

BANNERS GATE

Client: Cala Homes Chiltern

Project Title: 15031-Cotefield Farm, Bodicote, Banbury, Oxon

Rev: -3rd Issue

Date -7th August 2017

Drainage Management Plan

Introduction

This Statement outlines the proposed foul and surface water Drainage Management Plan for the proposed Cala Homes Chiltern residential development at Cotefield Farm, Bodicote.

Surface Water Drainage Strategy

Infiltration testing undertaken in January 2013 by Brownfield Consultancy established the viability of utilising infiltration techniques as a method of surface water disposal over a part of the development site. Further infiltration testing was undertaken in early January & February 2017 to confirm the maximum possible of area of the site which would be suitable for disposal by soakaway.

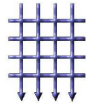
Accordingly, the surface water drainage strategy for the development utilises soakaways for the disposal of surface water run-off from roofs and private driveways in this zone of the site in accordance with SUDs principles. Catchpits and silt chambers have been specified on all connections into soakaways to provide pre-treatment to minimise the conveyance of suspended solids and silt into the soakaways. These soakaways which are located primarily in rear gardens will be maintained by the respective individual house owners.

Surface water run-off from areas with underlying poor infiltration values and adopted carriageways is conveyed by a piped positive gravity system to a length of 3m diameter pipe which is located adjacent to the southern boundary of the Cala development. The surface water drainage serving exclusively the highway surface water run-off will be adopted by Oxfordshire County Council Highways under a Section 38 Agreement.

The discharge from this system is limited to 5.1 l/s using a hydrobrake control with the 3m diameter pipe providing attenuation to accommodate the 100year storm event with an allowance of 30% for climate change.

A portion of the positive drainage system for the Cala site is being offered for adoption by Thames Water Utilities Ltd under a Section 104 Agreement of the Water Industries Act.

A piped gravity outfall from the Cala site, which is also incorporated within the Section 104 Agreement; is routed through third party land by agreement and ultimately discharges into a ditch course some 435m away to the south. This ditch course is a tributary of the Sor Brook. The final section of the surface water outfall to the ditch course is in the form of a reed planted swale which has been provided to enhance water quality and act to dissipate energy and to further reduce the velocity of the surface water discharge.



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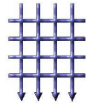
Surface Water Drainage - Management Statement

Infiltration systems require regular maintenance to ensure long-term performance does not deviate from the design standard. A Management Company is to be established to ensure regular maintenance is provided to the off line cellular storage within the public open space area, Oxfordshire County Council Highways will be responsible for the drainage serving the adopted highway as indicated on the attached Section 38 Agreement plans. Thames Water Utilities being responsible ultimately for the adopted system subject to the Section 104 Agreement. The remaining private soakaways will be the responsibility of the individual house owners and the following guidance will be provided to them during the purchase process.

The following tables provide guidance on the type and frequency of maintenance requirements for the infiltration based components.

Schedule	Action	Recommended Frequency
Monitoring	Inspect pre-treatment components and note the rate of siltation and debris accumulation	Monthly during the first year post-construction and thereafter annually
	Monitor water levels within soakaway	Following heavy storms during the first year post-construction and thereafter annually
Regular Maintenance	Remove sediment and debris from pre-treatment components	As required based on inspections
Occasional Maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chambers and inside of concrete manhole rings. These are to include internal surfaces and could involve jetting to remove internal silt build-up.	As required, based on inspections.
Remedial Actions	Reconstruct soakaway	If performance deteriorates or failure occurs

Table 1: Operation and Maintenance requirements for soakaways



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Gully and drainage channels are to be provided to allow surface water runoff to enter the below ground piped drainage network. The following table provides guidance on the recommended type and frequency of maintenance requirements for the positive drainage network.

Schedule	Action	Recommended Frequency
Monitoring	Inspect gully's and drainage channels	Monthly during the first year post-construction and thereafter annually
Regular Maintenance	Remove sediment	As required based on inspections
Remedial Actions	Drain jetting and CCTV Survey if deemed necessary	If blockage occurs

Table 2. Operation and Maintenance requirements for positive drainage network

Operation and Maintenance requirements for reed bed as follows :-

- Annual cutting or grazing to remove dead plant material
- Weed removal as necessary (if decomposing)
- Removed material to be burned or composted preferably off-site.
- Alternatively, subject to agreement with the land owner; a dedicated area may be provided to where cut / dead reeds are deposited to compost.
- If no agreement can be made with the land owner to provide a dedicated composting area then total removal will be required. Replacement reeds to be provided as necessary.

N.B. Reeds are sensitive to water (they generally need to be submerged by 100mm and prefer damp naturally wet soils). Advice should be sought from a landscaper prior to construction.

Residual Risks relevant to maintenance of SuDS structures.

The Designers Risk Assessment has identified a residual risk associated with the depth of the surface water attenuation where it outfalls from the development and a copy of this is attached for reference. This section of pipework and the associated control chamber will ultimately be the responsibility of Thames Water under the previously mentioned Section 104 Agreement.

Please refer to attached drawings 15031-100s104(i)-Sh 1 of 2 Rev J, 15031-100s104(ii)-Sh 2 of 2 Rev H, 15031-100s38 Rev K & Designers Risk Assessment dated 7/9/2015

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For and on behalf of Banners Gate Ltd