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| PROJECT | 21170 Bird in Hand Pub London Borough of Camden | CLIENT | Peacock and Smith | | | |
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1 Introduction

- 1.1 This Technical Note addresses the comments from the London Borough of Camden (LBC) Lead Local Flood Authority (LLFA) regarding planning application 2022/3430/P for the redevelopment of the Bird in Hand Public House and creation of new dwellings at the rear of the site.
- 1.2 A Flood Risk Assessment and Sustainable Drainage Strategy Report was undertaken by Water Environment Ltd (21170-FRA-RP-01 C01) which was issued to the LBC and the LLFA as part of the planning application.
- 1.3 The LLFA have raised several comments which need to be addressed to remove their objection at the site. These comments will be taken in turn during this Technical Note.
- 1.4 Developments should only be required to demonstrate that the management of surface water (SuDS) has been investigated within the proposals and that a SuDS strategy has been prepared at planning. The detailed design of the drainage should not be a requirement of planning approval due to drainage being subject to final design changes and negotiations as part of the approval and post-approval process related to the development and the site. A SuDS strategy should be commensurate with the requirements of this stage of planning.

2 LLFA Comments and Responses

Provide details on the number and location of control and discharge points and show the on the drainage drawings.

- 2.1 The Bird in Hand Public House structure is only to undergo internal refurbished as part of the proposed development on the site. As such, the drainage network on this part of the site is not changing. This is because this development has the "existing right to discharge" and the proposals do not result in the drainage network requiring alternations. For the remainder of the site, the SuDS strategy has been presented within 21170-FRA-RP-01 C01.

2.2 The number and exact location of discharge points are part of the scope of detail design and agreement with Thames Water. The public sewer passes through the site; therefore the connection will be within the site boundary.

2.3 We encourage the LLFA to condition this element of detailed drainage.

Demonstrate that permeable paving is suitable for the site by carrying out infiltration testing. It should be confirmed whether rain gardens and tree pits are to be included within the design.

2.4 Permeable paving with gravel subbase is suitable in most instances, as infiltration can occur at a low rate within impermeable geology such as clay. Moreover, permeable paving and gravel subbases can be lined with an impermeable membrane to prevent infiltration when it is in unsuitable ground (made ground or a risk of movement of contaminants) with a suitable outfall.

2.5 The London Plan Policy SI 13 also requires that "*impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways*". To reflect this policy, the development has proposed permeable surfacing as there is no sound reason for not excluding it at present.

2.6 Infiltration testing has not been undertaken as part of the works to date. BRE365 infiltration testing can be undertaken post planning to aid the design of detail drainage network for the development.

2.7 Rain gardens and tree pits have not been included in the calculations for the site. These SuDS features require integrated within the landscape plan and are also subject to detail design. The addition of these SuDS features would increase the capacity to store surface water on the site and are encouraged to be brought forward within the detail drainage design of the site.

2.8 The present SuDS strategy includes an extensive green roof which is equivalent to rain gardens and tree pits in the SuDS Hierarchy (outlined in London Plan Policy SI 13) and are also encouraged within London Plan Policy G 5 – Urban Greening.

Demonstrate that the proposed run-off rate is as close as reasonably possible to the greenfield rate.

2.9 The SuDS proposals for this development are reducing surface water rates and volumes as "*reasonably practicable*" in line with the Non-Statutory Technical Standard for Sustainable Drainage. The proposed SuDS strategy for the site is limiting the surface water rates to 2 l/s.

2.10 The Camden Planning Guidance document on Water and Flooding and Local Plan Policy CC3 states "*utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible*".

2.11 Greenfield runoff rates for the site is 0.5 l/s and the current 1-year flow rate from the site is 4.18 l/s. The proposals for the site are to reducing the runoff to half of the current 1-year event.

2.12 Restricting flow rates to 2 l/s with a flow control (as proposed) requires very small pipework which can easily be block with debris and as such requires regular maintenance to ensure no flooding. Reducing the discharge rate to lower than 2 l/s, would result in even small pipework and increased risk of blockages and flooding.

2.13 Reducing surface water rates to 2 l/s for the current 100-year flow rate is an 84% reduction compared to the current site. This is a substantial reduction for a brownfield site.

2.14 Reducing the discharge to a flow lower than 2 l/s would result in additional underground or roof storage to be included as part of the design. The space on site is already constrained by the existing Thames Water sewer and required storage offsets. The proposal for a 2 l/s restricted rate is considered reasonable.

- 2.15 It should be remembered that the proposed development does not increase current surface water runoff rates and volumes from the site post-development. Rather, the proposals provide a substantial reduction in the rate and volume of runoff leaving the site post development, providing a betterment compared to the current uncontrolled condition.

Provide details on the type of flow control measure proposed.

- 2.16 This level of detail is part of detailed drainage design and should be conditioned.

Provide the greenfield runoff volume.

- 2.17 The current site produces 7.5m³ above the greenfield state, for the 100-year 6 hour event. This was provided within the appendix of 21170-FRA-RP-01 C01.
- 2.18 The calculator does not calculate the greenfield volume specifically. However, for the 100-year 6 hour event greenfield runoff volume, this can be determined via:

$$\begin{aligned} & \text{Standard Percentage Runoff (SPR) x Catchment Area x Rainfall Depth} \\ & 0.47 \times 0.037 \text{ ha} \times 90.45 \text{ mm} \\ & 0.47 \times 370 \text{ m}^3 \times 0.09045 \text{ m} \\ & 15.73 \text{ m}^3 \end{aligned}$$

- 2.19 Rainfall depth was taken from Flood Estimation Handbook (FEH) website with the point data using the 100-year, 6 hour storm. This results is 90.45 mm of rainfall at the site.
- 2.20 The above calculation is based on the assumption that the rainfall that lands on the equivalent greenfield site (the site is currently 100% hardstanding) is not dependent on catchment wetness and is thus equal to the SPR value for the site.

Provide calculations to show that the site will not flood in a 1 in 30 and 1 in 100-year flood event.

- 2.21 The production of detailed drainage calculations demonstrating that the outline design does not flood in the 30-year and 100-year events is part of detail design. At planning, the developer should only be required to demonstrate that SuDS has been considered within the design of the site and that outline calculations show that surface water can be adequately managed. This has been done.
- 2.22 The outline calculations have demonstrated the proposed development would need to attenuate 7.9m³ to reduce surface water runoff to 2 l/s in the 1 in 100 year plus 40% climate change event with the proposed green roof. 21170-FRA-RP-01 C01 has demonstrated that the SuDS strategy of green roof, blue roof, and the inclusions of permeable areas can be designed to attenuate the 100 year plus 40% climate change with a discharge rate of 2 l/s.
- 2.23 Detailed drainage calculation undertaken in drainage software is integral to detailed drainage design and can be condition as part of the planning permission. The LLFA can condition this as part of detail drainage design especially as the SuDS strategy can change in response to other conditions and final negotiations as part of the approval and post-approval process.

Identify exceedance flows for the 1 in 100 + 40% on the drainage drawing.

- 2.24 The exceedance flows above the design event (1 in 100 plus 40% CC) would follow the surrounding local topography and the GOV.UK Long Term Flood Risk Maps for Surface Water.
- 2.25 The GOV.UK Long Term Flood Risk Maps for Surface Water is presented within Section on Flooding from Surface water / Figure 2 of 21170-FRA-RP-01 C01. This documents that the surface water flow route flow in an easterly direction. As such, any exceedance routes would follow the local topography and this flow route.

Provide the maintenance tasks and frequencies for the blue roof system.

- 2.26 As stated in the 21170-FRA-RP-01 C01, all implemented SuDS features should follow the advice of the CIRIA SuDS Guide and the manufacturers guidance (Point 4.30 and in Appendix D).
- 2.27 A blue roof system is primarily an attenuation tank which located on a roof. As outlined in Table 2 of the 21170-FRA-RP-01 C01. As such, the CIRIA SuDS Manual advice on management and maintenance for attenuation tanks was provided in the Appendix D of the submitted FRA and SuDS report. The schedule is sufficient for all types of attenuation systems.
- 2.28 Maintenance and management task are bespoke to the final products used, and these would typically be specified by the provider. Consequently, specific maintenance requirements would only be confirmed following detailed design and specification.
- 2.29 It is considered reasonable that any further detailed management and maintenance plan should be secured by condition. Especially, as the SuDS strategy is subject to final design changes in response to other conditions and final negotiations as part of the approval and post-approval process.

Name the owner of all the maintenance tasks.

- 2.30 Point 4.31 of the 21170-FRA-RP-01 C01 report states "*The freeholder will be responsible for the upkeep and management of the SuDS system on the site.*"

Demonstrate that the proposed use for the basement complies with Camden Local Plan Policy A5

- 2.31 Camden Local Plan Policy is dedicated to basements developments. The basement at the site is already present and no planned extension (deeper or wider) is proposed to the current basement. The basement is to have internal modifications to change the current storeroom to a media room. No sleeping accommodation is proposed for the existing basement.
- 2.32 As the basement already exists the changes can occur without formally going through the planning system and thus does not require permission from the council for this work. Consequently, Camden Policy A5 is not applicable.

Carry out site investigation to support the findings on the desktop BIA.

- 2.33 The development is not proposing to create a new basement or extend the current basement at the site. Camden policy only requires a Basement Impact Assessment (BIA) for new basement or extensions to current basement. As such, no BIA is required to be undertaken as the below ground structure is already existing and does not need to be assessed for potential impacts.
- 2.34 Site investigation has not been undertaken to date and as outlined within this correspondence; this can be conditioned as part of planning.

Provide information on the management of Health and Safety risks related to the SuDS design.

- 2.35 Health and Safety (H&S) risk related to the SuDS design are bespoke to the final products used, and these would typically be specified by the provider, and consequently would not be available until the final design is confirmed and installed.
- 2.36 The inclusion of a green / blue roof will require maintenance access to the roof. Appropriate H&S considerations will be included in the design of the roof and how the roof would be accessed. These would be finalised by the other scheme design elements, not only drainage.
- 2.37 It is therefore reasonable that any Health and Safety documents could be secured by condition. This is particularly relevant as the SuDS strategy is subject to final design changes in response to other conditions and final negotiations as part of the approval and post-approval process.

Provide a Flood Risk Emergency Plan.

- 2.38 A Flood Risk Emergency Plan is typically conditioned as part of the planning approval process. As such, we request the LLFA to condition the production of a "Flood Risk Emergency Plan" for the development.
- 2.39 That said, the best course of action for occupants is to be vigilant of any MET Office weather warnings related to high rainfall which could result in surface water flooding. If surface water was to occur, occupants should remain in the development. This is because the development has been designed to be flood resilient which should reduce the risk of ingress of flooding to the development.
- 2.40 The nature of surface water flooding would occur due to local intense rainfall and would subside within a few hours of a storm event due to the sewer network absorbing the flood water. As shown in the EA Flood Risk from Surface Water, access to areas outside the surface water flood extents would easily be accessible in a short distance on either side of the site.

3 Summary and Conclusion

- 3.1 We hope the above comments have satisfied the LLFA to grant permission with conditions.
- 3.2 Camden Policy CC3 requires developments to only "utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible".
- 3.3 The information provided in this correspondence and in the 21170-FRA-RP-01 C01 is considered commensurate and sufficient to meet Camden's planning requirements, London Plan 2021 and the Non-Statutory Technical Standard for SuDS at this stage.
- 3.4 As outlined in this correspondence, that requirement of SuDS proposals at this stage of planning are to demonstrate that surface water management has been considered and been incorporated within the design of the site.
- 3.5 Detailed design of the drainage is subject to final design changes in response to other conditions and final negotiations as part of the approval and post-approval process. It therefore would be disproportionate both in terms of the time and cost to undertake detailed drainage design at this stage of the application process. Furthermore, it is considered unnecessary given the small scale of the development site and the improvements offered by the redevelopment of the site.
- 3.6 All other requests are over and above that and amounts to detailed design of the drainage system and therefore should be the subject of a suitable planning condition.
- 3.7 We consider that the SuDS strategy provided, and this further response should provide adequate comfort to the LLFA that an appropriate SuDS scheme can be provided on site, and that further information can be conditioned to be provided once the detailed design of the development has been completed.
- 3.8 If the LLFA are unable to agree to remove their objection and condition the detailed design, then we request a meeting to discuss and agree an appropriate way forward to remove the objection.