Treatment – Improving the quality of water by physical, chemical and/or biological means.
Watercourse – A term including all rivers, streams, ditches, drains, cuts, culverts, dykes, sluices, and passages through which water flows.

Water table (or groundwater table) – The point where the surface of groundwater can be detected. The water table may change with the seasons and the annual rainfall.

Appendix 1:

DESIGN ASSESSMENT CHECKLIST: SCHEME

Table 1: Scheme Design Assessment Checklist

Requirements			
Site ID	MANOR RD, RICHMOND		
Site Location and co-ordinates	MANOR RD, [redacted] TW9 1YB | 518901, 175426		
Site description	BROWNFIELD	Drawing Reference(s)	126782/C/4000
Date of assessment	14/12/2018	Specification Reference	
Type of development	MIXED USE	Site Area	1.65ha

	SuDS Manual Page Ref*	Y	N	Summary of details	Comments / Remedial actions
PRINCIPLES					
Is the runoff managed at or close to its source, wherever possible? If not, give reasons.		✓		INFILTRATION PROPOSED	
Is the runoff managed at or close to the surface, wherever possible? If not, give reasons e.g. infiltration systems are being used to manage the runoff.		✓		INFILTRATION. NO SPACE FOR ON-SURFACE SUDS	
Where the drainage system serves more than one property, is public space used and integrated with the drainage system in an appropriate and beneficial way ? If not, give reasons.		✓		PERMEABLE AREAS, INFILTRATION TANKS	
Have the opportunities afforded by the drainage system in terms of green infrastructure, biodiversity, urban design, climate adaptation and amenity provision been maximised?		✓		GREEN ROOFS ALLOWANCE FOR CLIMATE CHANGE	
Has an appropriate SuDS Management train been provided?					AT DETAILED DESIGN
Are the operating and maintenance requirements of the drainage system adequately defined?					"
Is operation and maintenance achievable at an acceptable cost?				PRIVATE MANAGEMENT COMPANY	
POINT OF DISCHARGE					
Does the design meet the following discharge hierarchy 1. Infiltration is preferred where it is safe and acceptable to do so; 2. If infiltration is not possible discharge to water course; 3. Discharge to sewer as last resort.		✓		INFILTRATION	
If infiltration is used: Confirm that an acceptable infiltration assessment has been undertaken and submitted?				IN PROGRESS	

	SuDS Manual Page Ref*	Y	N	Summary of details	Comments / Remedial actions
If discharge is to sewer, rather than a surface water body, provide justification.				n/a , possible	
If discharge to a sewerage asset is proposed, has evidence been provided that the design criteria have been agreed with the sewerage undertaker and that an appropriate connection detail has been agreed?				overflow connection depen dant on infiltration results TBC	
Have adequate and appropriate exceedance routes been provided and are they protected from future development?					
INTERCEPTION					
Does the scheme design demonstrate on-site retention of approximately the first 5mm of runoff from impermeable surfaces for most events? How is Interception to be delivered (e.g. infiltration, green roofs, permeable pavements, vegetated surfaces, bespoke design - provide details)?		✓		- GREEN ROOFS - SOFT LANDSCAPING	
PEAK FLOW RATE CONTROL					
Does the design demonstrate control of the 1 year, critical duration site event to the equivalent 1 year greenfield peak flow rate or below?				N/A INFILTRATION DISCHARGE	
Does the design demonstrate control of the 100 year, critical duration site event to the equivalent 100 year greenfield peak flow rate or below?					
Do the design calculations take account of future development (urban creep) and climate change?					
VOLUMETRIC CONTROL (FOR THE 100 YEAR, 6 HOUR EVENT)					
Does the design demonstrate that, for the 100 year 6 hour event: *Either:* The discharged site runoff volume is not greater than the equivalent greenfield runoff volume? *Or:* The discharged site runoff volume over and above the equivalent greenfield runoff volume (i.e. the Long Term Storage Volume) is discharged at a rate < 2 l/s/ha (or another rate that is considered acceptable in not negatively impacting flood risk of the receiving water body) *Or:* Peak flow rates from the site are restricted to 2 l/s/ha or Qbar, whichever is the greater ha (or another rate that is considered acceptable in not negatively impacting flood risk of the receiving water body).				N/A INFILTRATION DISCHARGE	
WATER QUALITY TREATMENT					
Is the receiving water body (surface or groundwater) environmentally sensitive (E.g. Groundwater Source Protection Zone? What is its designation? Are any implications for drainage design clearly defined?				~~N~~ NOT IN GROUND WATER PROTECTION ZONE	

	SuDS Manual Page Ref*	Y	N	Summary of details	Comments / Remedial actions
Does the design include an appropriate treatment strategy that ensures: 1. Sediment is trapped and retained on site in accessible and maintainable areas? 2. Has a sufficient number of drainage components been provided in series prior to discharge? 3. Suitable pollution removal capability e.g. % TSS removal (where this is a requirement of the SAB)		✓		CATCHPITS USED, SOFT LANDSCAPING	
FUNCTIONALITY					
Are the design features sufficiently durable to ensure structural integrity over the system design life (residential 100 years and commercial 60 years), with reasonable maintenance requirements?		✓			
Are all parts of the SuDS system outside any areas of flood risk? If not, provide justification and evidence that performance will not be adversely affected.		✓			
Is pumping a requirement for operation of the system? If yes, provide justification and set out operation and maintenance/adoption arrangements.			✓		
Has runoff and flooding from all sources (both on and off site) been considered and taken into account in the design?		✓			
Are 1 in 30 year flows fully conveyed within the SuD system ?		✓			
Are 1 in 100 year flows contained or stored on-site within safe exceedance storage areas and flow paths? Note some approving authorities may require greater return periods.		✓			
CONSTRUCTABILITY					
Has an acceptable construction method statement been submitted and approved?				AT DETAILED DESIGN/ CONSTRUCTION	
MAINTAINABILITY					
Has an acceptable Maintenance Plan been submitted and approved?				AT DETAILED DESIGN/ CONSTRUCTION	
INFORMATION PROVISION					
Do the design proposals include sufficient provision for community engagement and awareness raising?					

(*) to be added on completion of SuDS Manual update

SYSTEM DESIGN ACCEPTABILITY	Summary details including any changes required	Acceptable (Y/N)	Date changes made
Acceptable: Minor changes required: Major changes required / re-design:			

A.9 Local Authority Planning Checklist

Requirement	Comment / Evidence location
A diagram of the proposed scheme showing the outline design of SuDS for the site. This should show where areas drain to, the flow routes for water through the system, where water will be stored and the volume of storage provided for the design rainfall event, the location, capacity and details of flow controls and the discharge point. Exceedance routes should also be indicated or explained.	Fairhurst Drawing 136782-C-4000
Description of likely geology below the site	Geo-Environmental and Geotechnical Preliminary Risk Assessment, Report Fairhurst 126782-R1
Description of existing topography of the site and natural or existing surface water drainage flows and how these have been allowed for in the design;	Statements in FRA
The proposed destination for the surface water	Statements in FRA & drainage strategy
If discharging surface water to a public sewer, developers will be required to provide evidence with the application that capacity exists in the public sewerage network to serve their development in the form of written confirmation. If discharging to infiltration then the developer will need to provide evidence that the site is suitable. This will require a site investigation including infiltration tests (see the 'SuDS Manual');	Infiltration tests commissioned, awaiting results.
Landscaping plans for any open surface features showing how they are integrated into the overall landscape design for the development;	n/a
Health and safety checklist for the scheme	To be completed during detailed design
Demonstrate how interception losses are provided through the provision of SuDS techniques, which absorb water or allow small volumes to soak into the ground. This means that there should be no runoff for the majority of rainfall events up to 5mm depth (i.e. around 50% of all rainfall events). This is achieved by using systems that allow water to soak into the ground, soil or stone layers and allowing for evapotranspiration. Interception losses occur in the top parts of the system or only require low infiltration rates in the soil below, and therefore can be provided even if the ground is not suitable for full infiltration. This is only a small volume of water so is achievable on most if not all sites in Richmond.	n/a Site to discharge via infiltration
Supporting calculations to demonstrate the system has sufficient capacity.	Pipe capacity to be confirmed at detailed design. Quick storage estimates (see FRA) show preliminary attenuation volumes.

Supporting justification for the treatment provision within the system (see the 'SuDS Manual');	n/a
Explanation of the amenity and biodiversity provision within the system and the basis for the design of these aspects. Whilst these are one of the benefits of SuDS, they may not be provided on all smaller developments (especially single houses). However, providing these aspects can create much more pleasant places to live.	Refer to landscape architect plans
Explanation of the maintenance requirements for the system (what to do and the frequency) along with an indication of how lack of maintenance affects the performance of the system (hydraulic and water quality). Indication of the likely annual cost of maintenance.	See FRA / drainage strategy
Drainage Assessment Checklist	See FRA / drainage strategy

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