

Drainage Report for Planning Application

Report on Drainage Strategy to Accompany
Planning Application 3/2023/0410 Condition
Cunliffe House Farm Longsight Road Langho BB6
8AD

By

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1. Project Summary

This report supports planning application 3/2023/0410 for constructing a single-story detached fire/stove showroom with associated parking spaces and hardstanding at Cunliffe House Farm, Langho, BB6 8AD. The report details surface and foul water drainage strategies consistent with National Planning Policy Framework (NPPF), Building Regulations, and Local Authority requirements.

Condition 9

Condition 9 mandates the submission and approval of a drainage scheme before construction above slab level. The drainage strategy adheres to the SuDS hierarchy, ensuring separate foul and surface water drainage systems.

2. Site Description

Site Address	Cunliffe House Farm, Longsight Road, Langho, BB6 8AD
Longitude, Latitude (Or OS Grid Ref)	SD 69239 34294
Topography	Mixed terrain with noted surface flow paths and depressions.
Existing Conditions	Free-draining clay loam soil, surrounded by mature broadleaf woodland.
Flood Zone	Flood Zone 1 – low flood risk
Site Area (m ²)	Approximate site area of 395.00 m ²
Site Area used for calculating Run Off Rates (m ²)	Approximate site area of 46.00 m ²
Site Area (Ha)	395.00 m ²
Is the Site Steep Sloping (Y/N)	N
If “Yes” Typical Gradient	-

Table 1.

3. Development Proposal

Impermeable Surfaces:

- Building roof and paving area: ~46.00 m²
- Semi-Permeable parking area: 80.00 m²

4. Flood Risk Assessment (Summary)

The site lies within Flood Zone 1, indicating a low probability of flooding from rivers or the sea. However, local depressions and flow paths present moderate surface water risks, which require targeted management solutions.

5. Surface Water Drainage Strategy

5.1 SuDS Hierarchy Assessment

Primary Approach: Site-specific BRE 365 infiltration tests confirm suitability for natural infiltration. The semi-permeable parking surface facilitates natural infiltration.

Roof Drainage: Clean roof water directed to a dedicated clean water drain, discharging naturally into a nearby watercourse (~15 m away).

Alternative Measures: If infiltration proves unsuitable during construction, soakaways or attenuation tanks will be employed with controlled runoff discharge. There is an existing tank to the south of the site that can be utilized. Modelling indicated low risk of surface water flow path through the site. In the event of additional surface water, any surface flows should be intercepted before they reach the site to reduce contamination. In the event additional water is flowing to the site, a soak way should be considered.

5.2 Proposed Surface Water Drainage Measures

Recommended SuDS Features:

- Soakaways (primary choice)
- Attenuation tanks (backup strategy)
- Placement of features strategically informed by existing flow paths and depressions.

Exceedance Routes designed explicitly to manage and safely direct overflow away from buildings and sensitive ecological areas.

5.3 Surface Water Calculations

Building and paving runoff:

- $Q = 0.9 \times 0.05 \text{ m/hr} \times 0.0046 \text{ ha} = 0.0207 \text{ L/s}$
- Hourly runoff volume: 74.52 liters

Parking area runoff:

- $Q = 0.9 \times 0.05 \text{ m/hr} \times 0.0080 \text{ ha} = 0.036 \text{ L/s}$
- Hourly runoff volume: 129.60 liters

6. Foul Water Drainage Strategy

- Primary preference is connection to existing mains sewer.
- If mains connection unavailable, installation of a package treatment plant with compliant soakaway or drainage field per Environmental Agency standards.

7. Maintenance and Management Plan

- Responsibility lies with building owner/applicant.
- Quarterly inspection and cleaning of permeable paving.
- Annual inspection of soakaways.
- Biannual checks of any rain gardens and attenuation tanks.

8. Environmental Impact Considerations

- SuDS features selected specifically to minimize ecological disturbance, enhance local biodiversity, and mitigate erosion and pollutant runoff.
- Construction activities will avoid mature woodland and natural depressions to protect local habitats.

9. Explicit Flood Risk Mitigation

- Rain gardens and soakaways located adjacent to depressions and flow paths to effectively manage surface runoff.
- Exceedance routes clearly defined, directing any overflow to permeable areas to minimize pooling and flooding risks.

10. Recommendations

- Avoid construction in natural depressions.
- Utilize permeable paving and other SuDS solutions to manage runoff effectively.
- Confirm contingency measures clearly before construction to ensure robust drainage performance.

11. Conclusion

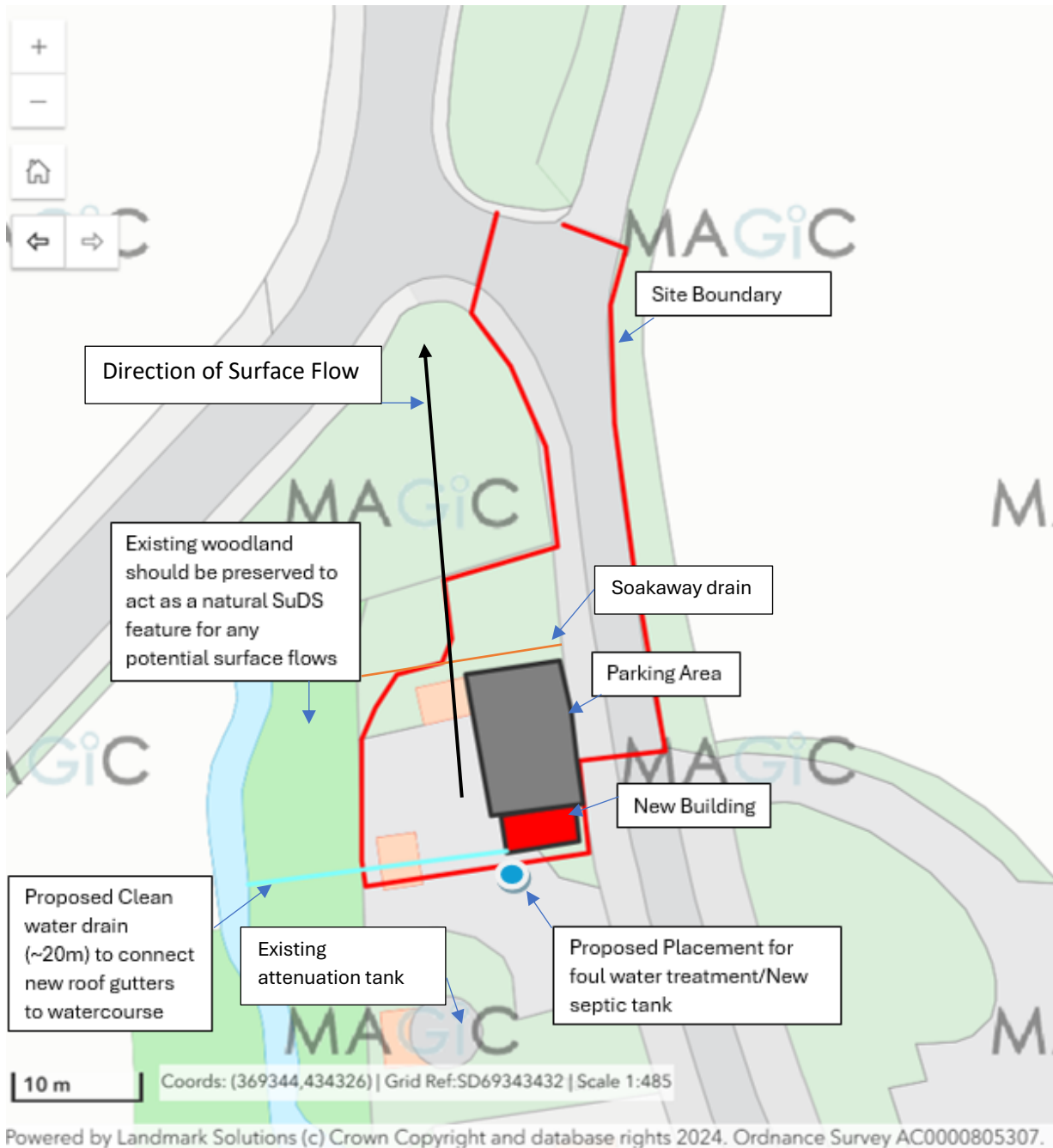
The proposed drainage strategy ensures effective management of surface and foul water, promoting sustainable drainage practices. It is designed to manage site-specific risks and complies with regulatory standards, enhancing both site sustainability and local environmental protection.

13. Appendices

- **Detailed Drainage Plans and Diagrams:** Clearly illustrating proposed SuDS placements and exceedance routes.
- **Flood Risk Model:** Depicting precise flood likelihood and water accumulation details.

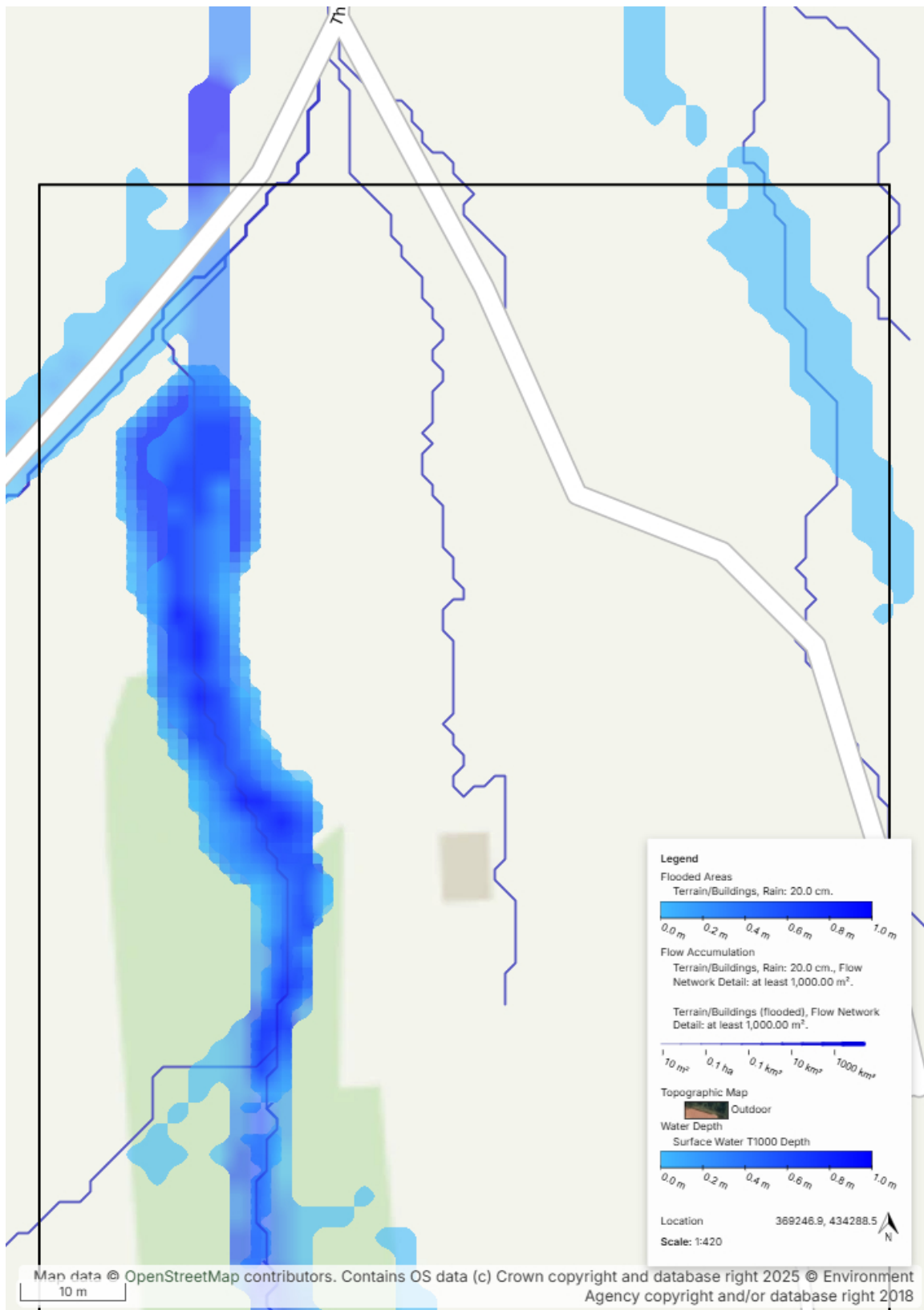
Appendix

A. Proposed Drainage Plan



A. Drainage plan of site

B. Flood Risk Model



B. Flood Risk Model. Map representing the likelihood of the proposed site to undergo or increase the likelihood of flooding. Modelling based on water surface depth at 1.0m above basal flow. Any surface depressions will be represented on the model under flooded areas. Flow accumulation from surface flow represented by blue line indicate chance of potential surface flow path running through proposed development area. *Flooded areas* - Flooded areas layers represent flooded areas for a given amount of rain (1.4 m annually Met Office)). Indicates (1) the amount of rain needed before a point gets flooded (if ever), (2) the water column height at a flooded point, (3) the volume of water in a flooded area. *Water depth* - Show only areas where the water depth is deeper than the threshold (10m). *Flow network* - Show only flow lines with an upstream area larger than the threshold. *Flow accumulation* - Flow accumulation for the terrain model with buildings, flooded. Resource Scalgo <https://scalgo.com/>

Resources

Report based on data from the following sources:

Organization	Data set	Date acquired
Ordnance Survey	OS Open ZoomStack land	2025-01-28
Environment Agency	England LIDAR-DTM-1M	2025-01-28
Environment Agency	England LIDAR-DTM-2M	2025-01-28
Ordnance Survey	Open Rivers	2019-11-21
Ordnance Survey	OpenMapLocal Building	2025-01-28