

Katherine Ashworth  
Lead Local Flood Authority  
Post Point CHN 215  
Hertfordshire County Council  
County Hall, Pegs Lane  
Hertford SG13 8DN

Date: 21<sup>st</sup> June 2022

Dear Katherine,

**RE: 6/2021/2857/MAJ – TEWIN ROAD, WELWYN GARDEN CITY, AL7 1BD**

Following your objection letter dated 30<sup>th</sup> May 2022, please see responses to the comments you raised.

*“1. We understand it is proposed to drain to the existing surface water sewer at 47.8l/s. We are pleased the applicant proposes an attenuation tank to provide surface water attenuation, however the applicant should seek to discharge the entire site at greenfield runoff rates. Therefore, additional attenuation capacity may be required in order to reduce the discharge to greenfield runoff rates.”*

BWB response: Drainage design has been revised to reduce proposed discharge from 47.8l/s to the Greenfield runoff rate of 11.4l/s as calculated using MicroDrainage. This provides a minimum betterment of 88% for the 1 in 1 year, up to 97% for the 1 in 100 year + 40% CC. Attenuation storage volume has been increased to a total of 835m<sup>3</sup> as a result.

*“2. We are pleased the applicant has provided detailed post-development network calculations for all events up to and including the 1 in 100 year + 40% climate change event. However, we would request the following clarifications. Half drain down times have not been provided. Please could the applicant provide half drain down times for all proposed attenuation features and all storm events, noting that they should not exceed 24 hours.”*

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SE1 9SE

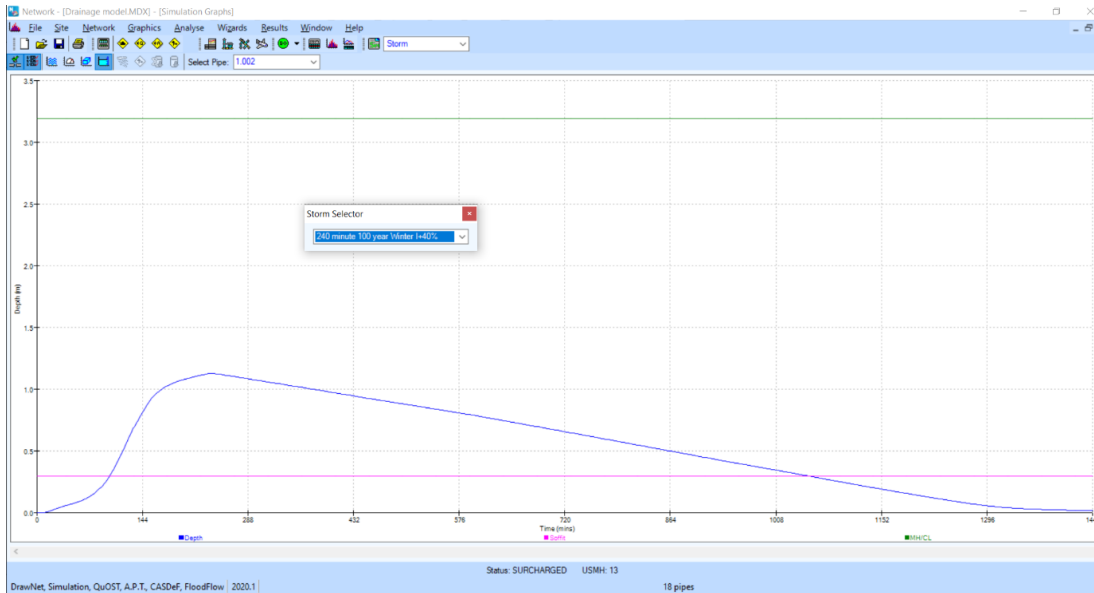
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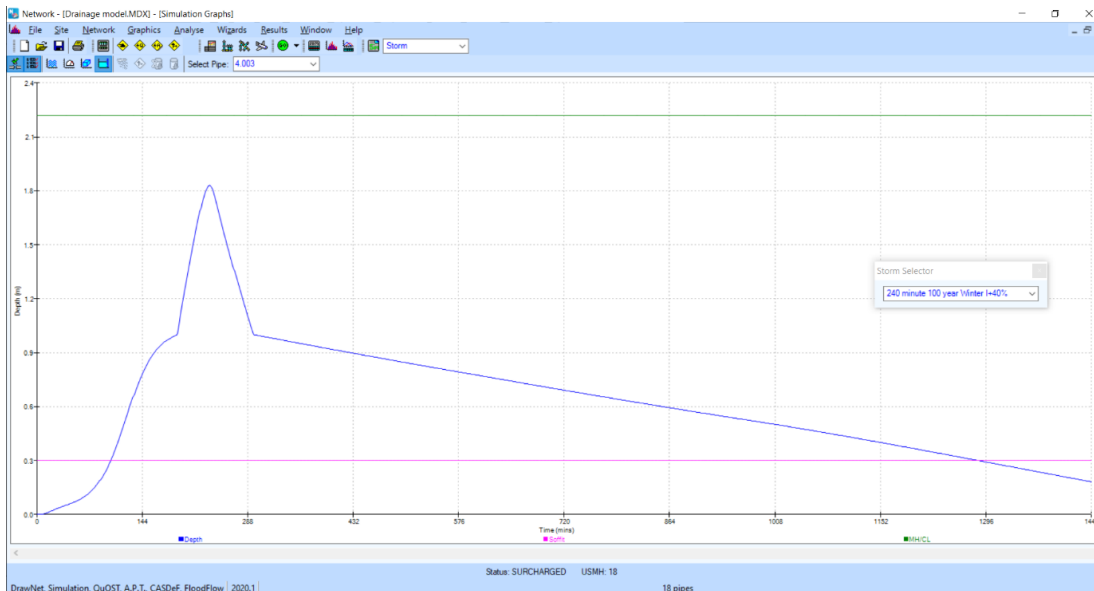
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BWB response: Half drain times are only provided for infiltration structures on MicroDrainage. We run the critical storm event over a period of 24 hours and it shows the tanks will be mostly empty within 24 hours as shown below:

- For pipe 1.002 downstream of the larger attenuation tank for the critical 1 in 100 year storm event (240min):



- For pipe 4.003 downstream of the smaller attenuation tank for the critical 1 in 100 year storm event (240min):



*"Furthermore, we note that a flooded volume of 13.93m<sup>3</sup>, 0.235 m<sup>3</sup>, 21.311m<sup>3</sup>, 6.434m<sup>3</sup> and 4.774m<sup>3</sup> is indicated to occur during the 1 in 100 year + 40% climate change storm at pipe numbers S1.001, S1.003, S1.005, S2.000 and S2.001 respectively. While we would not object to this in principle, we require the applicant to provide the location, depth, volume and area of this flooding on a drainage plan. We would recommend that this flooded volume is reduced as far as is practicable."*

**BWB response:** Following revised design and calculations, minimum flooding still occurs for the 1 in 100 year + 40% CC. This will be contained within the site and has been mapped on a new drawing ref. TRW-BWB-GEN-XX-DR-C-0520\_Site Flood Mapping.

*"3. We note that the proposed drainage strategy states that the final required attenuation storage volume will be determined during the detailed design stage. This suggests that the drainage scheme is subject to change. As this is a full application where the layout of the development is determined with regards to existing and proposed utilities, the drainage scheme needs to be final and not indicative. We will advise the LPA once a drainage scheme is agreed, an appropriate compliance condition is applied should planning permission be granted. It is therefore important that certain details of the drainage scheme are agreed at full planning stage."*

**BWB response:** The drainage design has now been developed to a suitable level of detail and will be issued for tender. There might be some minor coordination elements during the construction phase but the strategy will now be fixed subject to approval from the LLFA.

*"In addition, in Table 6.1 of the Drainage Strategy it is proposed to incorporate channel drain sumps and catchpit manholes in the proposed SuDS features however, the location of some proposed SuDS measures, pipe runs, discharge points and informal flooding is not included on this final drainage layout. This should be updated and appropriately indicated on a drawing."*

**BWB response:** This is now shown on the revised drawing ref. TRW-BWB-GEN-XX-DR-C-0500\_Proposed Drainage Layout.

*"4. The proposed surface water drainage scheme should be designed to cater for all rainfall events up to and including the 1 in 100 year + climate change event. There should be no flooding up to the 1 in 30 year rainfall event. Where this occurs this will be considered as 'informal' flooding and this should be managed within the site, demonstrating it will not increase flood risk to the site and the surrounding area. The extent and depths of these areas should be shown on a plan in relation to the proposed site levels.*

*Any flooding of the drainage system above the 1 in 100 year + climate change event is considered as an exceedance event and it should be shown on a development and drainage layout plan where these areas are and where surface water will flow, demonstrating there will be no increase in flood risk to the surrounding area. Capacity within upstream pipes, channels and filter drains should be accounted for at this stage."*

BWB response: We can confirm there is no flooding for the 1 in 30 year storm events. For the 1 in 100 year + 40% CC, minimum flooding still occurs. This will be contained within the site and has been mapped on a new drawing ref. TRW-BWB-GEN-XX-DR-C-0520\_Site Flood Mapping. Beyond the 1 in 100 year + 40% CC, any flood exceedance will runoff to the main road as indicated on the same drawing.

*"5. It is important to understand when developing the drainage strategy, who will be adopting the proposed drainage features, associated infrastructure, and any discharge mechanisms from the site. Those adopting and maintaining the drainage may have their own requirements which should be considered as early as possible in the drainage design process. As this is the detailed design stage, we require the Operational and Maintenance manual for the development site."*

BWB response: Details about the maintenance are covered in our SDS report ref. TRW-BWB-GEN-XX-RP-C-0001\_SDS and our Drainage Specifications ref. TRW-BWB-ZZ-XX-SP-C-0500 which will be included in the O&M manual. The final O&M document is usually made available towards the end of the project when all design information has been finalised. Therefore, the O&M manual can't be shared at this time but the SDS and Drainage Specifications will now be fixed subject to approval from the LLFA.

*"6. The applicant should demonstrate that sufficient water quality treatment stages have been provided, referring to the CIRIA SuDS Manual Simple Index Assessment based on the use of the areas being drained and proposed measures. There is no SuDS management and treatment proposed for the industrial site with large areas of car parking and roads/service yards. Therefore, the applicant should fully consider the inclusion of robust SuDS management and treatment for all road or parking areas on site as we will not accept road or parking areas to drain directly to the network with no treatment. For the proposed parking areas, we would expect sufficient treatment to be provided in line with the SuDS Manual pollution index assessment. It is very important that an appropriate treatment train of surface water runoff will be provided prior to any discharge from the development site to limit the potential for contamination off site."*

BWB response: It is proposed to incorporate the following elements to deal with runoff quantity and quality:

- Full retention Separators have been specified to capture oil spills in the event of an accident
- Channel drain sumps and catchpit manholes will be used extensively to help filter sediment from first flush
- Lined Geo-cellular Attenuation tanks for storage
- Lined Gravel Drains have been specified around buildings to treat runoff from roofs and footways

All surface water from trafficked areas including road, parking and yard will go through a full retention oil separator which are adequate to mitigate the high pollution hazard level on industrial sites as they are able to treat the full flow (as opposed to the first 5mm of rainfall

using a by-pass separator) and remove most TSS, Metals and Hydrocarbons from the surface water.

I trust the above will provide adequate justification to overcome your objections.

Yours sincerely,

Jean Bénard  
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Associate Director

