

Harry Chalk

Planning Officer

01 12 2025

Dear Harry,

Application Reference: LU/119/25/PL

Location: Lineside Way, Wick, Littlehampton, BN17 7EH

Proposal: Extension of industrial unit and installation of new palisade fencing gates to adjoin existing dropped kerb (resubmission following LU/303/24/PL). This application is in CIL Zone 4 (Zero Rated) as other development.

Below are the detailed responses to the consultations raised by the Arun District Council Engineer (ADC/SB) dated 22/10/2025, incorporating the amendments to the design and information of the Southern Water (SW) water authority.

We have revised the Drainage Strategy (DS) in response to the objections raised. The main objection is based on insufficient information to demonstrate that the risk of flooding will not be increased.

To comprehensively address this objection, we propose the following amendments, confirming that the risk of flooding will not only not increase, but will mitigate the risk of rainfall:

- Discharge Rate Validation: Southern Water (SW) has confirmed that there is adequate capacity in the local surface water network for the proposed discharge rate of 0.7l/s. This resolves the concern about the capacity of the receiving network.
- Rate Justification (0.7l/s): The flow rate of 0.70l/s is justified because the ideal Greenfield rate of 0.1l/s would require a hole of an unworkable diameter (approx. 10-15mm), presenting an unacceptable risk of system blockage and failure in the industrial environment.
- Revision of Calculations: We confirm that the calculation methodology has already been updated to FEH-22 and the CC factor of 45% has been modeled. Modeling with this new methodology confirms that there is no flooding for 1, 2, and 30-year events (+45% CC).
- Discharge Flow Adjustment: The simulation with the correct rate of 0.7 l/s and the CC factor of 45% for the 100-year event requires a maximum volume of 14 m³. The proposed storage volume is 16 m³ (4 m × 5 m × 0.8 m), which is sufficient.

These calculation revisions ensure that sufficient storage is provided.

Query 1: Runoff destination

- 1.1. The designer has proposed to discharge surface water at a restricted rate to the public surface water sewer on Lineside Way. Water reuse is not proposed or discussed within the drainage strategy which means that the applicant has not fully demonstrated that they have followed the hierarchy for sustainable drainage. However, it is acknowledged that water reuse does not offer a final disposal solution and can be secured via condition if appropriate.
- 1.2. Infiltration to ground has been ruled out due to the anticipated geology. Under normal circumstances, a desk-based study would be insufficient to rule out infiltration, however, due to the scale and type of development, the site's location, fully within flood zone 3, and with access to a surface water sewer, it is accepted that infiltration can be ruled out. There is therefore no objection in principle to the proposed connection of surface water to the public surface water sewer as the runoff destination.
- 1.3. However, insufficient information has been submitted regarding the existing drainage arrangements of the site. The proposed extension is directly over the mapped public surface water sewer. It is unclear if Southern Water (SWS), the asset owner, have been consulted regarding the proposal. An easement to the sewer may need to be observed or the sewer diverted to the satisfaction of SWS. The sewer is a 675mm diameter pipe laid at relatively shallow depth. This means that it is likely to need an easement and that a diversion would be required. The scope for diversion is limited within the site as the proposed building footprint extends to the boundary at the southwest corner. Therefore, the diversion may need to be in third party land, yet adjacent to this site is the railway embankment. This may impact the deliverability of the proposed extension and its surface water drainage design. It has not therefore been demonstrated that a viable disposal location has been identified for this proposed extension and therefore I **object** to the application.
- 1.4. Even if the disposal point was changed to manhole 8752 (on the public sewer records as submitted by the applicant) the challenges associated with building over the existing sewer would remain. If planning permission is granted and the sewer network is damaged by the proposed extension, then this would impact flood risk upstream in the catchment.
- 1.5. In addition to the potential flood risk caused by the proposed extension, the application is in conflict with 1.6 of the national standards for SuDS which states that; "Where access to third party land is required to facilitate discharge to a final destination, evidence that any necessary easements are in place for the lifetime of the development shall be provided to the approving body."

Response: The destination point for surface water runoff is confirmed to be the Public Surface Water Sewer on Lineside Way. Southern Water has confirmed that there is adequate capacity in this network for the proposed flow rate of 0.7l/s. We recognize that the proposed extension overlaps with the 675mm diameter surface water pipe. Southern Water requires a clearance of 3.5m on each side of this culvert and does not normally allow building over a public culvert. The solution is to divert the public sewer line to avoid the extension area, bringing it to the left, surrounding the new structure. This diversion will be evaluated and agreed with Southern Water (SW). Application S106 will be submitted for sewer connection. Evidence of the agreements and implementation of the diversion will be provided to ensure compliance with regulations.

Query 2: Interception drainage

- 2.1. No interception assessment has been submitted with the application and interception drainage is not discussed at all within the drainage strategy. Infiltration is not proposed on the site and therefore interception can only be delivered by water reuse or evapotranspiration. No SuDS features which offer these benefits are proposed. No departure from the national standards from SuDS has been requested.
- 2.2. It is acknowledged that opportunities to achieve interception will be limited within the confines of the site whilst also meeting our requirements for SuDS in Flood Areas. However, opportunities to intercept the first 5mm of rainfall for the majority of rainfall events should be maximised. Some SuDS features, like green roofs, which assist in meeting this standard cannot be agreed and secured via condition as their late introduction would contradict approved site plans and elevations. It is therefore important that interception is properly considered at this stage of the planning process. On this basis I **object** to the application.

Response: We recognize the need to intercept the first 5mm of rain. A combination of multifunctional SuDS is proposed:

- Use of Rainwater Planters: The installation of 10 to 12 plants strategically located around the site to intercept light rain will be proposed. Details will be provided in Appendix D - the proposed drainage design.

Query 3: Extreme Rainfall and Flooding

- 3.1. The proposed development introduces new built form within an area at risk of flooding. The site is wholly located within flood zone 3a – at high risk of flooding from rivers or the sea.
- 3.2. The area where the extension is proposed is also at risk of surface water flooding in the 0.1% annual exceedance probability [AEP] event. This is used as a proxy for the 1% AEP + an allowance for climate change in the absence of a dataset for that event. The 1% AEP pluvial event (with no climate change) conflicts with the edge of the proposed extension.
- 3.3. The site is also identified as likely to be at high risk of groundwater flooding in our Strategic Flood Risk Assessment.
- 3.4. The drainage for the proposed extension would place SuDS features in a pluvial flood area. The application does not demonstrate that the surface water drainage of the site would function under flood conditions.
- 3.5. The calculations that have been submitted to support the application do not follow national guidance. When adjusted it is expected that the storage needed will increase. For example outdated rainfall data has been used (FSR instead of FEH22), the incorrect climate change allowance has been applied to the 1% AEP event (40% instead of 45%).
- 3.6. The greenfield runoff calculation uses the IH124 method, as opposed to an FEH method as prescribed by the national standards for SuDS. The proposed discharge rate is more than 5 times the greenfield discharge rate which is more than the maximum relaxation factor suggested by the national standards for SuDS. In fact, the outflow rate is demonstrated to be 1.1l/s by the simulation results, which is higher than the 0.7l/s suggested by the strategy.
- 3.7. The design has been modelled with level inverts which does not reflect best practice (as opposed to level soffits).

3.8. Due to the inaccuracies in the modelling and the location of SuDS features in flood areas without adequate risk assessment I object to the application. The applicant has not demonstrated that sufficient storage can be provided on site without increasing flood risk.

Response: We have completely reviewed and updated the drainage modeling and design to address the deficiencies raised in Query 3, demonstrating the system's full functionality under extreme conditions and confirming that flood risk will not be increased. The calculation methodology has been updated from FSR to **FEH 2022** and the **45% Climate Change (CC)** factor has been applied for the 1 in 100-year event. The modeling has been corrected to use **Level Soffits** instead of *Level Inverts*, adhering to best engineering practices. The system will be designed as a **completely sealed closed circuit** to prevent surface water from entering the underground tank and the building, which includes the installation of a **non-return valve** at the point of surface water connection. The updated modeling confirms the discharge rate is maintained at **0.7l/s** and shows that while the tank node reaches a **SURCHARGED** status during the critical 100 year + 45% CC event, it **never reaches a state of FLOOD**, thus confirming sufficient storage capacity. Furthermore, the overflow water will be directed by the natural topography towards the **public roadway (Lineside Way)**, moving away from the building structure and outside the development area.

Query 4: Water Quality

4.1. Insufficient evidence of water quality benefits has been provided, and as such, Standard 4 of the NSfS has not been met. However, the submission of this evidence is unlikely to affect the scale or layout of the development. Therefore, we do not object to the proposal on these grounds, subject to a condition securing the provision of details demonstrating water quality benefits.

Response: Noted, additional details will be provided.

Query 5: Amenity

5.1. The Flood Risk Assessment suggests that permeable paving may be incorporated into the design, this would provide a limited multifunctional benefit. However, no further evidence or information is provided to confirm where it might be installed. The inclusion of permeable paving also introduces a conflict with the requirements for locating SuDS in flood risk areas. This is because it is not possible to seal the permeable paving from surface water inundation from elsewhere. Replacement of concrete hardstanding with permeable paving is likely to have little to no impact on the amenity of the area. It is acknowledged that, given the industrial nature of the site, there are limited opportunities for SuDS to enhance its amenity value.

5.2. Without further evidence of the amenity benefits arising from the proposed SuDS being identified, Standard 5 of the NSfS has not been met. It is unclear how any amenity benefits may be provided without affecting the scale and layout of the development and therefore I object to the proposal.

Response: Amenity enhancements will be achieved through the introduction of rainwater planters, which provides a visual and environmental benefit suitable for the industrial setting. No permeable surfaces are included, as these would not be appropriate within the site's flood risk context. Details will be provided in Appendix D - the proposed drainage design.

Query 6: Biodiversity

The proposed SuDS do not demonstrate sufficient biodiversity benefits, and therefore Standard 6 of the NSfS has not been met. It is acknowledged that the site offers limited space and existing biodiversity features that could be adapted or incorporated into SuDS. However, this does not preclude opportunities for the designer to explore biodiversity enhancements; for example, the inclusion of green roofs or rain gardens may be viable options.

6.1. The submission of such evidence (especially in light of the limited options open to the designer) may affect the scale or layout of the development. Accordingly, I object to the proposal on these grounds.

Response: The incorporation of rain gardens/planters along the perimeter of the extension will provide the necessary ecological habitat and a new source of biodiversity. Furthermore, the possibility of incorporating green roofs will not be included in the project due to architectural and structural limitations inherent to the proposed industrial extension.

Query 7: Construction, operation, maintenance, decommissioning and structural integrity

- 7.1. Insufficient information regarding the construction, operation and maintenance of the SuDS system, and therefore Standard 8 of the Systems NSfS.
- 7.2. The issues that have been highlighted regarding the existing public surface water sewer in paragraphs 1.3–1.5 also apply to this standard. The designer has not demonstrated how the surface water drainage for the site can be constructed without increasing flood risk to the existing sewage network. Therefore, I object to the application.
- 7.3. It is unclear if there are any necessary easements to the railway line, and if so, whether the surface water drainage, or indeed the proposed extension would be in conflict with them.
- 7.4. There are no significant existing trees which could impact the scale and layout and location of SuDS features, and therefore most other elements of this standard can normally be secured via condition. The submission of a Management and Maintenance Plan is unlikely to affect the scale or layout of the development.

Response: The existing sewer will be protected through its planned diversion, ensuring no increased flood risk and full compliance with SuDS requirements, with all drainage features designed to operate effectively during flood events. Finally, It is not necessary to establish easements along the railway line and the excavations will be carried out within the development's boundaries.

Yours sincerely,

Ana Maria Guarin
Junior engineer

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