

Your Ref: 152659

Our Ref: SR/SK/70006354

Date: 19 January 2016

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Dear Madam/Sir,

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 and 18 December 2015 the applicant has submitted additional information for consideration.

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

- Decision Notice (Ref: F/2014/0940; Date: 02/04/2015);
- Planning Conditions Response (Ref: 31445/TN001 C; Date: 12/01/2016);
- SuDS Management Plan (Ref: 31445/R001/Rev 03; Date: 12/01/2016);
- Foul and Surface Water Drainage Plan (Ref: 31445/003 C4; Date: 12/01/2016);
- Drainage Construction Phasing Plan (Ref: 31445/SK009 C1; Date: 14/01/2016);
- MicroDrainage Calculations (Ref: SW Drainage; Date: 26/06/2015);
- Swale Cross Section (Ref: SK001, Date: n/a); and
- Contributing Areas (Ref: SK002, Date: n/a);
- Technical Note (Ref: Condition 23, Date: 15/01/2016)

In our review dated 18 December 2015 Condition 24 was recommended for discharge.

Conditions 22 and 23 are given below in full along with our outstanding recommendations and a review of the additional information submitted.

Condition 22

'The Local Authority shall be notified of the construction programme for any SUDS measures which are to be constructed within Private Gardens, prior to the associated residence being sold.'

→ Outstanding Recommendation

'This condition will be suitable for discharge once WBC have received appropriate notification which must take place prior to the associated properties being sold.'

→ Additional Review

The applicant has committed to including a suitable covenant within the deeds of Plots 35-38 which will outline the prospective owner's responsibilities for protecting and maintaining the drainage assets within the curtilage of their properties. The wording of the proposed covenants has not been provided for review.

Provided that the applicant submits a draft version of the proposed covenants to be included in the deeds for Plots 35-38 to Wokingham Borough Council for review 4 weeks prior to the deeds being finalised and provide WBC with 60 days' notice of the completion of these plots then Condition 22 will be able to be discharged.

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 Recommendation 1

'The applicant should provide additional information outlining how the outstanding risks [...] are to be managed during construction.'

Additional Review

The Drainage Construction Phasing Plan (31445/SK009) outlining the proposed sequencing of the primary surface water drainage infrastructure demonstrates that flood risk can be managed throughout the construction phase of the proposed development in accordance with Condition 23 (a).

→ Outstanding Recommendation 2

The applicant should revise the off-site surface water contributions to reflect those represented in the approved hydraulic modelling undertaken in support of the original planning application (refer to Odyssey Markides Technical Note dated 6th February 2015).

Additional Review

The applicant has submitted additional information in support of the selection of the off-site catchments used in the accompanying drainage calculations. A comparison of the peak flow rates presented to the proposed development from off-site and the capacities of the proposed drainage networks to those presented in the approved hydraulic model indicate that the proposals are being delivered in accordance with Condition 23 (d).

We anticipate that the proposals presented will not prohibit the applicant from delivering the development in accordance with Condition 23 but recommend that the hydraulic model be updated prior to the February 2016 committee meeting to confirm the findings of this review.

→ Outstanding Recommendation 3

'The applicant should provide pipe references in Table 1 to enable the proposed discharge rates to be related to the MicroDrainage calculations.'

Additional Review

The applicant has included pipe reference numbers within the latest revision of the Planning Conditions Response technical note (TN001 C) to enable cross-checking against the accompanying MicroDrainage Calculations.

This table has subsequently been supplemented with information provided in an email from the applicant to WSP|PB dated 19 January 2016 which separates out the surface water runoff generated from off-site from that generated by the development itself.

The revised information demonstrates that the proposed discharge rates from the site are in accordance with the approved Flood Risk Assessment as stipulated by Condition 23 (b) & (e).

→ Outstanding Recommendation 4

'The diameter of pipe reference S10.004 should be amended on drawing 31445/003-C2 to reflect the information presented in the supporting MicroDrainage calculations.'

Additional Review

The diameter of pipe reference S10.004 has been amended on the Proposed Foul and Surface Water Drainage Layout (Drawing 31445/003 C4) to match that given in the accompanying MicroDrainage calculations.

→ Outstanding Recommendation 5

'The applicant should provide additional details to demonstrate that the performance of the proposed surface water drainage system is not compromised by the anticipated high groundwater levels.'

Additional Review

The applicant has provided additional analysis which adequately demonstrates that the lining of the proposed permeable paving and pond would not be adversely impacted by high groundwater levels.

The swale is proposed to remain unlined and consequently allow the ingress of groundwater into the underlying filter drain. This is considered to be preferable to lining the swale as it will enable high groundwater levels to be drained via the proposed drainage system. In order to mitigate against the potential risk of high groundwater levels backing up through the drainage system into the ditch in the south-east of the site a non-return valve has been added to Manhole S1.

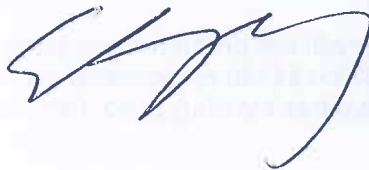
The applicant has provided sufficient information to demonstrate that the performance of the proposed drainage system will not be compromised by the anticipated high groundwater levels in accordance with Condition 23 (c).

In conclusion we recommend that Condition 22 will be suitable for discharge once the required 60 days' notice of the completion of Plots 35-38 has been given by the applicant.

Condition 23 will be suitable for discharge once the results of the updated hydraulic model have been submitted for review. Based on the information reviewed above we do not anticipate that these results will impact the current proposals.

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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