

Your Ref: 152659

Our Ref: SR/SK/70006354

Date: 12 February 2016

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Dear Justin,

Subject: Application 152659 – Willow Tree Works, Swallowfield: Review of Flood Risk and Drainage Information

Following our reviews of the supporting documentation submitted with the above application dated 02 December 2015, 18 December 2015, 19 January 2016 and 05 February the applicant has submitted additional information for consideration.

The following additional and updated information has been submitted with a view to discharging Conditions 22, 23 and 24 of Planning Application F/2014/0940:

- Proposed Foul and Surface Water Drainage Layout (Ref: 31445/003-C6; Date: 05/02/2016) Peter Brett Associates;
- Proposed Levels drawing (Ref: 31445/002 C6; Date: 08/02/2016) Peter Brett Associates;
- Existing and Proposed Drainage Systems, A comparison using Micro Drainage Flood Flow (Ref: TN01; Date: 29/01/2016) Peter Brett Associates;
- MicroDrainage Files (Ref: 10 feb 2016 existing.mdx & 10 feb 2016 proposed.mdx; Date 11/02/2016) Peter Brett Associates; and,
- Existing and Proposed Flood Flow Comparison drawing (Ref: 31445/023 P3; Date: 11/02/2016) Peter Brett Associates.

In our review letters dated 18 December 2015 and 05 February 2016 Condition 24 and Condition 22 respectively were recommended for discharge.

Condition 23 is given below in full along with our outstanding recommendations and a review of the additional information submitted.

Condition 23

'The development shall be delivered in accordance with the approved FRA and supplementary Flood Flow hydraulic analysis detailed/ documented in the Odyssey Markides Technical Note dated 6th February 2015.

No development shall take place until full details of the Drainage System(s) have been submitted to and approved in writing by the Local Planning Authority. These shall include:

- a) *Full details of all phasing and/or measures proposed to mitigate risks of flooding and/or pollution incidents arising to receiving watercourses/bodies or neighbouring development throughout construction.*

- b) *Demonstration of where and how surface water attenuation and infiltration shall be provided across the site and that the attenuation features are adequately sized to serve the development (i.e. will not flood any of the proposed dwellings or neighbouring development) for all events up to the 1 in 100 year storm plus allowances for the effects of climate change, taking account of achievable discharge rates over the lifetime of the development.*
- c) *Demonstration that the design of the drainage system accounts for the likely impacts of local groundwater levels (including seasonal variation), climate change and changes in impermeable area, over the design life of the development.*
- d) *Demonstration that the proposed development will not exacerbate the risk of surface water flooding off-site for all surface water flood events up to and including the 1 in 100 year event.*
- e) *Full details of all components of the proposed drainage system including source control, conveyance, storage, flow control and discharge. Details shall include dimension, locations, reference to storm simulation files, gradients, invert and cover levels and drawings as appropriate. This shall be identified for all catchments.*
- f) *Full details of water quality treatment components of the proposed drainage strategy. Details of component(s) including type, dimension, locations, capacity, maintenance requirements and frequency, gradients, invert and cover levels and drawings as appropriate. This shall be identified for all catchments.*
- g) *Full details of the maintenance and/or adoption proposals/agreements for the development covering every aspect of the proposed drainage system including a schedule of inspections and issue of an annual inspection report.'*

Outstanding Recommendations (WSP | Parsons Brinckerhoff letter dated 05/02/2016)

- *'The catchment extents should be revised to replicate those used in the approved model developed by Odyssey Markides.'*
- *'The model should be revised to include the best available data, in this instance site specific topographic data as per the approved model.'*
- *'We advise that all simulations should be run using the 'Apply Rainfall' analysis type as this is the most suitable method to represent the behaviours of the catchment upstream of the site and the site drainage system.'*
- *'A model run simulating consecutive storm events should be provided so that we can interrogate what the water level in the swale is at the point of discharge before the second, critical, storm event is applied. Alternatively we will accept a model simulation that effectively simulates a resting groundwater level in the swale, this could be represented as a partial blockage of the outfall(s) to the swale or simulation using a hot-start level.'*
- *'The model should be revised to include a representation of the existing and proposed buildings to ensure that the flow paths through the site are accurately represented.'*
- *'The model should be revised to incorporate the latest changes to ensure that the final design proposals are assessed.'*
- *'The geometry of pipe numbers 26.000 and 26.001 should be confirmed and the hydraulic model or the accompanying drawings revised accordingly.'*

Additional Model Review

A revised model incorporating the recommended additions and amendments was submitted for review on 11/02/2016. All of the outstanding recommendations from our review letter dated 05/02/2016 have been addressed.

The accompanying flood depth comparison plan shown on drawing 31445/023-P3 demonstrates that the results are in accordance with the hydraulic analysis approved as part of planning application reference F/2014/0940 and that there would be no increase in flood risk in the vicinity of the site as a result of the proposed development.

WSP | Parsons Brinckerhoff recommend that Condition 23 is suitable for discharge.

I trust the above information is clear. Should you have any queries please do not hesitate to contact me.

Yours sincerely,



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