

London Borough of Barnet

Proof of Evidence on behalf of Local Planning Authority

John Greenyer – SuDS and Drainage

Appeal By: Mr Patrick Casey

Proposed Development: "A material change of use for stationing of caravans for residential use with hardstanding and dayrooms ancillary to that use".

Appeal Site: Land On The North West Side Of Mays Lane, Arkley, Barnet. EN5 2AH

Appeal Reference: APP/N5090/W/23/3330577

LPA Reference: 23/3816/FUL

Public Inquiry: 21 January 2025

Appeal under Section 78 of the Town and Country Planning Act (As Amended) 1990

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1. Personal Background

1.1 My name is John Greenyer, I graduated from the University of Brighton, in 1999, with a Civil Engineering BEng. I became a Chartered Civil Engineer, with the Institute of Civil Engineers (ICE) in, Spring/Summer 2007 and a Fellow of the ICE in summer 2020.

1.2 Since 2019 I have led the team that has completed flood risk and drainage (SuDS) reviews.

1.3 I have over 25 years of experience, successfully delivering in multi-disciplinary fluvial, drainage and coastal flood risk mitigation projects and have a proven track record of managing and delivering flood, drainage and coastal projects to a very high standard. I have a proven track record leading multi-disciplinary delivery teams to ensure that both public and private client's scope of requirements are met, both at a technical and commercial level.

1.4 My key experience includes Initial Assessments, Five Case Business Plan, outline/detailed design of flood defence solutions; on site delivery of schemes (including design support); hydraulic modelling; hydrometrics; bridge scours assessments; topographic survey; coastal, rivers and flood defence engineering; contract management; flood warning and strategic flood risk mapping; organising and presenting engineering solutions to public meetings; project and health and safety management; writing and delivering evidence at public inquiries, liaising with local; and national government establishments.

2. Introduction

2.1 This evidence will focus upon the way the proposed development site impacts existing and future flood risk through its application of the Sustainable Drainage requirements. I will set out how on site and off site flood risk and drainage has been accommodated and whether the proposals are sufficient.

2.2 Sustainable Drainage Systems (SuDS) are approaches to manage surface water that take account of water quantity (flooding), water quality (pollution) biodiversity (wildlife and plants) and amenity. SuDS mimic nature and typically manage rainfall close to where it falls. SuDS can be designed to transport (convey) surface water, slow runoff down (attenuate) before it enters watercourses, they provide areas to store water in natural contours and can be used to allow water to soak (infiltrate) into the ground or evaporated from surface water and lost or transpired from vegetation (known as evapotranspiration).

2.3 SUDS are drainage systems that are considered to be environmentally beneficial, causing minimal or no long-term detrimental damage. They are often regarded as a sequence of management practices, control structures and strategies designed to efficiently and sustainably drain surface water, while minimising pollution and managing the impact on water quality of local water bodies.

3. The Appeal Site and Proposals

3.1 The site is located to the north of May's Lane, Barnet. The proposals are to develop the northwest portion of a 8139m² site, to provide accommodation for 2no. mobile homes, 2no. touring caravans and 2no. utility/day rooms. A new access track, from May's Lane will enable vehicle to traverse to the northwest corner, leaving the remainder of the existing greenfield site undeveloped.

3.2 From the block plan supplied (P01, August 2023) the site drainage (both surface and foul) is to be piped to a fenced off soakaway. Soakaways, permeable paving and rainwater harvesting to attenuate a minimum of 72.75m³ of surface water runoff. Discharge to nearby watercourse (Dollis Brook) via Hydrobrake.

3.3 The Environment Agency's (EA) surface water flood map indicates the flood risk to the site from surface water flooding ranges from very low to high. With 'High' specifying as 'Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)'.

3.4 There is a high risk surface water flow path along the southwestern boundary and northwest boundary, and a spot at the centre of the site at high risk. The existing Environment Agency Surface Water flood risk map (Figure 1), shows this in relation to the application site.



Figure 1 - Environment Agency Surface Water Flood Risk Map – November 2024

4. Planning Policy

4.1 In order to ensure that the London Borough of Barnet reduces flood risk, surface water runoff is managed effectively to mitigate flood risk and to ensure that SuDS are designed appropriately using industry best practice to be cost-effective to operate and maintain over the design life of the development.

4.2 This must be in accordance with Policy CS13 of the Barnet Local Plan (2012) **[CD4 4.17]**, Policies SI 12 and SI 13 of the London Plan (2021) **[CD4 4.9 – 4.10]**, and changes to SuDS planning policy in force as of 6 April 2015 (including the Written Ministerial Statement of 18 December 2014, Planning Practice Guidance and the Non-Statutory Technical Standards for Sustainable Drainage Systems) and best practice design guidance (such as the SuDS Manual, C753) and emerging policy HOU06 **[CD5 5.8]** which states that 'the site is not located in an area at high risk of flooding, including functional floodplains'

4.3 The above policies and planning requirements are also in line with the West London SFRA which has more guidance and checklists available for the developers for application submission.

4.4 The National Planning Policy Framework, paragraph 163 footnote 50 indicates that a site-specific Flood Risk Assessment (FRA) should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the EA as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding where its development would a more vulnerable use.

4.5 As part of the FRA process both the Sequential Test and Exception Test should be completed to allow appropriate and safe development to proceed in scenarios where the Sequential Test has been passed, i.e. where it has been shown that suitable sites at lower risk of flooding are not available.

5. The Case for the Local Planning Authority

5.1 The planning proposal documents specifically related to flood risk and drainage aspects, the aim being that there be no demonstrable deleterious impacts to existing on site or off site flood risk, nor impacts to water quality and environment.

5.2 Two reviews (on 19/10/23 and 16/08/24 respectively) have been undertaken by the council's flood risk and drainage team. Each time guidance on the drainage and flood risk requirements have been supplied to the Applicant/Appellant, as outlined in Section 4 of this proof.

5.3 From the second review the following specific details were outlined to the Applicant/Appellant as to why permission should not be granted, on the basis of drainage and flood risk requirements.

- i. A fully labelled SuDS network diagram showing pipes, manholes, SuDS features with reference numbers, etc., should be provided

5.4 The Proposed Block Plan, supplied for the second review, contained no information on the drainage network, including specific standard details (i.e. pipe sizes, SuDS features, etc). It is not possible to approve the proposals from a flood risk nor drainage point of view without greater drainage design detail.

- ii. Whilst details of peak discharge rates, total discharge volumes, critical storm duration and volume requirements have been provided for a range of return periods, evidence of hydraulic modelling in an industry standard software should be provided. The calculations should model the entire proposed drainage network, including all SuDS features. Storm durations should be simulated up to and including 1440 minutes (1 day) for the 1 in 1 year, 1 in 30 year, 1 in 100 year and 1 in 100 year plus an allowance for climate change. Urban creep should also be considered

5.5 Whilst the site is currently not shown to be at flood risk from fluvial (river) or reservoir flood risk, it is important to ensure the proposals do not impact this situation, both now and in the future, to ensure that the site occupiers are not put at risk by the proposals.

5.6 It is not possible to approve the proposals from a flood risk nor drainage point of view without greater flood risk analysis detail being provided.

- iii. Whilst a SuDS maintenance schedule has been provided, this lacks sufficient detail. Details of the minimum required maintenance of SuDS features can be found in the CIRIA SuDS manual

5.7 Maintenance SuDS features should fall to the site owners and no reliance made that the LLFA will take these on their behalf.

5.8 It is not possible to approve the proposals from a flood risk nor drainage point of view without a detailed SuDS maintenance plan, include action holders and frequency of said actions, along with how records of maintenance will be kept, in addition to emergency action plan details and contact details.

- iv. Whilst exceedance flow routes have been detailed on the proposed SuDS scheme, this is insufficient. Topographic levels at the site should be provided to verify the flows would travel in the directions indicated

5.9 It is essential to understand how any surface water flow routes will interact both with the existing and proposed site topography to ensure mitigation (proposed by the applicant) is put in place to minimise on and off site flood risk and reduce impacts to those using and adjacent to the proposed site.

5.10 It is not possible to approve the proposals from a flood risk nor drainage point of view without greater information on how the surface water flows manoeuvre the site topography and how uncontrolled flows will be minimised. We recommend this work is linked to those matters raised in point (ii).

- v. Standard design details should be provided for all proposed SuDS features

5.11 No SUDS design details have been provided to show how the site will control surface water flows from the developed area to a suitable discharge point.

5.12 It is not possible to approve the proposals from a flood risk nor drainage point of view without greater SuDS design information. We recommend this work is linked to those matters raised in point (i).

- vi. Evidence of approval from the LLFA confirming they approve the discharge into Dollis Brook should be provided

5.13 Dollis Brook is a heavily modified watercourse which forms part of a 'Site of Borough Importance for Nature Conservation' along its entire length. Whilst it has a mixture of ecological statuses, it nevertheless forms a valuable green corridor through suburban areas. As such any unrestricted discharge, especially without pollution control will harm the existing ecological standards, and the future aspirations to improve water quality along the watercourse.

5.14 It is not possible to approve the proposals from a flood risk nor drainage point of view without greater information on how water discharged from the site will not impact the existing watercourse ecological environment.

5.15 In addition to the points raised above, the following has yet to be resolved by the planning proposals:

5.15.1 Proposed Soakaway - GeoSmart's SuDS Infiltration Potential (SD50) map indicates the site has a low potential for infiltration, primarily due to the low permeability of the underlying geology (London Clay), meaning infiltration is not feasible. As such the proposed soakaway has yet to be proven in its effectiveness.

The nearby location of the watercourse also indicates a high groundwater level. Soakaway structures require a clearance of at least 1m between the base of the infiltration structure and the groundwater level

Similarly, the proposals effectively create a drainage field which are really no longer acceptable. For the foul water drainage, they would need to use a package treatment plant like a Klargestar Bio Disc. Also, even if the drainage field were viable, foul and surface water would need to be separate structures and distanced at least 5m apart. If they are together or placed too close together then the effectiveness of each will be diminished.

5.15.2 Future Flood Risk – As can be seen Figure 1, the proposed site is impacted by surface water flood risk. The current Surface Water (SW) flood risk is restricted to the northwest and southwest boundaries of the site. The Applicant/Appellant has provided no information as to how the proposed site will be impacted by existing, nor future SW flood risk. It is our concern that with climate change the site will become not only more inundated by SW flood risk, but more frequently. The Applicant/Appellant has provided no details as to how the proposed development will enable evacuation of its residents during flood risk, nor how this can be completed in a timely fashion, should May's Lane become restricted to traffic movements at the same time.

5.16 The Inspector is asked to note that the Council did not raise the lack of consideration of the Sequential Test and Exception Test in its Reason for Refusal 6. In essence, the reason for this was that the absence of application of these tests was the most insignificant part of the bigger problems surrounding the lack of adequate information to assess flood risk on the site. Given the lack of reference to Sequential and Exception tests in the Reason for Refusal, the Council does not consider it would now be fair to take a positive objection to the scheme on account of these points. However, the lack of reference to the Sequential Test and Exception Test in the Reason for Refusals should not be taken to mean that the Council considers that the developer does not need to apply those tests or that, if the tests were applied, they would be passed. It will be a matter for the Appellant to demonstrate to the decision-maker that the development passes the Sequential

Test or, if not, the Exception Test. Normally, this should have been included in the FRA.

5.17 To assist the Inspector, I set out the up to date policy position and my initial view on the application of the policy, were I asked to give an opinion as an independent professional witness. The NPPF (December 2024) **[CD4 4.1]** requires the Sequential Test to be completed, as part of the proposed development the FRA:

'All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property' (Para 172). 'Within this context the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test' (Para 174).

5.18 Reviewing 'Annex 3: Flood risk vulnerability classification' of NPPF 'Caravans, mobile homes and park homes intended for permanent residential use' are classified as 'Highly Vulnerable. For the Sequential Test and to accord with the aims and objectives of the NPPF (para 170 – 182), to be passed the following questions must yield a positive outcome:

1. Can development be allocated in areas of low flood risk both now and in the future?
2. Can development be allocated in areas of medium flood risk, both now and in the future?
3. Can development be allocated within the lowest risk sites available in areas of high flood risk both now and in the future?
4. Is development appropriate in remaining areas?

5.19 In my professional opinion, looking at the development in light of those questions without having carried out a detailed assessment, when assessing the whole development site (as opposed to simply the corner where the caravans are

located) that the questions above do not yield a positive result, especially when reviewed against the Surface Water Flood Risk Map (Figure 1) of this proof. However, this is merely a high-level professional opinion, and it is not an assessment which the Council has formally carried out.

5.20 It should be noted that sections 5.17 to 5.19 would constitute a basic Sequential Test, which the applicant should have included within their FRA, but failed to do so.

6 Summary & Conclusions

6.1 Based upon the evidence of this proof London Borough of Barnet cannot support the grant of planning permission by the Secretary of State, specifically in relation to flood risk nor drainage as the site remains unacceptable for this form of development for 'Highly Vulnerable' developments, as noted in NPPF, Annex 3 (December 2024), due to existing flood risk and drainage discharge restrictions. I believe that to allow permission to develop would put residents at risk of harm.

7. Possible Planning Condition

7.1 In order to assist with the Planning Inquiry, I have been asked to consider whether the information lacking could be provided after the grant of permission by way of condition. It is not within my area of expertise as to whether a condition is an appropriate mechanism to achieve this. From a practical point of view, I would have grave concerns about granting permission without the necessary information upfront, not least because I am not confident that, even if the information is provided, the flood risk issues will be resolved and, if any condition is not complied with and / or if the information shows that there is an unacceptable flood risk, and the site is occupied, then there is a real risk of loss of life. However, if information could be provided after the grant of planning permission, it would need to include the following:

- *A fully labelled SuDS network diagram showing, pipes and manholes, suds features with reference numbers etc.*
- *SuDS design input data and results to support the design;*

- *Infiltration site investigation results showing that infiltration systems are a feasible method of discharge for this site, if SuDS infiltration method is proposed;*
- *Appropriate design rainfall i.e. Flood Estimation Handbook (FEH) design rainfall 2013;*
- *Assessment of the proposed drainage system during the 30-year design rainfall according to Design and Construction Guidance, March 2020;*
- *Assessment of the attenuation storage volumes to cope with the 100-year rainfall event plus climate change;*
- *Evidence of Thames Water (Water Company) agreement for discharge to their system (in principle/ consent to discharge) if the proposal includes connecting to a sewer system;*
- *Details of overland flood flow routes in the event of system exceedance or failure, with demonstration that such flows can be appropriately managed on site without increasing the flood risk to occupants or neighbouring properties;*
- *SuDS operation and maintenance plan;*
- *SuDS detailed design drawings; &*
- *SuDS construction phasing.*

Reason: To ensure that surface water runoff is managed effectively to mitigate flood risk and to ensure that SuDS are designed appropriately using industry best practice to be cost-effective to operate and maintain over the design life of the development in accordance with Policies SI 12 and SI 13 of the London Plan (2021), Policy CS13 of Barnet's Adopted Core Strategy (2012), Policy DM01 of the Local Plan Development Management Policies DPD (2012) and emerging local plan policy HOU06.