

Vale Consultancy

CONSULTING CIVIL & STRUCTURAL ENGINEERS

MANAGEMENT & MAINTENANCE PLAN

The Old Thatch
Lower Sandhurst Road
RG40 3TH

Prepared for: Mr & Mrs R Westell
Project Ref: 24061

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CONTENTS

1	INTRODUCTION.....	3
2	MANAGEMENT RESPONSIBILITIES.....	3
3	MANAGEMENT OBJECTIVES.....	3
4	INSPECTION AND MAINTENANCE ACCESS	3
5	MAINTENANCE VISITS OR INSPECTIONS	4
6	GENERAL.....	4
9	TRADITIONAL DRAINAGE	6
10	SUMMARY OF INSPECTION AND MAINTENANCE FOR SUDS.....	6



1 INTRODUCTION

- 1.1 This SuDS Management and Maintenance Plan has been prepared by Vale Consultancy in support of a SuDS scheme for the proposed development at The Old Thatch, Lower Sandhurst Road, RG40 3TH.
- 1.2 The proposed project consists of residential dwelling and associated external works areas, whilst also incorporating a detention basin & permeable surfaces into the scheme to provide interception, amenity & biodiversity across the site.
- 1.3 The scheme incorporates a sustainable drainage system for surface water runoff, which consists of permeable paving and a detention basin.
- 1.4 The method for disposal of surface water runoff is to discharge to the existing drainage field, at a restricted rate.
- 1.5 The purpose of this document is to set out the overall management and maintenance objectives for the proposed SuDS components and to describe the long-term maintenance required to allow the system to continue operating as is intended.
- 1.6 All references to SuDS components are based on the SAB submission drawings:

- **24061_500 – Drainage Strategy**
- **24061_501 - Drainage Details**

2 MANAGEMENT RESPONSIBILITIES

- 2.1 The current site owner(s) shall be responsible for the implementation of the Management and Maintenance Plan. If deemed necessary, all maintenance operations shall be undertaken by suitable and qualified contractor appointed by the site owner.
- 2.2 All inspections and maintenance work must be recorded. This allows for future assessment of the maintenance activities and their response to the system. It can also provide protection against legal claims should the system be exceeded in a storm event leading to flooding elsewhere.

3 MANAGEMENT OBJECTIVES

- 3.1 The site shall be managed and maintained as an attractive, tidy, and safe finish to all landscape elements.
- 3.2 The proposed planting shall enhance the biodiversity and nature conservation interests.
- 3.3 The Site Owner(s) shall ensure establishment and long-term health of all landscape elements for the benefit of the tenants and visual amenity of the area.
- 3.4 Best Health & Safety practices shall always be used.
- 3.5 To monitor standards and make amendments where required, it is expected that the Site Owner will review the management work (with reference to this document) at least quarterly for the first year and annually thereafter.

4 INSPECTION AND MAINTENANCE ACCESS

- 4.1 Access to the site(s) for inspection and maintenance can be gained via the proposed junction accessed off of Lower Sandhurst Road.
- 4.2 Maintenance vehicles can park in the car park areas for maintenance of the various SuDS features as required.



5 MAINTENANCE VISITS OR INSPECTIONS

- 5.1 The Site Owner or appointed maintenance contractor shall carry out a minimum of 12 maintenance visits or inspections per year to check drainage SuDS components. Visits shall be monthly. Additional visits may be needed to deal with extreme weather conditions or specific horticultural requirements.

6 GENERAL

- 6.1 All materials and workmanship are to be to the highest possible standards and shall be in accordance with relevant British Standards, good horticultural and arboricultural practices, and the landscape specification.
- 6.2 The Site Owner shall employ suitably qualified staff for all work and when using sprays and mechanical equipment. All equipment shall be kept in a sound condition, fit for use and purpose.
- 6.3 The Site Owner and their appointed contractors shall comply with all relevant Health and Safety regulations and good working practices.
- 6.4 The Site Owner shall take care when work is beside any structure or paved area and will, at their own cost, be responsible for making good any damage caused.
- 6.5 Weeds, pruning's, leaves, rubbish and other arisings shall be removed from site for composting, where possible. No material shall be left on site, and the area shall be left in a neat and tidy condition after each visit.

7 LITTER COLLECTION

- 7.1 All hard surfacing shall be swept as necessary, and all rubbish removed from site.
- 7.2 Litter picking/clearance shall take place during each maintenance visit and all waste shall be removed from site.
- 7.3 During autumn maintenance visits all fallen leaves shall be collected and removed from site.



8 ORNAMENTAL PLANTING

Specific objectives:

- To ensure early establishment and healthy growth
- To maintain a dense canopy cover
- To maintain year-round appearance and visual interest

Maintenance Operations:

- 8.1 All shrub beds in the detention basins shall be maintained substantially free of weeds. Work shall be done either manually or with appropriate selective weed killer in accordance with manufacturer's recommendations. If weed killer is used the dead weeds shall be removed at the next maintenance visit. Care must be taken to avoid damage to adjacent planting and grass and replaced immediately if affected by weed killer.
- 8.2 Once established, shrubs shall be selectively thinned or reduced in height as appropriate by removal or pruning to allow room for growth and avoid overcrowding/overshadowing and create a natural form rather than cube or cloud shapes. Care shall be taken to avoid over pruning and so creating obvious gaps in the shrub beds.
- 8.3 Ground cover plants shall be clipped or pruned if necessary, to give a neat and tidy finish and contained within the planting bed. Work to remove dead vegetation shall be carried out during the winter months.
- 8.4 Pruning of herbaceous planting:
- 8.5 In spring cut stems close to the 'crown' or 'dormant' top of the plant, avoiding the removal of new shoots.
 - Tidy up the base of the plant, removing dead foliage and debris.
 - Remove all material from site.
 - If necessary, apply a 50mm layer of fine horticultural mulch. This will help moisture retention in the soil, contribute to weed suppression and allow delicate stems to grow.
 - Leave dried flower head over winter for relevant species e.g. ornamental grasses.
- 8.6 Fertilising:
 - One application, just before or at the time of spring growth.
 - A balanced fertiliser is required, one high in Phosphorus (which encourages blooming as well as strong roots and disease resistance). Fertilisers high in nitrogen should not be used as nitrogen promotes excess foliage at the expense of flowers and roots which can result in weak stems



9 TRADITIONAL DRAINAGE

- 9.1 A bi-monthly site inspection should be carried out, checking for any areas that are not operating correctly and collecting/removing litter and debris.
- 9.2 All rainwater pipes, channel drains, gullies and inspection chambers should be inspected biannually, typically spring and autumn.
- 9.3 Any excessive sediment build-up in rainwater pipes, channel drains, gullies or inspection chambers causing blockage or poor performance shall be cleared and cleaned as required.
- 9.4 Geo-cellular attenuation tanks require little to no maintenance. They should however be inspected after every major storm event. For traditional drainage systems it is recommended that a slit trap is incorporated into the pipework at the inlet to the tank. However, in SuDS applications silt and debris is usually removed by upstream SuDS components so there is less need for a silt trap.
- 9.5 Flow control devices provide customised water quantity management for surface water across a wide range of flows and for a variety of applications. The flow control has no moving parts and no power requirements and provides reliable, low-maintenance, engineered flood management. The two most common flow control devices are vortex and orifice plate flow controls. This scheme will incorporate orifice flow controls only and maintenance requirements are as detailed in section 9.

10 SUMMARY OF INSPECTION AND MAINTENANCE FOR SUDS

- 10.1 The following briefly summarises the frequency and type of inspections and maintenance required for the SuDS components and drainage system used in this scheme:

10.2 General

Operation and maintenance requirements for traditional drainage components		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspection of traditional drainage including rainwater pipes, channel drains, gullies and inspection chambers (as applicable).	Bi-annually
	Remove litter or build-up of foliage	Bi-annually (or as required)
Occasional maintenance	Clear channel drains and gullies of silt build up	Every 5 years (or as required)
Remedial Actions	Jet/vac inspection chambers and below ground pipework when blocked or performance is affected due to partial blockages	Every 20 years (or as required)



10.3 Flow control devices / chambers

Operation and maintenance requirements for flow controls		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspection of flow control device including litter and debris removal	Routine maintenance should be undertaken on completion of drainage works and then annually thereafter
	Check emergency drain down (if fitted) is in good working order	
	Check and clean orifice screening device and replace if damaged	
	Check component fixings are secure	
Occasional maintenance	De-silting / sediment removal	As required upon inspection
Remedial Actions	Damage repair	As required upon inspection



10.4 Pervious Paving

Operation and maintenance requirements for Pervious Pavements		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations - pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required - once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation. and/or weed growth - if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually



10.5 Detention basin

Operation and maintenance requirements for detention basins		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Biannually (Spring and Autumn)
	Manage other vegetation and remove nuisance plants	As required
	Inspect inlets, outlets and overflows	Monthly
	Inspect banksides, structures, pipework etc for physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish silt removal frequencies	Monthly (for first year) then as required
	Check and flow control devices (or any mechanical devices, if appropriate)	Annually
	Tidy all dead growth before start of growing season	Annually
	Manage wetland plants (if appropriate)	Annually (or as required)
Occasional maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings (if appropriate)	Every 2 years, or as required
	Remove sediments from inlets, outlet and forebays (if appropriate)	Every 5 years, or as required
Remedial Actions	Repair erosion or other damage by reseedling or re-turfing	As required
	Repair inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required