Response to SUDS comments – sent by email on 02/10/2024

The existing building footprint is ≈ 0.22 ha and currently 100 % impermeable. The permeability will not alter as a result of the development. The Greenfield rates for the 0.22 ha site area are presented in the tables below.

Table 1 – Greenfield runoff rates

Rainfall event	Greenfield rate (l/s)
Qbar	0.34
1 in 1 year	0.29
1 in 30 year	0.79
1 in 100 year	1.09

As shown, the greenfield rates are low and restricting the surface water discharge to these rates would not be practical for the development as the existing building is predominantly retained. Even to achieve a discharge rate of 1.1 l/s for the full building footprint, which is the highest greenfield rate, all rainwater pipes and surface water drainage features will need to be directed to a single attenuation storage tank with one outfall. The attenuation volume required to achieve such low discharge rates can only be located below the basement slab level where there is risk of encountering groundwater, hence requiring anti-flotation measures. Pumping will also be required to discharge the attenuation tank due to the depth of the existing outfall points. Based on previous experience, the minimum discharge rate achievable with a pump is likely to be higher than 1.1 l/s.

It is proposed that the existing surface water arrangements are reused where feasible. A survey of the existing above-ground drainage arrangements will be undertaken following the strip-out to assess the extent of the drainage that can be reused. The main changes to the building roof are associated with the terrace areas to the south. Blue roofs are proposed to these terraces to provide surface water discharge restrictions. Furthermore, outgoing flow/overflow from the blue roofs are directed to the rainwater harvesting tank located in the basement area. This tank will serve the toilet areas at basement level.

Overall, the proposal is looking to utilise the areas with changes to the roof layout to provide SuDS while reusing the existing drainage arrangements including outfall points to the Thames Water network. This approach is considered more sustainable compared to providing pumped solutions with belowground attenuation.