

**Proof of Evidence by Councillor Simon Pike  
on Outline Sustainable Drainage Strategy Issue 4  
Land at Lawrences Lane, Thatcham, West Berkshire**

Change of use to 7 no. Gypsy/Traveller pitches comprising 7 no. static caravans,  
7 no. day rooms, 7 no. touring caravans and associated works

**Appeal Reference: APP/W0340/W/22/3292211**

(West Berkshire Council Planning Application No: 21/02112/FUL)

**1 Introduction**

1. I am Councillor Simon Pike, a Thatcham Town Councillor for the Thatcham West Ward, elected in May 2019. I became a member of its Planning and Highways Committee, and have been the Chairman of the Committee since May 2021. I am a Chartered Engineer and member of the Institution of Engineering and Technology. I have a BA(Hons) in physics from the University of Oxford.
2. I have more than thirty years' professional experience in writing and interpreting technical standards and regulations. Between 1999 and 2016 I was Chief Engineer, Regulatory and Spectrum for Vodafone Group, representing it in national and international meetings, either as a company representative or as a member of the UK delegation. This included presenting and scrutinising computer modelling relating to radiowave propagation.
3. As a Chartered Engineer, I confirm that the opinions in this Proof of Evidence are my own views. I believe that they are within my competence as a practicing engineer, as they do not rely on any specialist knowledge or experience of drainage or hydrology.
4. This document provides observations on the Outline Sustainable Drainage Strategy Issue 4<sup>1</sup> prepared by SLR Consulting and dated January 2023, which Thatcham Town Council received at 8.02am on 23<sup>rd</sup> January.
5. The drainage strategy document is unclear about several aspects of. I had hoped that these might be clarified in a revised site layout plan, which the Town Council received at 8.05am on 25<sup>th</sup> January (TDA.2692.02 (Rev.B, dated 23.01.23). However, this layout plan just confuses matters further, because it is in many important respects inconsistent with the proposed drainage strategy.
6. Issue 4 of the Outline Sustainable Drainage Strategy is a significant improvement over Issue 2 that was the version originally for consideration by the Inquiry and the original version that formed part of the Wheatcroft Consultation (no drainage strategy was provided as part of the original planning application). However, the storage volume still appears to be inadequate, because of the many days that it will take for stored water to discharge into

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<sup>1</sup> This document states "Issue 4" on the page header, which I believe to be correct, although the cover page states "issue 3".

the sewer system. Over such a long period, there is likely to be additional rainfall, which will significantly increase the required storage capacity. This was indeed the case for the serious floods in Thatcham in 2008.

7. There are also still inconsistencies in the information, and unanswered questions.

## 2 Comments on the proposed drainage strategy

### 2.1 Definition of extreme event

8. The analysis in the strategy document appears to make the assumption that the extreme event can be treated in isolation. However, the extreme event can occur within a longer period of heavy rainfall, as demonstrated by the flooding that occurred in Thatcham in 2008<sup>2</sup>:

#### “10-15 January 2008

76.9mm rain fell over six days, culminating in a heavy rainstorm on 15th January, concentrated over a few hours and resulting in 26.6 mm of rain.”

This is below the predicted rainfall for a 1 in 100 year event for Thatcham, which is a depth of 72mm over a 12 hour period<sup>3</sup> (data from 2013).

9. The sustainable drainage system therefore needs to accommodate both the extreme event and rainfall that occurs in the days and weeks before and after the event. It can do this either by having additional capacity or by discharging at a sufficiently high rate that the effects of the extreme event and other rainfall are not cumulative.

### 2.2 Flow control chambers

10. The drainage strategy is based on a discharge flow of 0.7 litres per second and a storage volume of between 358 and 498m<sup>3</sup> (section 5.9 of the document). 0.7 litres per second equates to 60m<sup>3</sup> per day, so it would take between six and eight days for the full storage volume to be discharged at this rate.

11. The two flow control chambers between pitches 4 and 5 and between pitch 7 and the detention pond are described in the assumptions for the Microdrainage simulations as orifice devices with elevation differences of 70mm and 60mm. As shown in the graph<sup>4</sup>, the flow of an orifice flow control chamber increases with the head, and therefore reduces as the drainage tanks empty.

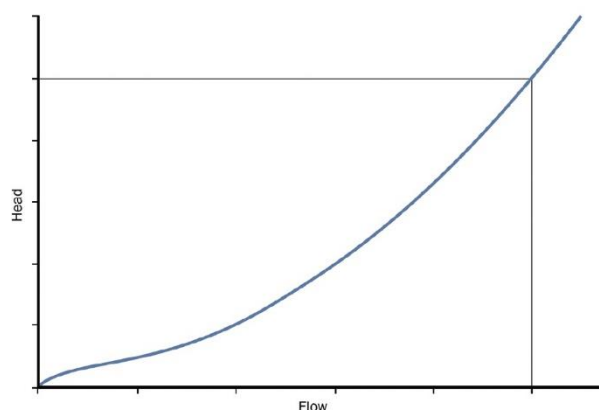


Figure 28.13 Head–discharge relationship for a simple orifice plate (courtesy Hydro International)

<sup>2</sup> Flooding in Thatcham; July 2007 – September 2008, a year in perspective; Final Report

<sup>3</sup> Rainfall runoff management for developments, Environment Agency Report – SC030219; October 2013; Figure A3.2

<sup>4</sup> Reproduced from CIRIA SuDS Manual, Chapter 28; Inlets, Outlets and Flow Control Systems

12. It is unclear whether the Microdrainage analysis takes account of water already in the storage system at the start of the event (there is a parameter 'durations', with values up to 7 days, but it is not explained when this starts).
13. Therefore, when an extreme event occurs, the storage system could still be partially full with water from previous rainfall, and its capacity would be reduced accordingly. It appears that this may not have been taken into account in the analysis.

### **2.3 Other inconsistencies, ambiguities and omissions in the Drainage Strategy Issue 4**

14. The level surface of the permeable paving above the detention tanks is now horizontal. As a result, the slope of the remainder of the permeable paving will be increased to around 10%. This has a significant impact on the layout and landscaping of the site.
15. The depth of drainage crates is shown as 400mm in the legend, but 800mm in the typical section and in section 5.9 of the report. The width of the tanks is shown as 5000mm on the typical section and in the report, but text on the plan says "Tank 'Y' 15M X 7M". It needs to be clarified which are correct.
13. The emergency spillway for the detention basin appears to be at an elevation of 111.7m AOD. However, the natural level of the ground immediately to the west of the swale is at a similar or lower elevation in some places. The construction of the swale is not specified, so the path of overflow could therefore be from the swale rather than the spillway.
16. Section 5.14 of the report, titled "Construction Considerations", says:

Where mobile homes are to be sited over, or in close proximity to, the proposed drainage crates, consideration must be given to the loading imposed by the supports to the mobile home. In general, mobile homes are supported on a number of pillars and these should be founded below the invert level of the drainage crates. The location of the mobile homes and supporting pillars may have to be adjusted slightly to accommodate the drainage crates.

The supporting pillars are not shown on the diagrams, and their volume has not been taken into account in the capacity of the sustainable storage. As the mobile homes are a temporary and not part of the planning application, it is unclear how the locations of the supporting pillars for them could be defined.
17. The impermeable membrane will be perforated under and around the mobile homes by 28 pillars, 7 sewage pipes, 7 mains water pipes and a number of manholes, which will need to be made water tight.
18. The plan shows the drainage crates butting up to the line of the hedge, but the typical section shows a kerb and concrete support extending beyond this. At the southern end, the swale is immediately adjacent to the drainage crate. There is therefore no soil in which to plant the hedge.
19. The Microdrainage analysis in Appendix 6 uses the version of FEH rainfall model from 1999, which is described on the FEH website as 'legacy', rather than the more recent versions of 2013 or 2022 (the ReFH2 analysis in Appendix 5 uses FEH13). Given that the understanding

of extreme weather events due to climate changes has advanced considerably in the last 23 years, this is likely to be result in an under-estimate.

20. There are no foul drainage connections shown for pitch 7.

### **3 Inconsistencies between the Drainage Strategy and Site Layout Plan**

21. The revised site layout plan (TDA.2692.02 (Rev.B, dated 23.01.23) is a minor revision of the site layout plan that formed part of the Wheatcroft consultation (TDA.2692.02 (Rev.A, dated 12.08.22). The only significant differences appear to be the removal of the proposed pedestrian link and the shortening of the swale.

22. This revised site layout plan conflicts with the outline drainage strategy in several fundamental respects:

- The site layout plan does not show any drainage features on the individual pitches, such as the drainage tanks.
- The specified surfaces of the pitches and access road are completely different – permeable paving for both parts in the drainage strategy, but pea shingle over a compacted open sub-grade for both parts on the layout plan.
- The shapes of the attenuation ponds are completely different.
- The revised site layout plan does not show the cut-off drain.

23. There are several other inconsistencies.

30<sup>th</sup> January 2023