

Sustainable Drainage System Maintenance Manual:

This document comprises information pursuant to the discharge of Outline Planning Condition 6 of Application BN/16/12 Land at Pollards Nursery.

Condition 6 states:

"The development shall not commence until full details of the maintenance of the proposed SUDS system is set out in a site-specific maintenance manual and has been submitted to, and approved in writing, by the local planning authority. The manual shall include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life."

The document comprises two sections which when read together form the Maintenance Manual.

- Section 1: comprises a site-specific SuDS Maintenance Plan for the Pollards Nursery including equipment proposed, installation methodology and maintenance guidelines.
- Section 2: comprises information relating to the formation of the Resident Management Company including a standard template which allows for the raising of funds to ensure the ongoing maintenance and financial management of the system outlined within the SuDS Maintenance Plan.

Section 1: SuDS Maintenance Plan



« john newton & partners

jnp group

Consulting Engineers

Report on

SuDS MAINTENANCE PLAN

POLLARDS NURSERY, BARNHAM

For

REDROW HOMES LTD

Prepared by

Luis Brito
Civil Engineer

Approved by

Mike Verity
Principal Engineer

Date

16.12.2015

Ref.

C85102
Revision -

Southern

Brighouse

Midlands

Sheffield

Teesside

DOCUMENT CONTROL SHEET

Project Name: Pollards Nursery, Barnham
Project Number: C85102
Client: Redrow Homes Ltd
Report Title: Sustainable Drainage Systems Maintenance Plan
Reference: RE002

Signed by.....
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Countersigned by.....
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Principal Engineer

FOR AND ON BEHALF OF JNP GROUP

Date: December 15

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Document Issue Record

No.	Date	Description	Prepared	Reviewed	Approved
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1 INTRODUCTION

1.1 Terms of Reference

1.1.1 **jnp group** was commissioned by Redrow Homes to produce a drainage design and associated maintenance plan for the proposed development of the land at Pollards Nursery, Barnham.

1.1.2 This Sustainable Drainage Systems Maintenance Plan sets out how to maintain the full drainage system following construction with details of who is to be responsible for the long-term maintenance.

1.2 Surface Water Drainage

1.2.1 Sustainable Drainage Systems (SuDS) are an environmentally friendly approach to managing rainfall. SuDS techniques use landscape features to deal with surface water with the aim to:

- Control the flow, volume and frequency of water leaving a development.
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces.
- Provide attractive surroundings for the community.

1.2.2 At this outline stage, the surface water drainage strategy for the development utilises SuDS features in the form of attenuation ponds and oil separator. The following sections provide a brief description of these features and outline the maintenance programme to be adopted.

1.2.3 The SuDS features will be predominantly located in public open space. It is understood that these will be maintained by a private management company.

2 SUDS MANAGEMENT AND MAINTENANCE REGIME

2.1 General

- 2.1.1 The SuDS features used within the development are explained further in the following sections and identified on the plans contained within Appendix A.
- 2.1.2 Only trained maintenance personnel will be permitted to undertake maintenance on manholes, catch pits, oil separators or attenuation ponds and this work must be carried out in accordance with the Confined Space Regulations. To facilitate this maintenance, all SuDS are designed to be laid in public open space where possible or where they are reasonably accessible.
- 2.1.3 It is understood that the drainage system for the sites adopted road will be self-contained and adopted by the relevant body.
- 2.1.4 It is understood that the drainage system for the remainder of the site will be maintained by a private management company, appointed by the developer, following construction of the scheme. Management company services will be paid for by the occupants of the site.

2.2 Attenuation Ponds

- 2.2.1 Ponds are a commonly used and cost-effective SuDS technique. Where ponds are designed well and maintained regularly, they can offer important aesthetic, amenity and wildlife benefits to development sites.
- 2.2.2 Regular inspection and maintenance will be required to ensure the long term effectiveness of the pond as both a drainage feature and in terms of its other benefits such as aesthetic.
- 2.2.3 A maintenance buffer will be provided to all ponds from the road network. As the scheme develops, the maintenance and associated access requirements will be formalised.
- 2.2.4 "The SuDS Manual" - CIRIA C753 2015 states that access should be at least 3.5 metres wide, have a maximum cross fall of 1 in 7, and be sufficiently robust to withstand maintenance equipment and vehicles. However temporary access routes for infrequent operations could be considered where permanent routes are not appropriate. The access should extend to the forebay, safety and aquatic benches, inlet and outlet infrastructure. Consideration should be given as to whether maintenance vehicles will need to turn around.
- 2.2.5 The attenuation ponds will be placed in public open space with a suitable maintenance strip to make them easily accessible for maintenance purposes.

2.2.6 A checklist for the maintenance of ponds, to be used by the private management company (or adopting authority), is provided in accordance with "The SuDS Manual" - CIRIA C753 2015 below:

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass – public areas	Monthly (during growing season)
	Cut the meadow grass	Half yearly (spring, before nesting season, and autumn)
	Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
	Inspect inlets, outlets, banksides, structures, pipework etc for evidence of blockage and/or physical damage.	Monthly
	Inspect water body for signs of poor water quality	Monthly (May-October)
	Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once some build-up has occurred, to inform management and disposal options	Half yearly
	Check any mechanical devices, eg penstocks	Half yearly
	Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above pond base; include max 25% of pond surface)	Annually
	Remove 25% of bank vegetation from water's edge to a minimum of 1m above water level	Annually
	Tidy all dead growth (scrub clearance) before start of growing season (Note: tree maintenance is usually part of overall landscape management contract)	Annually
	Remove sediment from any forebay	Every 1-5 years, or as required
	Remove sediment and planting from one quadrant of the main body of ponds without sediment forebay	Every 5 years, or as required
Occasional Maintenance	Remove sediment from the main body of ponds when pool volume is reduced by 20%	With effective pre-treatment, this will only be required rarely, eg every 25-50 years
Remedial Actions	Repair erosion or other damage	As required
	Replant, where necessary	As required
	Aerate pond when signs of eutrophication are detected	As required
	Realign rip-rap or repair other damage	As required
	Repair / rehabilitate inlets, outlets and overflows	As required

2.3 Private Piped Network (areas not adopted by Southern Water)

2.3.1 Whilst the drainage system has been designed to operate with as little maintenance as possible, there are key operations that must regularly be undertaken to ensure that it remains in optimal condition. Most of the operations are routine and should be undertaken for any drainage system. The operations and their maintenance frequencies are summarised below:

Maintenance Schedule	Required Action	Recommended Frequency
Regular Maintenance	Checking of the drains for blockages and damage. Clean and repair if required.	Every three months.
Occasional Maintenance	Desilting of catchpits, gully sumps and channel drains.	First, third and fifth year after completion of works.
	Grating on gullies and channel drains to kept clear of debris	As required.
Remedial Actions	Jetting of pipework to clear blockages.	As required.
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Annually

2.3.2 Specific maintenance needs of the drainage network should be monitored and maintenance schedules adjusted to suit requirements as they arise.

2.4 Full Retention Oil Separator

- 2.4.1 Full Retention Oil Separators are used to treat the most frequent flows with rainfalls events up to 50mm/hour.
- 2.4.2 The removal of sediment and retained oil/grease should be carried out by a contractor holding the relevant permits to transport and dispose of such waste. The contractor must refer to the manufactures guidelines.
- 2.4.3 A log should be maintained detailing the depth of oil found, any oil volume removed and any silt removal or cleaning carried out.
- 2.4.4 A checklist for the maintenance of oil separators, to be used by the private company appointed by the owner, is provided in accordance with "The SuDS Manual" – CIRIA C753 2015 below:

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation	Six monthly
	Change the filter media	As recommended by manufacture
	Remove sediment, oil, grease and floatables	As necessary – indicate by system inspections or immediately following significant spill
Remedial Actions	Replacing malfunctioning parts or structures	As required.
Monitoring	Inspect for evidence of poor operation	Six monthly
	Inspect filter media and establish appropriate replacement frequencies	Six monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly during first half year of operation, then every six months

2.5 Contact

- 2.5.1 In the event of concern over any matter to do with the SuDS please contact:

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Appendix A: Surface Water Drainage Plans







Notes:

1. All dimensions are in meters unless otherwise stated.
2. All dimensions are to the center line of the road unless otherwise stated.
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Approved by the Council on 15/01/2015

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Tender	
Item	Value
1. Site Preparation	100,000
2. Foundation Work	200,000
3. Structural Work	500,000
4. Roofing Work	150,000
5. Internal Finishes	300,000
6. External Finishes	100,000
7. Landscaping	50,000
8. Other	0
Total	1,300,000

REDROW
HOMES

Impgroup
Consulting Engineers

Project Name: [Blank]

Client: [Blank]

Site: [Blank]

Proposed Driveway: [Blank]

Scale: 1:500

Drawn By: [Blank]

Check By: [Blank]

Approved By: [Blank]

Project No: C65/02-D-116

Rev: A

Redrow Homes Limited

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