TECHNICAL NOTE

WATER | ENVIRONMENT

Water Environment Limited
6 Coppergate Mews
Brighton Road
Surbiton
London
KT6 5NE

Tel: 020 8545 9720

www.WaterEnvironment.co.uk

PROJECT	21170 Bird in Hand Pub London Borough of Camden	**CLIENT**	Peacock and Smith	
TITLE	Response to LLFA Comments	**REFERENCE**	21170-FRA-TN-02	P01

AUTHOR	**CHECKER**	**APPROVER**
Claire Burroughs MSc DIC MEng, (Hons) MCIWEM	**David Mardon** MSc Eng, BSc Eng, (Civil) CEng, MICE	**Guy Laister** MSc Eng, BSc Eng, (Civil) CEng, CEnv, C.WEM

REV	**COMMENTS**	**DATE**	**AUTH**	**CHKR**	**APPR**
P01	First issue for comment	17/02/2023	CB	DM	GL

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 the creation of new dwellings at the rear of the site in the former hard paved garden.

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. Water Environment initially respond to the LLFA comments in November 2022 (22110-FRA-TN-01 C01). Following the issue of our response, LBC LLFA have come back with additional comments, which are addressed in this Technical Note.

2 LLFA Comments and Responses

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

2.1 The development of the site is to reinstate the original Bird in Hand Public House structure and converted it to a single residential dwelling and at the rear of the site new dwellings are proposed. The current hard paved area to the back of the site is to have addition dwellings constructed onto the site.

2.2 The Bird in Hand Public House structure is only to undergo internal refurbished as part of the proposed development on the site and as such, the drainage network on this part of the site is not changing. This part of the development has the "*existing right to discharge*" and the proposals do not result in the drainage network requiring alternations. There should be no change in the location of discharge to the sewer for the current structure on the site.

2.3 For the remainder of the site/new proposed building, the SuDS strategy has been presented within 21170-FRA-RP-01 C01. As part of the outline SuDS design, connection points and control points were investigated but due a several reasons, the final connection point to a designated Thames Water could not be finalised at this outline stage for SuDS.

2.4 There are the numerous Thames Water sewers lying directly adjacent to the site on the northern and eastern boundary, as well as a larger Thames Water sewer which crosses the site. This means there are potential connections points to all of these Thames Water sewer for proposed site to discharge surface water.

2.5 The location of the outfall would need to be discussed with Thames Water and approval granted by them on which of the multiple sewers and location options would be best on a strategic level for the site to discharge into. This consultation with Thames Water is not required for planning permission and will be undertaken post planning.

2.6 It is unlikely that Thames Water would accept a direct connection to the large sewer running beneath the site, epically where the connection location could be inaccessible. As such the most likely connection to the Thames Water combined sewer would be a private drain discharging to the existing manhole at the entrance to the site. Where drained water would then immediately enter the larger, assumed, trunk sewer. Alternatively, the connection for the new onsite drainage could be to the manhole at the end of Abbey Lane.

2.7 The agreement regarding the connection will only be finalised at detailed design, once Thames Water have been consulted on the final design and approve whichever connection is acceptable to them.

2.8 What we can confirmed is that the site will need to discharge to a Thames Water sewer in accordance with the discharge hierarchy (as outlined in our submitted report).

2.9 We encourage the LLFA to condition the detailed surface water drainage, this will ensure the LLFA will be able to review any proposed connections and control points.

Demonstrate that permeable paving is suitable for the site by carrying out infiltration testing.

2.10 The email from LBC LLFA via Nora-Andreea Constantinescu on the 7th February 2023 have confirmed that the proposed development does not need to undertake a site investigation. A site investigation typically includes infiltration rates. As a site investigation is not required, neither should infiltration testing.

2.11 Permeable paving with gravel subbase / infiltration blankets 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.

2.12 The design of the outline SuDS is based on no infiltration occurring i.e., lined. This is to ensure the design of the storage attenuation on the site is not under sized at this stage.

2.13 Infiltration testing will occur post planning to determine rates and see if the site can use unlined infiltration blankets. This is a standard procedure for detail drainage design.

2.14 The preference for the development would be for the permeable paved areas to drain by infiltration, however, the SuDS strategy provided assumes the worst-case condition of no onsite infiltration. If infiltration is possible, then the final design will adopt infiltration for the permeable paving.

2.15 We encourage the LLFA to condition infiltration testing as part of a detailed drainage condition for the development.

It should be confirmed whether rain gardens and tree pits are to be included within the design.

2.16 Rain gardens and tree pits have not been included in our SuDS calculations at present. It was decided to exclude these SuDS features from any calculation in case they are not fully drained at the time of a storm i.e., are full or fully saturated. This decision was taken to ensure the outline SuDS strategy presented was capable of safely managing the 100-year plus 40% climate change event when tree pits or rain gardens are full.

2.17 Excluding any proposed rain gardens and / or tree pits from the calculations ensures the SuDS design has additional storage for surface water on the site when a storm event occurs and reduces the risk of exceedance of the drainage network and flooding others.

Provide details on the type of flow control measure proposed.

2.18 Details of the flow control measure / product is intrinsically linked to detail design. It is not recommended at this stage of planning to prescribe what type or product of flow control is used until detailed drainage design is undertaken in modelling software. Equally, new products are coming onto the market, which may not be available at present but are available during detailed design / construction stages which may change the engineer decision on the type of flow control.

2.19 Product specifications are also not a requirement at this stage of planning and is usually undertaken during detailed design. Blue roof specialists have their own flow controls which work with their devices.

2.20 We however recommend that the development uses flow controls from leading industry providers of flow controls such as Hydrobrake or ACO or those recommended by the blue roof specialist.

2.21 The proposed restricted discharge rate of 2 l/s is achievable by a range of existing flow control devices and as such there is no risk regarding their specification at detailed design.

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

2.22 The submitted FRA and SuDS report (22170-FRA-RP-01 C01) included within surface water calculations within the appendix. The calculation sheets include the 30-year and 100-year plus 40% climate change rates for the site in its pre and post development state.

2.23 The calculations show the required surface water attenuation for the development to ensure no flooding above the design outfall flow rate (2 l/s) is 7.9 m^3 for the 100-year plus 40% climate change and 5.4 m^3 for the 30-year plus 40% climate change event. The calculations include the green roof for the proposed development.

2.24 The report and associated SuDS drawing outlines show where additional surface water storage can occur to ensure the development can reduce runoff rates to 2 l/s. The provided additional attenuation on the site such as the blue roof, permeable paving with infiltration blankets are suitably sized to attenuate the surface water and discharge at 2 l/s.

2.25 Modelling of detailed drainage is subject to final design changes and negotiations as part of the approval and post-approval process related to the development and the site. It is therefore not appropriate to model SuDS system at this stage of planning.

2.26 The SuDS requirements at this stage of planning is to demonstrate that it has been investigated and a potential solution to manage surface water is possible with the proposed development. The submitted documents reflect this planning requirement. No detailed design or modelling of the drainage network in software is required as part planning permission because it is part of the detailed drainage design.

2.27 The LLFA can condition this as part of detail drainage design, and we request that they do this.

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

2.28 For exceedance routes from the proposed SuDS drainage network, as stated previously would follow the local ground levels and the surface water flow routes shown of the GOV.UK Long Term Flooding Maps. This would be along the western side of the development and then southwards.

2.29 For clarity, a pictorial image of the predicted exceedance route / surface water flow route off the site and joining the current surface water flow route (GOV.UK Long Term Flooding Maps) is shown in the Figure 1.

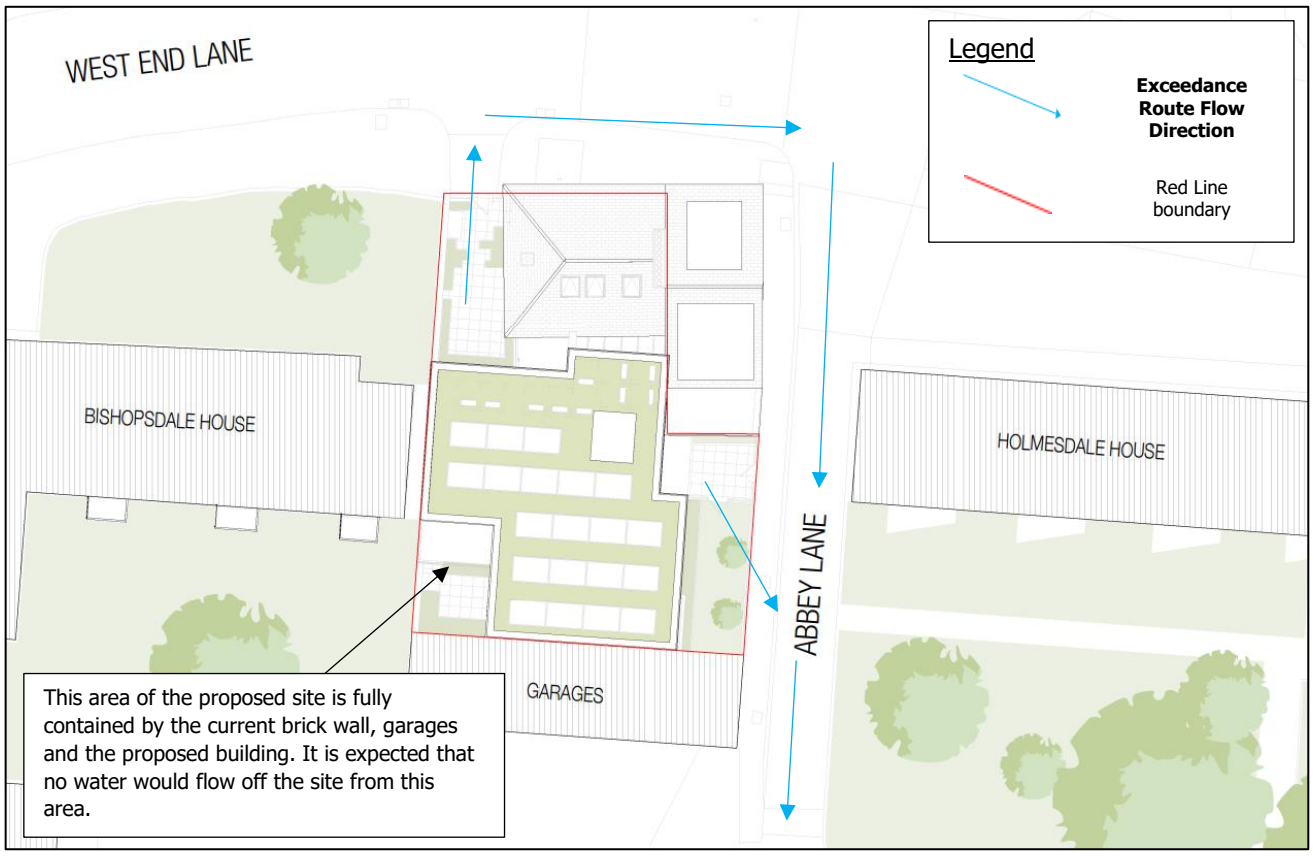

Figure 1 - Flow Exceedance Direction

The party responsible for the maintenance task has not been named.

2.30 The FRA and SuDS Report states in point 4.31 that the freeholder will be responsible for the upkeep of the SuDS network on the site.

2.31 In addition, the email from LBC LLFA via Nora-Andreea Constantinescu on the 7th February 2023 have confirmed that this can be conditioned.

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

2.32 The email from LBC LLFA via Nora-Andreea Constantinescu on the 7th February 2023 have confirmed that health and safety risk of the SuDS design can be conditioned

Provide a Flood Risk Emergency Plan

2.33 The email from LBC LLFA via Nora-Andreea Constantinescu on the 7th February 2023 have confirmed that Flood Risk Emergency Plan can be conditioned

3 Summary and Conclusion

3.1 We hope the above comments have satisfied the LLFA to grant permission with conditions.

3.2 As outlined in this correspondence, the requirement of SuDS at this stage of planning are to demonstrate that surface water management has been considered and can be easily incorporated within the design of the site. This has been presented to the LBC and the LLFA.

3.3 Most of the comments from the LLFA are related to detailed drainage design such as modelling the network in drainage software, location of control and discharge points. These are standard items of detailed drainage design and not part of the planning approval requirements. The requests for these details are over and above that required to grant planning permission and amounts to detailed design of the drainage system and therefore should be the subject of a suitable planning condition.

3.4 The information provided in this correspondence, the previous technical note (21170-FRA-TN-01 C01) and in the FRA and SuDS report (21170-FRA-RP-01 C01) is considered proportionate and sufficient to meet Camden's planning requirements, London Plan 2021 and the Non-Statutory Technical Standard for SuDS at this stage.

3.5 We consider that the SuDS strategy provided, and this further response to be adequate for the LLFA to approve the strategy with conditions.

3.6 If the LLFA are unable to agree to remove their objections or condition the detailed drainage design, then we will be requesting a meeting to discuss and agree an appropriate way forward to remove the objection.