

Director of Environment & Infrastructure:  
Mark Kemp



Clare Howe  
Welwyn Hatfield Borough Council  
The Campus,  
Welwyn Garden City  
Herts  
AL8 6AE

**Post Point CHN 215**  
**Hertfordshire County Council**  
**County Hall, Pegs Lane**  
**HERTFORD SG13 8DN**

Contact Julia Puton  
Email [FRMConsultations@hertfordshire.gov.uk](mailto:FRMConsultations@hertfordshire.gov.uk)

Date 09 December 2019

**RE: 6/2019/1788/COND – Former Shredded Wheat Site, Broadwater Road, Welwyn Garden City, AL8 6UN**

Dear Clare,

Thank you for re-consulting us on the above application for the submission of details pursuant to condition 5 (Surface water Discharge) 6 (Drainage System) 52 (Provision of open space/play space) 35 (Delivery of accessible Housing) 13 (Highways) 37 (Vehicle access Point to Pall Mall Site) 50 (Refuse Storage Arrangements) on planning permission 6/2018/0171/MAJ, at Former Shredded Wheat Site, Broadwater Road, Welwyn Garden City, AL8 6UN.

In relation to conditions 52, 35, 13, 37 and 50, this is something we cannot advise on, as it does not relate to flood risk or surface water drainage.

As mentioned in our previous letter, we note that the proposed, updated drainage strategy does not comply with the originally approved plans for drainage sub-catchments and phasing arrangements. Therefore, the applicant should update phasing and drainage sub-catchments plans for the entire Former Shredded Wheat Site with precise, estimated maximum allowable discharge for each phase and sub-catchment. We have noticed that major changes relate to drainage sub-catchment 1 and 2.

**Condition 5 states:**

*No development of any phase or block shall take place until confirmation of the final surface water discharge rates and connection points into the surface water sewer for that phase or block have been submitted to, and approved in writing by the Local Planning Authority. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.*

*This shall include the following:*

1. *Surface water discharge rates and connection points into the public surface water sewer for each future sub-catchment included within the entire development site.*
2. *Confirmation of the capacity study results and agreement for the proposed discharge rates and connection points from each future sub-catchment for surface water sewer network undertaken in line with Thames Water recommendations.*
3. *Limiting the surface water run-off generated by the critical storm events so that it will not exceed surface water Greenfield run-off rates (or as close as possible rates) for the relevant rainfall events for the 1 in 1 year event, the 1 in 30 year event and the 1 in 100 year event including plus 40% of climate change allowance. If Greenfield run-off rates cannot be achieved, strong technical justification should be provided. As a minimum 50% betterment in run-off rates for each sub-catchment should be provided following the relevant rainfall events including the 1 in 1 year event, the 1 in 30 year event and the 1 in 100 year event including plus 40% of climate change allowance. No increase of the risk of flooding off-site should be identified.*
4. *Confirmation of attenuation volumes required for each phase identified within the development proposal. Final results should be appropriately split between future sub-catchments identified within the drainage strategy.*

**REASON:**

1. *To ensure the facilitation of required attenuation volumes in line with the prior agreed discharge rates.*
2. *To prevent the increased risk of flooding, both on and off site.*

We advise the LPA that the information submitted in support of condition 5 in relation to surface water for phase 1 does not comply with the requirements set out in condition 5. Therefore, we recommend to the LPA not to discharge condition 5 for phase 1.

As we have highlighted in our previous letter, an updated, detailed drainage plan has been submitted. We understand that new phasing areas and new sub-catchment approach have been proposed. Therefore, the proposed drainage strategy will only be approved if the applicant update the phasing and drainage sub-catchments plans for the entire site with precise, estimated maximum allowable discharge for each phase and sub-catchment. This should include all proposed phases on the development site. No additional information has been submitted by the applicant to overcome this.

**Detailed plans for overall site and Phase1 have been issued showing the proposed discharge rates and catchments. Information referenced in the above comment is in abeyance on the planning portal.**

**Information Required.**

- **The planning portal on shows pre-planning drainage information relating to Phase 1. There is no sitewide general arrangement drawing showing all proposed phases and catchments. Please could this be forwarded if available?**

In the submitted response to point 1 the applicant has indicated that phase 1 of the proposed development is comprised of sub-catchment 1 and part of sub-catchment 2. Therefore, as both sub-catchments depend on each other, at this stage to approve discharge of condition for phase 1, we require full drainage details of sub-catchment 1 and sub-catchment 2. This should include full modelling, final detailed drainage layout and full details of the proposed SuDS features.

Drawings and details Issued 19.10.13.

90001 Site Plan

90003 Phase 1 Plan

98010 Exceedance plan

98001 Proposed Drainage Detail Sheet 1

98002 Proposed Drainage Detail Sheet 2

98003 Proposed Drainage Detail Sheet 3

Drainage Strategy 066571-CUR-00-XX-RP-C-0001-V01

Micro Drainage Calcs: Outfall SW38, SW08 & SW23

Moreover, in the same point the applicant has indicated that 3 surface water outfalls are being proposed with a total discharge rate of 12.91 l/s. However, based on the drainage drawing that the applicant referred to 066571-CUR-00-00-DR-C-90003 "PROPOSED DRAINAGE LAYOUT (PHASE 1)" we were only able to identify 2 outfalls from the site for phase 1. Therefore, this should be clarified by the applicant. In addition, based on the response to Thames Water dated 28/11/2019, the applicant has indicated that a maximum of 6.1 l/s of surface water discharge for phase 1 has been proposed. This is inconsistent with the information submitted to the LPA before and the additional information included in the letter to the LLFA. This should be clarified. The final area and drainage sub-catchments included in phase 1 of the development have to be identified, clarified and full drainage details should to be provided.

We are proposing Three discharge points for surface water at three different locations for the entire site (See drawing 066571-CUR-00-00-DR-C-98010)

SW08: 6.95l/s Catchment 1

SW23: 5.96l/s Catchment 2

SW37: 6.95l/s Catchment 3

Please could you clarify where the figure: 12.91l/s has been taken from? The rate provided has been approved by Thames Water and is consistent with drawing submitted as part of the S106 application and conforms to the 5l/s/ha required by Thames Water and approved as part of the S106 agreement.

Catchments have been added in the afore mentioned drawing for clarity.

#### Information Required.

- As mentioned previously, the pre-planning site wide drainage general arrangement is required to understand where the quoted discharge rate of 12.91l/s is from.

Point 2 of condition 5 requests confirmation of the capacity study results and agreement for the proposed discharge rates and connection points from each future sub-catchment.

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We note that in the latest response from December 2019, Thames Water have recommended discharge of condition. We understand that this relates to the proposed discharge rates and storage volumes for each phase of the development (which does not comply with the submitted drainage drawing). However, we have not found any capacity study result to be submitted and agreed. If Thames Water do not require this to be undertaken, we would advise that the applicant should provide evidence of this. We note that the applicant refers to Thames Water letter: Wastewater Pre-planning enquiry: Confirmation of sufficient capacity. Thames Water Ref: DS6045396. However, we believe that discharge rates and connection points have been changed since then.

I have spoken to Thames Water by Telephone directly and they do not require a capacity study. I have emailed them also and will forward the evidence you require upon receipt.

In line with point 3 of the condition, we would advise that Greenfield runoff rates should be estimated for the development site. Based on the submitted information, we were unable to identify these estimates. The final discharge rate from the site should be limited to Greenfield runoff rates for the relevant rainfall events.

This comment appears to suggest that the LLFA would accept greenfield run-off rates for each return period. This approach would allow a discharge rate for the 1 in 100 year event of 45.6l/s, 1 in 30 of 32.4l/s and 1 in 1 of 12.4l/s. The proposed strategy offers a significant betterment (more than 50%) when compared with the 1 in 100 year event. Is this not a better approach? Thames Water also stated that they wanted to see a greenfield runoff rate of 5l/s/ha, which has been used.

Point 4 of condition 5 requests confirmation of attenuation volumes required for each phase identified within the development proposal and its split between future sub-catchments identified within the drainage strategy. Based on the submitted information we understand that there are 3 different catchments proposed within phase 1 of the proposed development. It should be clarified which catchments the applicant refers to. We note that attenuation volumes for storage tanks, ponds and permeable paving features have been estimated. Moreover, the proposed discharge rates and storage volumes are inconsistent with the information submitted to Thames Water. This should be clarified. Full details of each phase and sub-catchment have to be provided.

As previously described above drawing 066571-CUR-00-00-DR-C-98011 shows the three catchment areas for the whole development and not solely Phase 1. This also describes the attenuation volumes for tanks swales/ponds and permeable paving. Also described is the discharge rates for each of the three catchments.

All information above and Letter of response to Thames Water dated 19.11.28

#### Information Required.

- Catchment areas drawings and drawings showing attenuation volumes required that was submitted for phase 1.

#### Condition 6 states:

*No development of any phase or block shall take place until the design of the drainage scheme for that phase or block has been submitted to, and approved in writing by the*

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*Local Planning Authority. The drainage system for future sub-catchment shall include a restriction in run-off and surface water storage on site based on the sub-catchment approach of the strategic system. The scheme shall subsequently follow the agreements described in Condition 5 – Agreement for Discharge Rates and Connection Locations for Future Sub- Catchments and Phasing Arrangements, and shall be implemented in accordance with the approved details before the development is completed. Detailed drainage design for each sub-catchment shall include the following principles:*

- 1. Providing storage to ensure no increase in surface water run-off volumes for all rainfall events up to and including the 1 in 100 year including plus 40% for climate change event and details as how this is to be achieved.*
- 2. Detailed calculations to demonstrate how the system operates during up to and including the 1 in 100 year critical duration storm event including drain down times for all storage features included within the drainage proposal.*
- 3. Demonstrate an appropriate SuDS management and treatment train and inclusion of above ground features reducing the requirement for any underground storage.*
- 4. Full detailed engineering drawings including cross and long sections, location, size, volume, depth and any inlet and outlet features. This should be supported by a clearly labelled drainage layout plan showing pipe networks. The plan should show any pipe 'node numbers' that have been referred to in network calculations and it should also show invert and cover levels of manholes. Total storage volumes provided within each future sub-catchment should be identified.*
- 5. Where an outfall discharge control device is to be used such as a hydrobrake or orifice, this should be shown on the plan with the rate of discharge stated.*
- 6. Silt traps for protection for any residual tanked elements.*
- 7. Details regarding any areas of informal flooding (events those exceeding 1 in 30 year rainfall event), this should be shown on a plan with estimated extents and depths.*
- 8. Full details of any required mitigation/ management measures of any identified source of flooding.*
- 9. Details of final exceedance routes, including those for an event which exceeds to 1:100 rainfall event including climate change event.*

*REASON: To prevent the increased risk of flooding, both on and off site.*

We advise the LPA that the information submitted in support of condition 6 in relation to surface water for phase 1 does not comply with the requirements set out in condition 6. Therefore, we recommend to the LPA not to discharge condition 6 for phase 1.

As we have stated in our previous letter, based on the review of the submitted information, we have noticed multiple drainage network connections coming from outside of the development site or new connections coming towards the phase 1 development area drainage network. This means that the original sub-catchment approach has not been followed. We would advise that this should be clarified by the applicant. Full details of the updated drainage sub-catchment approach should be clarified and provided. Moreover, as we have stated above, the applicant should clarify the inconsistency between information submitted to the LLFA and Thames Water.

**Information regarding the pre-planning sub-catchments for the site wide strategy are again required.**

**Drawings and rates are consistent with drawing supplied with S106 application.**

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We would advise that full details of two overflow basins/ dry swales located to the south west from the development site should be provided, as they will provide significant storage volumes for the development site.

Details for the swales can be seen on drawing 066571-CUR-00-XX-DR-C-98008. Further information is required from the LLFA if this has been deemed not sufficient.

No drain down times or half drain down times for all storage features included within the drainage proposal have been provided.

Drain down times are usually required when infiltration is proposed. This is to ensure that the system will empty in a reasonable time so that when another storm hits, there is capacity. Our system relies on a positive connection to the public sewer at a rate agreed with the LLFA and TW. The rate would need to be increased if the drain down time was inadequate. No infiltration is proposed on the site. This is not usually requested where infiltration is not used.

As included in point 3 of condition 6, the applicant should demonstrate an appropriate SuDS management and treatment train and inclusion of above ground features reducing the requirement for any underground storage. The applicant has provided a brief description of the proposed SuDS management stages for the proposed car parking areas. However, no information has been provided on the proposed roads. This should be clarified. Moreover, it should be clarified and demonstrated why underground storage features have been included in the proposed strategy. At this point major storage volumes have been provided in underground tanks and not on surface storage features.

Swales and ponds and permeable paving with sub-base storage has been provided in the available areas to reduce the need for attenuation tanks however tanks are still required to pick up the attenuation not contained in the afore mentioned methods. There are no more available areas on the site suitable for swales and ponds taking into account services cable routes etc. Bypass separators have been included at the outfall of every catchment to ensure any contaminants from the roads are captured before discharge to the public sewer. This offers the required protection as stated in gov.uk's "Pollution Prevention for Businesses". If this is not a satisfactory approach, the LLFA should state why.

Based on the assessment of the submitted information, no detailed engineering drawings of the proposed tanks and dry swales have been provided.

Details for the swales can be seen on drawing 066571-CUR-00-XX-DR-C-98008. The attenuation tank is a proprietary feature and detailed design is to be carried out by a third party when appointed. We have provided a performance spec on the drawing that would allow a third party to carry out this design. This is normal practice.

We note that 2 hydrobrakes flow controls have been identified on a drainage layout drawing. We note as well that catchpit manholes have been proposed at each attenuation tank.

Based on point 7 of condition 6, details regarding any areas of informal flooding should be provided. In the latest calculation submitted to Thames Water, we note that some flooding areas have been identified for the 1 in 100 year including 40% for climate change. This should be identified on a layout with its volume and depth.

Based on the submitted documents, no details of exceedance routes have been provided as well.

An exceedance route drawing has been produced. See drawing 066571-CUR-00-00-DR-C-98010

#### Information Required.

- Exceedance route drawings prior to Curtins involvement?

Having reviewed all the information submitted to the LPA and available on the planning portal, we would advise the applicant to revise all documents available online. We believe there are some documents that are referenced in the latest response from the drainage consultant but are not available on the planning portal.

No information regarding flooding, Discharge rate or drainage has been uploaded to the portal that has been produced by Curtins.

#### Informative to the LPA

As we have stated in our previous letter, in relation to condition 5 and 6, we note that the updated drainage strategy submitted by the applicant does not comply with the originally approved plans for drainage sub-catchments and phasing arrangements. Therefore, we would strongly advise the LPA that the applicant should update phasing and drainage sub-catchments plans for the entire Former Shredded Wheat Site with precise, estimated maximum allowable discharge for each phase and sub-base. Major changes relate to drainage for sub-catchment 1 and 2. Without this information it is impossible to estimate the impact of the proposed drainage strategy on the future phases and drainage sub-catchments approved at the original planning application stage.

As previously described, drawing 066571-CUR-00-00-DR-C-98011 shows the three catchment areas. This also describes the attenuation volumes for tanks swales/ponds and permeable paving. Also described is the discharge rates for each of the three catchments.

#### Information Required.

- All Phasing Plans and catchment areas plan prior to Curtins involvement.

Moreover, we note that the applicant referred to some documents that are not available online. We advise the LPA that this should be clarified by the applicant.

Should the LPA decide not to discharge condition 5 or 6 and require further information from the applicant, we would be happy to offer any further advice on any subsequent information received by the LPA.

Please note if the LPA decide to discharge condition 5 and 6 we wish to be notified for our records should there be any subsequent surface water flooding that we may be

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required to investigate as a result of the new development.

Yours sincerely,

Julia Puton

SuDS Officer

Hertfordshire County Council