



**Directorate for Planning, Growth & Sustainability
Planning and Environment**

Service Director: Steve Bambrick
Buckinghamshire Council
The Gateway
Gatehouse Road
Aylesbury
HP19 8FF

suds@buckinghamshire.gov.uk
www.buckinghamshire.gov.uk

Buckinghamshire Council
The Gateway
Gatehouse Road
Aylesbury
HP19 8FF

15.08.2022

Dear Case Officer,

Application Reference: 22/02535/APP
Location: 40 Mentmore Road, Cheddington, Buckinghamshire, LU7 0SD
Proposal: Demolition of existing dwelling and erection of 4 new dwellings and formation of new access

Buckinghamshire Council as the Lead Local Flood Authority has reviewed the information provided below:

- Location Plan (P01, Lines & Squares Ltd)
- Existing Site Survey Plan (P02, Lines & Squares Ltd)
- Existing Plan (P03, Lines & Squares Ltd)
- Proposed Site Plan (P04, Lines & Squares Ltd)
- Proposed Floor Plans House Type 1 (P05, Lines & Squares Ltd)
- Proposed Elevations House Type 1 (P06, Lines & Squares Ltd)
- Proposed Floor Plans House Type 2 (P07, Lines & Squares Ltd)
- Proposed Elevations House Type 2 (P08, Lines & Squares Ltd)
- Proposed Elevations House Type 2 (P09, Lines & Squares Ltd)
- Proposed Ground Floor Plans House Types 3 and 4 (p10, Lines & Squares Ltd)
- Proposed Elevations House Types 3 and 4 (P12, Lines & Squares Ltd)
- Planning, Design and Access Statement (July 2022, Phillips Planning Services Ltd)

The LLFA **objects** to the proposed development **due to insufficient information regarding the proposed surface water drainage scheme.**

Flood risk

The Flood Map for Surface Water (FMfSW) provided by the Environment Agency shows that the site lies in an area of very low risk of surface water flooding (meaning there is less than 0.1 likelihood of flooding occurring in a given year). An online version of this mapping data is available to view through the Environment Agency's [Long term flood risk information](#) mapping.

The Infiltration SuDS Map provided by the British Geological Survey 2016, indicates that the water table is anticipated to be within 3m of the ground surface. This means that there is a high risk of

groundwater flooding, and this may have implications on both surface and sub-surface assets; as such, further investigations must be undertaken, and suitable measures implemented.

Surface water drainage

The above application requires further detail regarding surface water management. From the information provided within the planning application documents submitted online, we consider that this is not sufficient in meeting our requirements to complete a SuDS Appraisal.

Drainage Hierarchy/Ground Investigations

To comply with paragraph 080 of the Planning Practice Guidance (PPG) 'the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

- into the ground (infiltration);
- to a surface water body;
- to a surface water sewer, highway drain, or another drainage system;
- to a combined sewer.'

To demonstrate compliance with the drainage hierarchy, the applicant will be required to undertake ground investigations including infiltration rate testing (in accordance with BRE 365) and groundwater level monitoring are required. If results show that infiltration is possible the surface water drainage scheme should be redesigned to incorporate this method of drainage disposal in accordance with Planning Policy Guidance.

Infiltration Rate Testing

The applicant is required to complete (further) site specific testing in accordance with BRE 365. Tests must be completed in the location (or as close as practically possible) and to the effective depth of the proposed infiltration component. Tests must be completed a minimum of three times and water should drain until nearly empty. The time taken for the trial pit to drain from 75% full to 25% full is then used to calculate the infiltration rate. The worst calculated rate from the three tests is then used to inform the storage calculations. In line with Chapter 25 of the CIRIA SuDS Manual, full infiltration-based schemes which are reliant on a rate of less than 1×10^{-6} m/s are not permissible. For slower rates the LLFA may accept a partial infiltration (Type B) drainage schemes. In line with Chapter 25 of the CIRIA SuDS Manual, infiltration rates which have been extrapolated are not permissible.

Groundwater Monitoring

The applicant must demonstrate a minimum of 1m freeboard between the base of the infiltration components and the highest groundwater level. This distance is required '*so as to minimise the risk of groundwater rising into the infiltration component and reducing the available storage volume, to protect the functionality of the infiltration process by ensuring a sufficient depth of unsaturated material and to protect the groundwater from any contamination in the runoff.*'. As groundwater fluctuates seasonally and ground water recharge is highest over the winter period (from November until March); ground investigations must take place over the winter period to demonstrate peak seasonal highs.

Should infiltration be found to be an inviable method of surface water disposal onsite, the applicant must investigate the feasibility of discharging to a watercourse. They must provide a map detailing the location of the watercourse and point of connection. The applicant will also be required to undertake a walkover survey demonstrating the downstream connectivity with supporting photographic evidence. It should be noted that a capacity and condition assessment may be required at detailed design.

If the applicant proposes to discharge to a surface water sewer, they must have a Pre-Planning Enquiry letter from Thames Water confirming that the sewer has sufficient capacity to accommodate the additional flows.

Discharge Rates

To comply with the National Planning Policy Framework (NPPF, 2021) the development must not increase flood risk elsewhere, as such the site should aim to discharge at Greenfield runoff rates or as close as reasonably practicable. This is in accordance with policy S3 of the Non-statutory Technical Standards (DEFRA,2015) and calculations of the existing and proposed discharge rate (if discharging offsite) must be provided in support of this.

Calculations

Calculations for the proposed surface water drainage scheme are required for the events detailed below:

- 1 in 1 year event demonstrating that there is no surcharging within the system in line with Sewers for Adoption
- 1 in 30-year event demonstrating that the system does not flood
- 1 in 100-year event plus 40% climate change demonstrating that any flooding is contained on site

These calculations must include details of critical storm durations and demonstrate how the proposed system as a whole will function during different storm events. If any flooding occurs for the 1 in 100 year plus 40% climate change event, then we require details of where this flooding will occur and the volume of the flooding.

Urban Creep

An urban creep value of 10% should be applied to surface water drainage schemes to take account of any future increases in impermeable areas within the site. For example, this includes patios, conservatories, and small extensions (Section 24.7.2, CIRIA SuDS Manual, 2015).

SuDS Components

The applicant must demonstrate that water quality, ecological and amenity benefits have been considered within the surface water drainage scheme, therefore we strongly encourage the applicant to incorporate above ground SuDS Components such as permeable paving, tree pits and rain gardens/planters within the surface water drainage scheme, further information regarding rain gardens can be found in the [UK Rain Garden Guide](#).

We would also encourage the applicant to investigate active rainwater harvesting; this will allow surface water runoff to be used for example in toilet flushing and washing machines. It is likely that due to the size of the development demand will be greater than yield meaning that the overflow to the watercourse will only be required for extreme rainfall events. The use of active rainwater harvesting would decrease the attenuation required as it would only be required during those extreme rainfall events. If active rainwater is pursued, the applicant will be required to demonstrate compliance with BS EN 16941-1:2018 Rainwater Harvesting: providing calculation details of the expected yield of the system based on annual average rainfall data and the expected demand based on occupancy. The [UK SuDS Rainwater Harvesting Tank tool](#) can be used to provide this information.

Drainage Layout

A surface water drainage layout is required to show the location of the proposed components and the connectivity of the system. The layout must clearly show the storage volume of all SuDS components.

Maintenance

The applicant should be made aware that a maintenance schedule for the surface water drainage system needs to be provided at detailed design, but they may wish to provide an indicative plan at this stage. This should include what maintenance tasks will be completed, who will be responsible for undertaking maintenance and how often the maintenance tasks will be completed.

We request that the applicant visit our [website](#), where our requirements are clearly stated. Useful documents include our Developer Pack and Minor Applications Sustainable Drainage Guidance. Our minor guidance includes a checklist which should be completed and submitted alongside supporting documents; FAQs can also be found within this guidance which should also be reviewed. Our website also contains our Local Flood Risk Management Strategy (LFRMS) and Preliminary Flood Risk Assessment (PFRA) which are strategically important documents that should be reviewed.

Please take this letter as a formal request for information regarding management of surface water in the form of a comprehensive Drainage Strategy and accompanying Drainage Statement.

Advice to LPA

If you are minded to approve the application contrary to this advice, we request that you contact us to allow further discussion and/or representations from us.

Yours sincerely,

Sustainable Drainage Team

Email: suds@buckinghamshire.gov.uk

For any upcoming planning applications the SuDS team offer a charged pre-application advice service, for more information and how to apply please see our [website](#).