

Project name	Salt Box		
Design note title	Response to Arun Engineers Comments 16th November 2021		
Document reference	SAL-HYD-TN-C-GLOS-0005		
Author	Gareth Jones		
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1.1 Introduction

The purpose of this Technical note is to respond to Arun Engineers comments on the 16th November 2021, relating to Condition 12 and 16 of Planning Conditions BE/160/21/DPC for Land at Salt Box West of Shripney Road Bognor Regis: -

"Engineers Comments Regarding Condition 12 - Several pipes have been constructed very slack. For example the pipe downstream of SW-503 is a 450 diameter pipe, and has been constructed at 1:636. This is not suitable. All pipes should achieve 1m/s velocity.

Engineers Comments Regarding Condition 16 - The verification report has been prepared by Hydrock, the designer. This therefore does not meet the requirements of the condition for the report to be completed by an independent engineer."

1.2 Condition 12

Although a very small number of the pipes have been installed at a shallower gradient than designed, such minor discrepancies are not unusual when dealing with larger schemes such as this. I have assessed these during the course of my independent review and do not regard this change as material. Their falls still allow a fully functional storm water system, operating for 1 in 100-year storm events and future climate change, without causing flooding on or off site. The as-built falls have been inputting into the calculations and models and show that the system works. While steeper gradients would certainly result in more efficient self-cleansing velocities, larger storm events will still achieve > 1 m/s velocity, and annual cyclic maintenance will ensure pipes are in good working order without blockages forming. The additions of catchpit chambers, sumps in gullies and linear channels and permeable paving, will reduce the amount of debris forming in the piped system. I do not envisage any issues with this and risk of flooding due this arrangement is extremely small. The system built and design checks remain in my professional view materially in accord with the originally agreed drainage design.

1.3 Condition 16

I, the independent assessor, Gareth Jones, has had no prior involvement in any design work for this project. The design consultation was undertaken entirely by the Bristol office and that the Gloucester office was asked to undertake this review to ensure independence from the design team. As an Incorporated Civil Engineer of the ICE, I am personally required to meet the Institute's standards of professionalism and code of conduct. Therefore, to assess other designs independently within Hydrock, a large multidisciplinary engineering practice with several offices is not an unusual situation. I confirm I obtained an independent and separate client instruction to review the submissions. The Gloucester office received a separate fee to carry out these works. The independent review was important to confirm the efficacy of the drainage system, provide the appropriate analysis in order for the planning condition to be discharged, to be available for the client, and if necessary, future owners and occupiers and to meet funding requirements

I was initially provided with a package of information to review allowing an appropriate assessment to be made in addition to the as built survey which had been undertaken by a highly regarded and independent contractor in this specialist area. From an initial examination I identified a series of queries upon which I reverted to the design team for answers. This is highlighted and documented in the Independent Verification Report SAL-HYD-R-C-GLOS-0001_C05. I did not consider that physical inspection would be necessary in light of the detailed as built surveys and photographs provided.