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Bethan Hawkins
ROK Planning
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London
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By Email: bethan.hawkins@rokplanning.co.uk

Dear Bethan

Drainage Rebuttal – 3 Viveash Close, Squirrels Trading Estate, Hayes, London, UB3 4RY

Introduction

RPS have been instructed by ROK Planning on behalf of General Food Trading Co Ltd to comment on the refusal associated with Drainage as raised by the London Borough of Hillingdon ('the Council') within their Delegated Decision report. The Council's refusal states:

'In the absence of a detailed flood risk assessment and drainage report, the application has failed to address the issues relating to flood risk and has failed to demonstrate that the development incorporates sustainable drainage techniques and reduce the risk of flooding. The proposal is therefore contrary to Policy EM6 of the Hillingdon Local Plan: Part One – Strategic Policies (Nov 2012), Policies OE7 and OE8 of the Hillingdon Local Plan: Part Two – Saved UDP Policies (November 2012), Policies 5.12 and 5.13 of The London Plan (2016), the National Planning Policy Framework (July 2018) and the Planning Practice Guidance (March 2014).'

The above refusal is supplemented by comments provided by the Council's Flood Water Management Officer (page 18 of the delegated report) and 'flood risk issues'(page 40 of the delegated report).

The purpose of this rebuttal is to review and provide commentary on the Council's refusal and establish that the proposed drainage scheme complies with the relevant national, regional and local planning policies and provides further technical justification in relation to the proposed Concept Drainage Strategy. The rebuttal will also demonstrate that suitably worded conditions will be sufficient to deal with the issues raised by the Council.

The following technical issues have been raised:

Council Comment – The Council accept a proposed discharge rate of 2 l/s;

RPS Response – no response required.

Council Comment – The rainwater harvesting benefits provided by the brown roof should be set out to ensure this is factored into the structural designs.

RPS Response – Whilst rainwater harvesting could be utilised within the site to provide water for non-potable uses such as toilet flushing, the attenuation benefits provided would only be realised when the tanks were not full. Notwithstanding this, the proposed development comprises an area of brown roof at eighth floor level. Whilst brown roofs are not typically designed for reducing surface water run-off, these areas could instead be designed as green / blue roofs which would provide a reduction in surface water run-off rates and could be utilised to provide rainwater harvesting. However, green / blue roofs would only provide storage for rainwater that falls directly onto their surface and as such, an underground attenuation tank would likely still be required to provide attenuation for rainwater that falls on external hardstanding areas at ground level. It is noted that further drainage design is likely to be required to quantify the surface water reductions by any proposed green/blue roof and rainwater harvesting. It is considered that this could be undertaken at the detailed design stage, subject to an appropriately worded condition and adequate structural designs.

Council Comment – The current SuDS Strategy provides for the worst-case scenario which includes providing attenuation within a tank which is not acceptable.

RPS Response – In order to restrict post development surface water run-off rates to 2 l/s, the Surface Water Drainage Assessment identifies that up to 133.2 m³ of attenuation would be required for all events up to and including the 1 in 100 year plus 40% climate change event. The drainage design contained within the Surface Water Drainage Assessment considered the drainage

hierarchy set out within the London Plan which identifies that storing rainwater for later use should be considered in the first instance. As noted above, this could be utilised as part of the proposed development, however, the attenuation benefits provided would only be realised when the tanks were not full. As such, and for the purposes of the Surface Water Drainage Assessment, the full balance of attenuation has been provided within an underground attenuation tank.

Policy 5.13 of the London Plan also requires the use of infiltration to be considered. As set out within the Surface Water Drainage Assessment, reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the site is underlain by the Lynch Gravel Member which is described as comprising Sand and Gravel. This is shown to be further underlain by the London Clay Formation. Whilst the presence of permeable superficial deposits suggest the use of infiltration may be feasible, the footprint of the proposed development will occupy a majority of the site area therefore it would not be possible to locate infiltration SuDS more than 5 m away from the building, as required by Part H of the Building Regulations.

The London Plan also requires the consideration of attenuating rainwater within ponds or open water features, however, as the development footprint occupies a majority of the site area, the provision of such features is not considered feasible as limited space is available.

Following consideration of the above elements of the London Plan drainage hierarchy it was determined that attenuating rainwater within a tank would be appropriate for the proposed development. The Surface Water Drainage Assessment proposes to provide the full balance of attenuation within an underground attenuation tank located beneath the undercroft car parking area at ground floor level. The tank would measure 260 m² x 0.52 m deep, providing 135.2 m³ of attenuation. This provides a significant volume of attenuation compared to the nature of the existing drainage system within the site which is unlikely to provide attenuation.

The attenuation tank could be supplemented with the use of green / blue roofs and rainwater harvesting, the design of which could be undertaken at the detailed design stage through an appropriately worded condition.

Council Comment – Long sections will be required to demonstrate that a pumped discharge is not required as Thames Water invert levels are high.

RPS Response – The Topographic and Underground Services Survey undertaken by Laser Surveys (dwg no. 7882/1, dated January 2017) indicates that the site benefits from an existing

surface water connection. This existing connection is shown to discharge into an existing Thames Water surface water sewer located beneath Viveash Close. The Conceptual Drainage Layout proposes to maintain a connection to this public surface water sewer.

Thames Water Asset Location Plans indicate the invert of the public sewer (at manhole 8301) is 30.70 m AOD. The ground level within the vicinity of the proposed attenuation tank is shown to be 32.370 m AOD and the depth of tank has been set at 0.52 m AOD thus providing an invert of 31.85 m AOD. As such, there is a 1.15 m difference between the invert of the tank and the invert of the Thames Water sewer. It is considered that this would be a sufficient height in which to provide both cover for the tank and fall for the outfall pipe. On this basis, the provision of long sections, demonstrating that a pumped outfall is not required, are not considered to be necessary and could be conditioned as part of the detailed drainage design.

Council comment – Information from the calculations should be presented within the Council's SuDS proforma. The Council believe the calculations may underestimate the storage required as default Cv values have been considered.

RPS Response – It is noted that the Council identify the calculations should be presented within their SuDS proforma. This proforma identifies that the Cv values, for both the summer and winter scenarios should be set at 0.95 for roofed areas and 0.9 for other hardstanding areas. Micro Drainage calculations have been rerun to consider the aforementioned Cv values and this has identified that approximately 20 m³ of additional storage would be required. It is likely that this could be provided by marginally increasing the size of the attenuation tank. It is likely that the attenuation provided within the site would be refined at the detailed design stage, subject to an appropriately worded condition.

Council Comment – The application is not located within a zone at risk of flooding, however due to the size of the development, it is necessary for it to demonstrate that it would incorporate sustainable drainage techniques and reduce the risk of flooding.

RPS Response – Prior to the production of the Surface Water Drainage Assessment, it was established that a Flood Risk Assessment would not be required to support the planning application as the site is located within Flood Zone 1 (according to the Environment Agency Flood Map for Planning) and is less than 1 hectare in size. In addition a review of other publicly available data indicates that the risk of flooding from all sources (i.e surface water, sewers, groundwater and artificial sources) is considered to be low. The site is also shown to not be located in a Critical

Drainage Area or in an area that would be impacted by future flood risk. Within the Delegated report, the Council state *'the application is not located within a zone at risk of flooding'*. As such, the site does not meet the NPPF's criteria for a Flood Risk Assessment and there is no requirement to provide flood protection measure.

However, based on the nature of the proposed scheme, the development is considered a 'major development' therefore a Surface Water Drainage Assessment was submitted to support the planning application. The Assessment identifies that the existing 0.230 hectare (ha) site comprises 0.196 ha of hardstanding surfaces. The proposed development would result in an increase in hardstanding and create a total impermeable area of 0.219 ha. Based on the limited size of the site, the greenfield run-off rates were calculated for the whole site area using the Interim Code of Practice for Sustainable Drainage Systems (ICP SuDS) Method which determines a QBAR rate of 0.4 l/s. For the purposes of the Assessment and proposed drainage strategy, a rate of 2 l/s was considered in order to allow self-cleansing of the proposed flow control unit. This rate has since been accepted by the Council.

In addition, a pre-development enquiry was undertaken with Thames Water which confirms that Thames Water would have no objection in terms of capacity if surface water run-off is restricted to a maximum of 2 l/s.

Based on the existing brownfield nature of the site, providing a restriction to 2 l/s is likely to provide a significant betterment over the existing situation thus ensuring a significant potential reduction in flooding.

Conclusion

A Surface Water Drainage Assessment, including a Concept Drainage Layout, was submitted to support the planning application. The Council have since refused this, stating that the application has failed to address issues relating to flood risk and has failed to demonstrate that the development incorporates sustainable drainage techniques and reduce the risk of flooding and is therefore contrary to Local, Regional and National planning policy.

Based on the criteria set out within the NPPF, a Flood Risk Assessment is not required to support the planning application as the site is located in Flood Zone 1 and is less than 1 hectare. In addition, the site is considered to have a low risk of flooding from all sources, is not located within a Critical Drainage Area and is not located within an area that is subject to future flood risk. The application

is therefore compliant with flood risk policies OE7 of the Local Plan Part 2 – Saved UDP Policies and Policy 5.12 of the London Plan. In addition, the development is located outside of Flood Zones 2 and 3 as required by Policy EM6 of the Local Plan Part 1.

The use of Sustainable Drainage Systems within the proposed development has been considered in accordance with London Plan Policy 5.13, taking into account technical constraints within the site. Surface water run-off will be restricted to 2 l/s, as accepted by the Council, and will therefore ensure that there is no increase in surface water run-off, as required by Policy OE8 of the Local Plan Part 2 – Saved UDP Policies. Based on the existing brownfield nature of the site, providing a restriction to 2 l/s is likely to provide a significant betterment over the existing situation thus ensuring a significant potential reduction in flooding. In order to achieve this restriction, an underground attenuation tank will be utilised to provide storage for all events up to and including the 1 in 100 year plus 40% climate change event taking into account the constraints and scale and nature of the proposed development. The attenuation provided by this feature could be supplemented with the use of green / blue roofs in addition to rainwater harvesting, the design of which should be undertaken at the detailed design stage.

On the basis of the above, it is considered that any outstanding issues can be resolved through detailed design and as such the inclusion of suitably worded planning conditions will be sufficient to ensure the final development design.

Yours sincerely,
For RPS Consulting Services Ltd

A handwritten signature in black ink, reading 'Matthew Bell', with a long horizontal flourish extending to the right.

Matthew Bell
Principal Consultant