Drainage Addendum

Site: Land to the North of Arundel Road, Fontwell, West Sussex BN18 0SF

Client: Harlequin Developments

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1.1 Introduction

1.1.1 This Drainage Technical Note (TN) has been produced in response to West Sussex County Council (LLFA) dated 22nd September 2026 in relation to Planning Application Reference: WA/18/26/PL concerning a proposed residential development of up 64 units on Land to the North of Arundel Road, Fontwell, West Sussex BN18 0SF.

1.1.2 The LLFA Are currently stating that Standard 2 of the National Standards for SuDS has not been met and a departure from Standard will need to be agreed with the Local Planning Authority.

1.1.3 This TN has been prepared following discussion with Mat Jackson (Senior Flood Risk Management Officer at the LLFA) who suggested it would be beneficial to set out the process undertaken to arrive at the final surface water drainage strategy and to demonstrate that the National SuDS Standards have been met as far as practical.

1.2 Outline Planning Application WA/74/24/OUT

1.2.1 This application follows a previous Outline Planning Application (WA/74/24/OUT) for 56 residential dwellings and a stand-alone childcare facility. That application was recommended for approval by Officers and received a unanimous resolution to grant permission at the January 2025 Planning Committee. However, the Section 106 was not signed, and the application was withdrawn at the end of 2025.

1.2.2 Notwithstanding this, the principle of residential development and the key technical matters including surface water drainage were accepted by the LLFA and the LPA and all statutory consultees.

1.2.3 The original surface water strategy was prepared in July 2024 and comprised of permeable paving and an infiltration basin to retain all surface water on the site. The use of infiltration is top of the surface water drainage hierarchy.

1.2.4 The LLFA initially raised concerns on the use of infiltration due to groundwater levels but agreed that groundwater monitoring should be carried out over the following winter. They however raised no objection to the proposal as an alternative strategy was agreed which comprised of an attenuated discharge at 2l/s/ha into the highway drainage. Based on a site area of 2.74 this totalled 5.5l/s.

1.2.5 The existing site can be seen to drain overland at a greenfield rate of 9.9l/s so this would be a betterment to the existing situation.

1.2.6 The connection to the highway drain included agreed improvements to the existing highway drainage network which is in a poor state of repair and is understood to lead to existing surface water flooding.

1.2.7 Following the final response from WSCC in January 2025 a full winters testing was carried out and demonstrated the maximum ground water level was below the base on the infiltration basin.

1.3 DETAILED APPLICATION WA/18/26/PL

1.3.1 A Detailed planning application was submitted in 2026. This site layout was based on the same general layout as the outline application albeit for some minor amendments and the replacement of the childcare facility with a two storey apartment block.

1.3.2 A revised drainage strategy was prepared for the new layout which utilised infiltration techniques which were justified based on the previous infiltration testing and winter ground water monitoring. This design also incorporated the new SuDS standards which were implemented in June 2025. Compliance with these standards were demonstrated in full.

1.3.3 In response to the submitted drainage strategy WSCC raised an objection to the proposal, and particularly the use of infiltration on the site due to the groundwater levels.

1.3.4 A revised drainage strategy the prepared based on the alternative solution of draining to the highway drain which was agreed at the outline planning stage. This again was assessed against the National SuDS standards which except for Standard 2, full compliance has been demonstrated. Standard 2 states:

"Apply a 'SuDS approach' so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems"

1.3.5 The total impermeable area for the site comprises of the following elements

- Roofs – 3,072m^2
- Porous Paving - 6,309m^2

- Pond Area - 1,200m^2 (base of pond 643m^2)

1.3.6 It is not considered that 5mm of rainfall over a vegetated pond would contribute to offsite runoff so this would not need to be considered. If it was considered calculations would need assess the base of the pond rather the pond when full.

1.3.7 The following measures are considered demonstrate compliance with Standard 2 and have been assessed for implementation on the scheme.

Soakaway or infiltration systems

1.3.8 WSCC will not permit the use of infiltration, so this is not an option.

Bioretention areas and rain gardens

1.3.9 This can only be considered to comply when unlined. Unlined features are not acceptable to WSCC.

Permeable surfaces

1.3.10 All permeable surfaces, whether lined or not, shall be assumed to comply provided there is no additional area drained to the permeable pavement. All paved areas contributing to the surface water drainage will be constructed as a permeable paving this comprises a total impermeable area of 6,305m^2 leaving 3,072m^2 to be dealt with.

Swales /Detention basins

1.3.11 It is not possible to provide swales to drain the roof areas. The detention basin has a separate inlet and outlet so runoff will flow along the base which will be vegetated rather than hard landscaped. This will treat and intercept some of the first 5mm of rainfall. Give a surface area of the base of 643m^2 and a factor of 5 for an unlined swales would treat and area of 3,215m^2.

Green roofs

1.3.12 Green roofs have been considered as part of the SuDS hierarchy. However, the proposed development does not incorporate flat or low-pitched roof forms, with the buildings instead designed with conventional pitched roofs. Green roof systems are most readily and effectively incorporated on flat or shallow-pitched roofs and their introduction in this instance would require significant changes to the proposed roof design, together with additional structural support, waterproofing, retention systems and ongoing maintenance requirements.

1.3.13 In these circumstances, green roofs are not considered to represent a technically appropriate or proportionate SuDS measure for the development.

Rainwater Harvesting (RWH) systems

1.3.14 Based on the site topography and the high-water table, porous paving has been used to convey surface water to the point of discharge in the southeast corner of

the site as a traditional piped system would drive levels too deep to drain to an above ground feature above the highest groundwater level.

1.3.15 The overflow from rainwater harvesting systems drains via a filter which collect detritus from the roof which is another factor in rainwater harvesting not being able to be implemented as it will block the porous rendering it in affective.

1.3.16 The only way rainwater harvesting could be implemented would be to provide a separate system for the roof water which would drain to an underground tank which would be below the highest ground water level. This increases the risk of groundwater entering the system and is a less sustainable option which would affect compliance with Standards 5/6 and 7 (amenity/biodiversity/maintenance).

1.3.17 Water butts will be provided to individual dwellings and this can be secured as part of the detailed drainage scheme.

1.4 Conclusion

1.4.1 The National SuDS Standards state that there may be specific circumstances or constraints, such as the type or size of a development that mean it is not possible to deliver one or more of the standards. In these circumstances the opportunity to meet the standard shall be maximised and justification be developed in consultation with the approving body, who may agree to a departure unless regulatory controls prohibit such a departure.

1.4.2 It is noted that the runoff from the site has been reduced from the existing rate of 9.9l/s to 5.5l/s and improvements will be made to the existing highway drainage network both of which will reduce the risk of downstream flooding, which is considered to be a significant (public) benefit of the scheme.

1.4.3 Based on the above it is considered that the opportunity to meet Standard 2 has been maximised whilst meeting all other standards and will reduce the risk of downstream flooding.