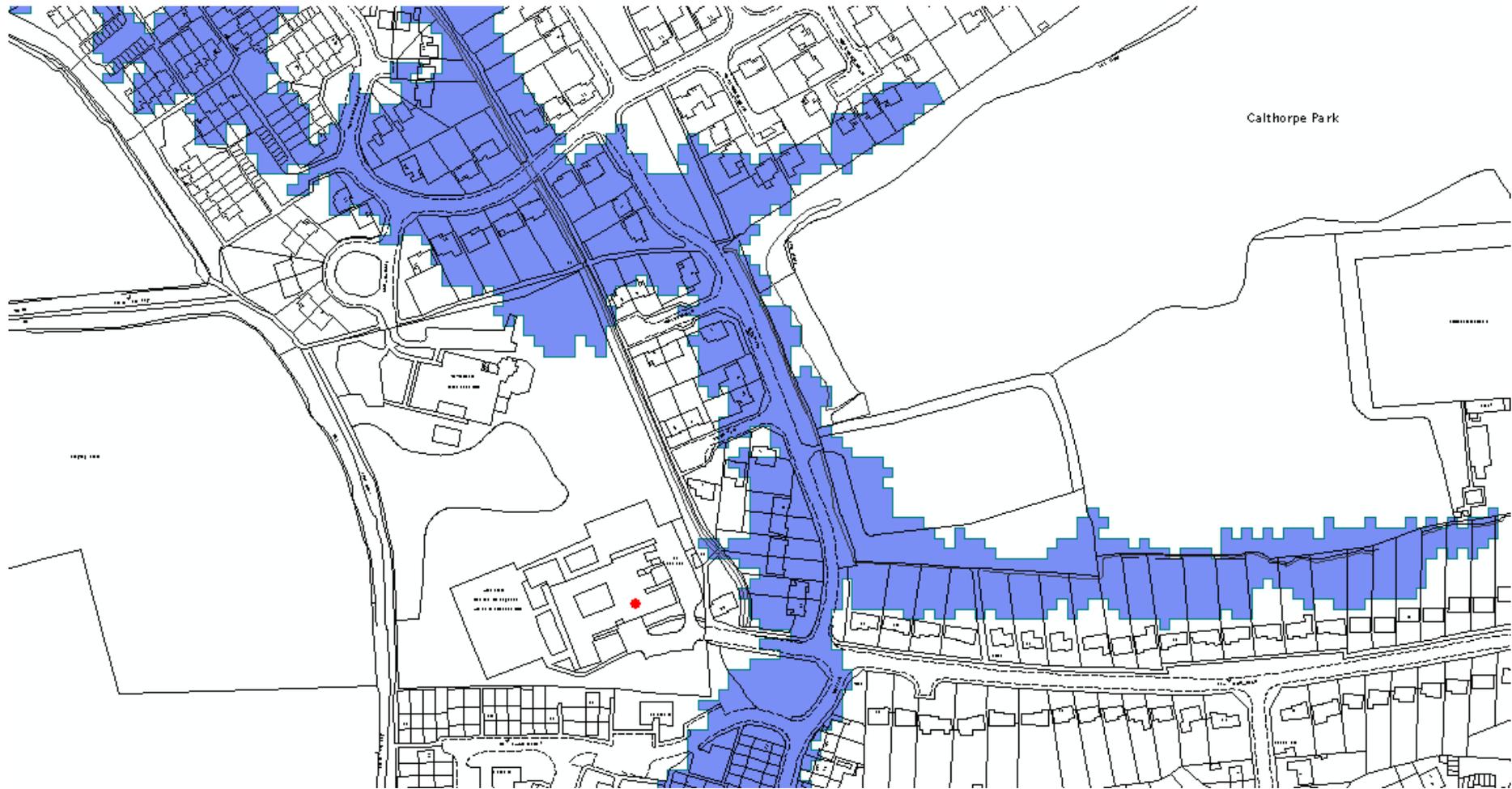


Tavistock & All Saints Schools – Environment Agencies Flood Map – Zone 2

Scale 1:2,500

Figure 4

Flood Zone 3 Map



Tavistock & All Saints Schools – Environment Agencies Flood Map – Zone 3

Scale 1:2,500

Appendix 5

Environment Agencies

Conditional Approval

