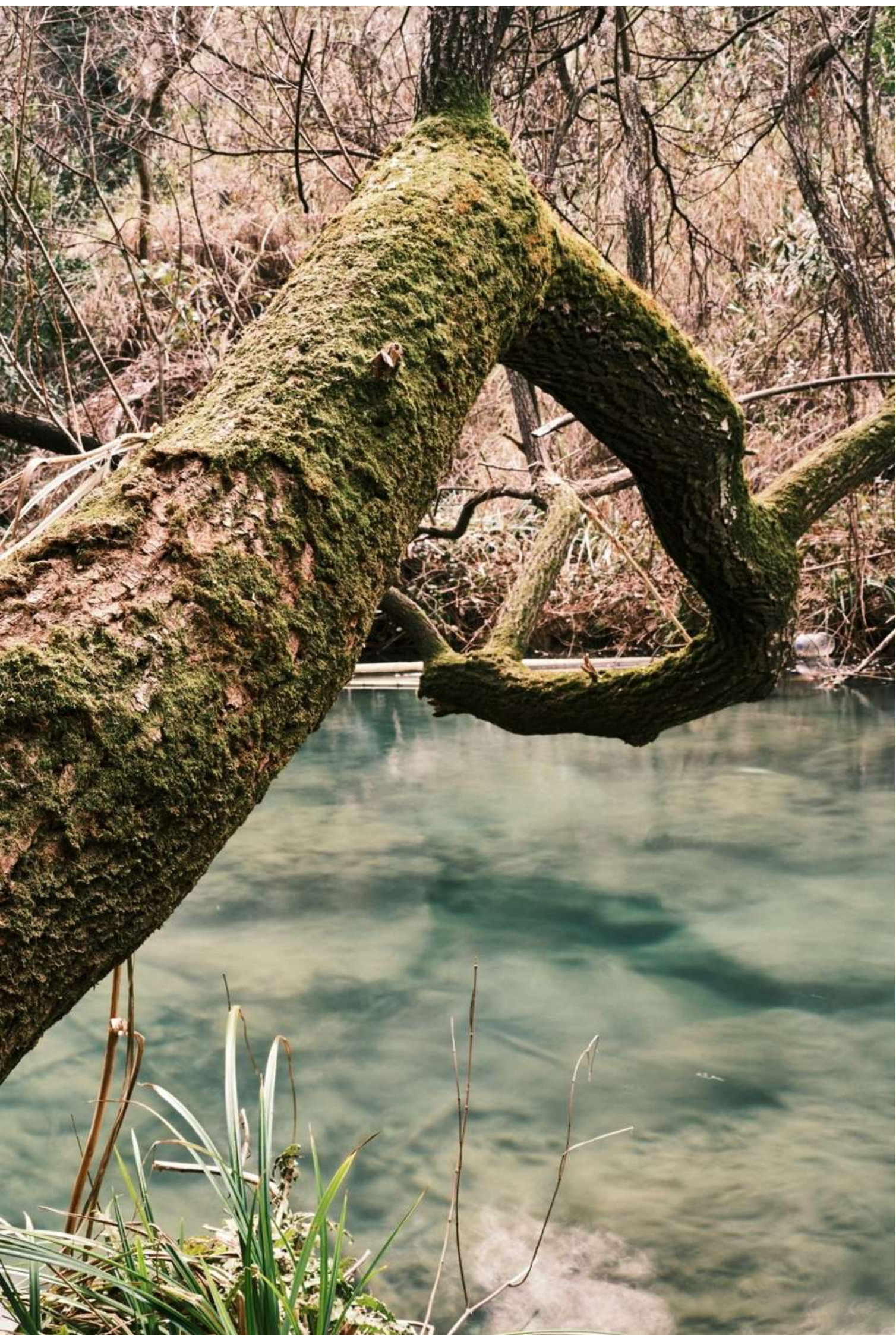




Flood & Civil

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Water Quality Assessment

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Water Quality Assessment

The developed area of the site includes hardstanding areas with low volumes of vehicular traffic and there are no other sources of pollution anticipated. The catchment areas for the proposed drainage system include a single residential dwelling and associated access and parking.

The CIRIA C753 SuDS Manual provides the pollution hazard indices for different land use classifications. The land uses are considered to have a low pollution hazard level. The pollution hazard indices applicable to the site are shown in Table 1 below with the proposed site uses highlighted.

Table 1: CIRIA Pollution hazard indices for different land use classifications

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-carbons
Residential roofs	Very Low	0.2	0.2	0.05
Other roofs (typically commercial/industrial roofs)	Low	0.3	0.2 (Up to 0.8 where potential for metals to leach from roof)	0.05
Individual property driveways, residential car parks, low traffic roads and non-residential car parks with infrequent change <300 traffic movements a day.	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change, all roads except low traffic roads and trunk roads and motorways.	Medium	0.7	0.6	0.7
Sites with heavy pollution, haulage yards, lorry parks, highly frequented lorry approaches to industrial estates. Sites where chemicals and fuels are to be delivered, handled, stored, used or manufactured. Industrial sites, truck roads and motorways	High	0.8	0.8	0.9

Indicative SuDS Mitigation Indices

The table below provides the CIRIA indicative SuDS mitigation indices with the proposed SuDS components highlighted.

Table 2: CIRIA Indicative SuDS mitigation indices for discharge to surface waters

Type of SuDS Component	Total Suspended Solids (TSS)	Metals	Hydro-carbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system / rain garden	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Wetland	0.8	0.8	0.8

Proposed SuDS include SuDS planters (bioretention area) and permeable pavement.

Simple Index Approach

As stated within the SuDS Manual, to provide adequate treatment, the SuDS components should have a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index (for each contaminant type).

The drainage strategy has been developed to ensure all catchment areas drain via the permeable paving, with some roof areas also passing through the SuDS planter.

As shown in Table 1 and Table 2, the mitigation indices for the bioretention system and permeable pavement are greater than the worst case hazard indices for each pollutant type. It is therefore deemed the proposed SuDS provide sufficient pollution mitigation for the proposed land use.