LONDON BOROUGH OF RICHMOND UPON THAMES

LoDEG

1. Project & Site Details

Project / Site Name (including sub-catchment / stage / phase where appropriate)	St. Mary's Grove Garages, Grena Gardens, Richmond
Address & post code	Grena Gardens, Richmond-upon-Thames (nearest postcode: TW9 1UY)
OS Grid ref. (Easting, Northing)	E 518745
	N 175202
LPA reference (if applicable)	N/A
Brief description of proposed work	Demolition of garages and the construction of 5 elderly person dwellings with disabled parking bay, with retained access and parking for Nos 11-27 Townshend Road
Total site Area	1150 m^2
Total existing impervious area	830 m^2
Total proposed impervious area	700 m^2
Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?	No
Existing drainage connection type and location	Soakaways in central part of the site
Designer Name	Elizabeth Edney
Designer Position	Senior Engineer
Designer Company	Stantec UK Ltd.

2. Proposed Discharge Arrangements

2a. Infiltration Feasibility

Superficial geology classification	Kempton Park Gravel Member
Bedrock geology classification	London Clay
Site infiltration rate	1 x 10-5 m/s
Depth to groundwater level	2.7 m below ground level
Is infiltration feasible?	Yes

2b. Drainage Hierarchy

	Feasible (Y/N)	*Proposed (Y/N)*
1 store rainwater for later use	Y	N
2 use infiltration techniques, such as porous surfaces in non-clay areas	Y	Y
3 attenuate rainwater in ponds or open water features for gradual release	N	N
4 attenuate rainwater by storing in tanks or sealed water features for gradual release	Y	Y
5 discharge rainwater direct to a watercourse	N/A	N/A
6 discharge rainwater to a surface water sewer/drain	N/A	N/A
7 discharge rainwater to the combined sewer.	N/A	N/A

2c. Proposed Discharge Details

Proposed discharge location	nfiltration sub-base of permeable pavemen
Has the owner/regulator of the discharge location been consulted?	N/A

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3. Drainage Strategy

3a. Discharge Rates & Required Storage

	Greenfield (GF) runoff rate (l/s)	*Existing discharge rate (l/s)*	*Required storage for GF rate (m^3)*	*Proposed discharge rate (l/s)*
Qbar	0.2			
1 in 1	0.1	8.5	52	1
1 in 30	0.4	20.9	52	1
1 in 100	0.6	27.1	52	1
1 in 100 + CC			52	1
Climate change allowance used		40%		
3b. Principal Method of Flow Control		N/A discharge via infiltration. Proposed Q rate is filtration rate not runoff rate		

3c. Proposed SuDS Measures

	Catchment area (m^2)	*Plan area (m^2)*	*Storage vol. (m^3)*
Rainwater harvesting	0		0
Infiltration systems	0		0
Green roofs	156	156	11
Blue roofs	0	0	0
Filter strips	0	0	0
Filter drains	0	0	0
Bioretention / tree pits	0	0	0
Pervious pavements	700	194	38
Swales	0	0	0
Basins/ponds	0	0	0
Attenuation tanks	0		0
Total	**856**	**350**	**49**

4. Supporting Information

4a. Discharge & Drainage Strategy	*Page/section of drainage report*
Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	Section 4
Drainage hierarchy (2b)	Section 4
Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	Section 4
Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	Sections 5 and 6
Proposed SuDS measures & specifications (3b)	Section 6
4b. Other Supporting Details	*Page/section of drainage report*
Detailed Development Layout	Appendix TN001-B
Detailed drainage design drawings, including exceedance flow routes	Appendix TN001-B and TN001-D
Detailed landscaping plans	Appendix TN001-B
Maintenance strategy	Section 7
Demonstration of how the proposed SuDS measures improve:	
a) water quality of the runoff?	Section 7
b) biodiversity?	Section 7
c) amenity?	Section 7