

Drainage Maintenance Strategy

Manor Court

High Street, Harmondsworth, UB7 0AQ

for

Heathrow 1 Limited

A21138

September 2021

Drainage Maintenance Strategy

Manor Court

for

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Revision	Date of issue	Comments	Prepared By	Checked By
1.0	29.09.2021	Initial Issue	AJ	DB

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Contents

1.0	Introduction.....	1
2.0	Location of Site	1
3.0	Proposed Development.....	1
4.0	Drainage Proposal	2
5.0	Ownership Responsibility	3
6.0	Adoptable Drainage.....	4
7.0	Drainage Maintenance	5
8.0	Suds Maintenance	7

Appendices

Appendix A	Location Plan
Appendix B	Site Plan
Appendix C	Drainage Maintenance Layout

1.0 Introduction

- 1.1.1 Heathrow 1 Limited is planning a proposed development on the site at Manor Court, Aarons Hill, High Street, Harmondsworth, UB7 0AQ.
- 1.1.2 Patrick Parsons has been instructed by Heathrow 1 Limited, to produce a Drainage Maintenance Strategy to assist with discharge of Planning Conditions.
- 1.1.3 This report aims to demonstrate the schedule of maintenance for the proposed development and any ownership responsibilities.
- 1.1.4 The general limitations of this assessment are that:
- Several data sources have been used in compiling this report. Whilst Patrick Parsons believe them to be trustworthy; it is unable to guarantee the accuracy of the information that has been provided by others.
 - This report is based on information available at the time of preparation. There is potential for further information to become available, which may create a need to modify conclusions drawn in this report.

2.0 Location of Site

- 2.1.1 The site is located off High Street in Harmondsworth. A site location plan is enclosed in **Appendix A**.
- 2.1.2 The Local Authority is the London Borough of Hillingdon.

3.0 Proposed Development

- 3.1.1 The proposal is for alterations and conversion of the Manor Lodge into 2 No. 4-bedroom houses; conversion of the Stable Building into 6 No. 1-bedroom and 2 No. 2-bedroom cottages; conversion of the Office Barn into 1 No. studio flat, 1 No. 1- bedroom flat, 2 No. 2-bedroom houses and 1 No. 3-bedroom house; retention of the Granary Building and conversion to garden store; upgrade of boundary treatments; reinstatement of yard pond, together with associated parking and landscaping. A site layout can be found at **Appendix B**.

4.0 Drainage Proposal

4.1 Surface Water Drainage

- 4.1.1 Surface water drainage at the site will follow the Sustainable Drainage Systems (SuDS) management train. The surface water from the site will discharge into the ground via infiltration (soakaways).
- 4.1.2 Details of the proposed surface water drainage system can be found in the accompanying Drainage submission.

4.2 Foul Water Drainage

- 4.2.1 The foul water from the site will discharge into the existing sewer system.
- 4.2.2 Details of the proposed foul water drainage system can be found in the accompanying Drainage submission.

5.0 Ownership Responsibility

5.1.1 The drainage has been separated by ownership as part of this maintenance strategy. The separation is as follows:

Drainage Element	Ownership	Adopted
Private Surface Water system *	Maintenance company appointed by Heathrow 1 Limited	Private
Private / Residential Foul Water System *	Maintenance company appointed Heathrow 1 Limited	Private
Public / Road Surface Water system	Thames Water (offered under S104)	Public
Public / Road Foul Water system	Thames Water (offered under S104)	Public
Sustainable drainage features	Maintenance company appointed by Heathrow 1 Limited	Private
Riparian Foul Plot Drainage	Property Owner	Private
Riparian Surface Water Plot Drainage	Private Owner	Private

***Note*:** Predominately two units or more

6.0 Adoptable Drainage

- 6.1.1 Sewers for Adoption (7th and 6th Edition) are guidance documents used by the water companies to approve and review drainage designs that are offered to them (or vested) for adoption. This is usually via a S104 or similar agreement.
- 6.1.2 As of 1st April 2020, the Design and Construction Guidance documentation will replace both the previous versions and will be mandatory as part of the Code for Adoption agreements.
- 6.1.3 Appendix C of the Design and Construction Guidance (DCG) is in effect the replacement for Sewers for Adoption (SfA) 6th and 7th edition.

6.2 Adoptable Systems

- 6.2.1 The table below indicates the type of drainage element that is currently allowed to be offered for adoption under DCG 2020, with the previous allowances shown for reference.

	SfA6 / 7	DCG	LA	PRIVATE
Rainwater Harvesting	X	X	X	✓
Green Roofs	X	X	X	✓
Infiltration Systems	X	✓	✓	✓
Proprietary Treatment Systems	✓	✓	✓	✓
Filter Strips	X	X	✓	✓
Filter Drains	X	✓	✓	✓
Swales	X	✓	✓	✓
Bioretention Systems	X	✓	X	✓
Trees	X	X	✓	✓
Pervious Pavements	X	X	✓	✓
Attenuation Storage Tanks	✓	✓	✓	✓
Detention Basins	X	✓	✓	✓
Ponds and Wetlands	X	✓	✓	✓

- 6.2.2 The drainage elements on this system are not intended to be offered for adoption.

7.0 Drainage Maintenance

- 7.1.1 Regular inspection and maintenance is particularly important to ensure the effective long-term operation of surface water drainage, sewers and sustainable drainage systems (SuDS).
- 7.1.2 When designing, we have considered the required maintenance over the design life of the project, ensuring sufficient and permanent access to all areas of the system.
- 7.1.3 Maintenance operations can be divided into the following categories:
- Regular (or routine frequent) - this covers items that are carried out typically with a frequency from monthly to annually. It includes item such as inspection and monitoring, litter removal, grass cutting or other vegetation management, sweeping permeable pavements.
 - Infrequent (or routine infrequent) - this covers items that are required typically with a frequency from annually up to 25 years (or possibly greater). It includes items such as wetland vegetation management, silt removal from swales, ponds or wetlands, scarifying and spiking infiltration basins and gravel replacement to filter drains.
 - Remedial (or reactive) - this covers maintenance that is not usually required, but may be necessary as a result of vandalism, accidental damage, rainfall that exceeds the design capacity or similar events. Examples include repair of erosion in a swale or repair of permeable surfaces blocked for example by mixing concrete on them.

7.2 Riparian Responsibility

- 7.2.1 If an occupier owns land adjoining, above or with a portion of the drainage system running through it, they have certain rights and responsibilities. In legal terms they are a 'riparian owner'. If they rent the land, they should agree with the owner who will manage these rights and responsibilities.
- 7.2.2 It is recommended that the owner's appointed Management Company handle the maintenance of all underground drainage and all SuDS devices, with the following exceptions:
- Inspecting and cleaning out any surface mounted hard drainage systems (such as channel drains);
 - Inspecting and cleaning out (or reporting) SuDS systems on a small scale (such as garden ditches and swales).

7.3 Allowing for Replacement

- 7.3.1 The design life of some SuDS elements and drainage elements of the proposed system is shorter than the predicted design life of the development. Therefore, the design and maintenance regime consider any potential replacement works (such as replacing permeable paving).

7.3.2 Regular inspection of the underground drainage system should be as per the tables below.

Operation and maintenance requirements for Surface Water and Foul Systems		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect for sediment and debris in catchpit manholes and gullies. Clean out as required	Twice Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional Maintenance	Remove sediment and debris from catchpits, gullies, attenuation devices and inside of concrete manhole rings	As required, based on inspections
Remedial Actions	Reconstruct and/or replace components, if performance deteriorates or failure/blockage occurs	As required
	Replacement of clogged components (flow restriction)	As required
Monitoring	Inspect silt traps/gullies/catchpits and note rate of sediment accumulation	Monthly in the first year and then annually
	Check flow control chamber and attenuation devices	Annually

8.0 Suds Maintenance

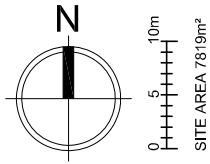
- 8.1.1 Like all drainage systems, SuDS components should be inspected and maintained. This ensures efficient operation and prevents failure. Usually SuDS components are on or near the surface and most can be managed using landscape maintenance techniques.
- 8.1.2 For below-ground SuDS such as permeable paving and modular geocellular storage the manufacturer or designer should provide maintenance advice. This should include routine and long-term actions that can be incorporated into a maintenance plan.
- 8.1.3 The design process considers the maintenance of the components (access, waste management etc.) including any corrective maintenance to repair defects or improve performance.
- 8.1.4 In the absence of legislation funding for the adopter to maintain their SuDS may need to be resolved at the start of the development process to ensure that either the local authority, a maintenance company, local residents or the water company have sufficient resources to maintain the system in the long-term.
- 8.1.5 Further information on maintenance can be found in The SUDS Manual (CIRIA publication C697), which has been used as a guide for this report.
- 8.1.6 The SuDS scheme is unlikely to be handed over for maintenance until all parties are confident that the scheme is constructed and performs as designed. An interim maintenance plan can be incorporated on larger or phased schemes.
- 8.1.7 Maintenance of SuDS drainage should be in accordance with the guidance presented in CIRIA Factsheet “Maintenance of SuDS” May 2017. A detailed maintenance plan for the scheme will be generated by the appointed owner/maintainer of the site or a selected maintenance company and this section is for guidance only.
- 8.1.8 A drawing indicating the proposed typical maintenance and ownership for the scheme has been included at **Appendix C**.

8.1.9 Regular inspection of the sustainable drainage system should be as per the tables below.

Operation and maintenance requirements for RWH systems		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspection of the tank for debris and sediment buildup, inlets/outlets/withdrawal devices, overflow areas, pumps, filters	Annually (and following poor performance)
	Cleaning of tank, inlets, outlets, gutters, withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
Occasional Maintenance	Cleaning and/or replacement of any filters	Three monthly (or as required)
Remedial Actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

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 attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
	Stabilise and mow contributing and adjacent areas	As required
Occasional Maintenance	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
	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 Actions	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

Appendix A Location Plan



MC/17/EX01

Wakelin Associates
Architects



The Old School House Bridge Road Hunton Bridge
Kings Langley Hertfordshire WD4 8RQ
T 0 1 9 2 3 2 6 7 4 8 8
w a k e l i n - a d m i n @ w a k e l i n . c o . u k
w w w . w a k e l i n . c o . u k
© Wakelin Associates 2017

Rev.	Date	Details
Project	Manor Court	High Street
Content	E X I S T I N G	Site Plan
Notes	Figured dimensions to be used in preference to words. The Contractor is to check all the dimensions and set-out and obtain the necessary permissions in respect of any discrepancy revealed before work is put in hand. Description of illustration of proposed systems or products is not to be taken as a guarantee of performance or suitability for the intended use. All rights in drawing and design are reserved to the Architect. Copyright can be reproduced without the Architect's permission. Subject to survey	
North	G	
Drawn By	TH	APR15
Scale	1:500	@A3
Rev.		
Topographical Provided by	MK	
Surveys		

Appendix B

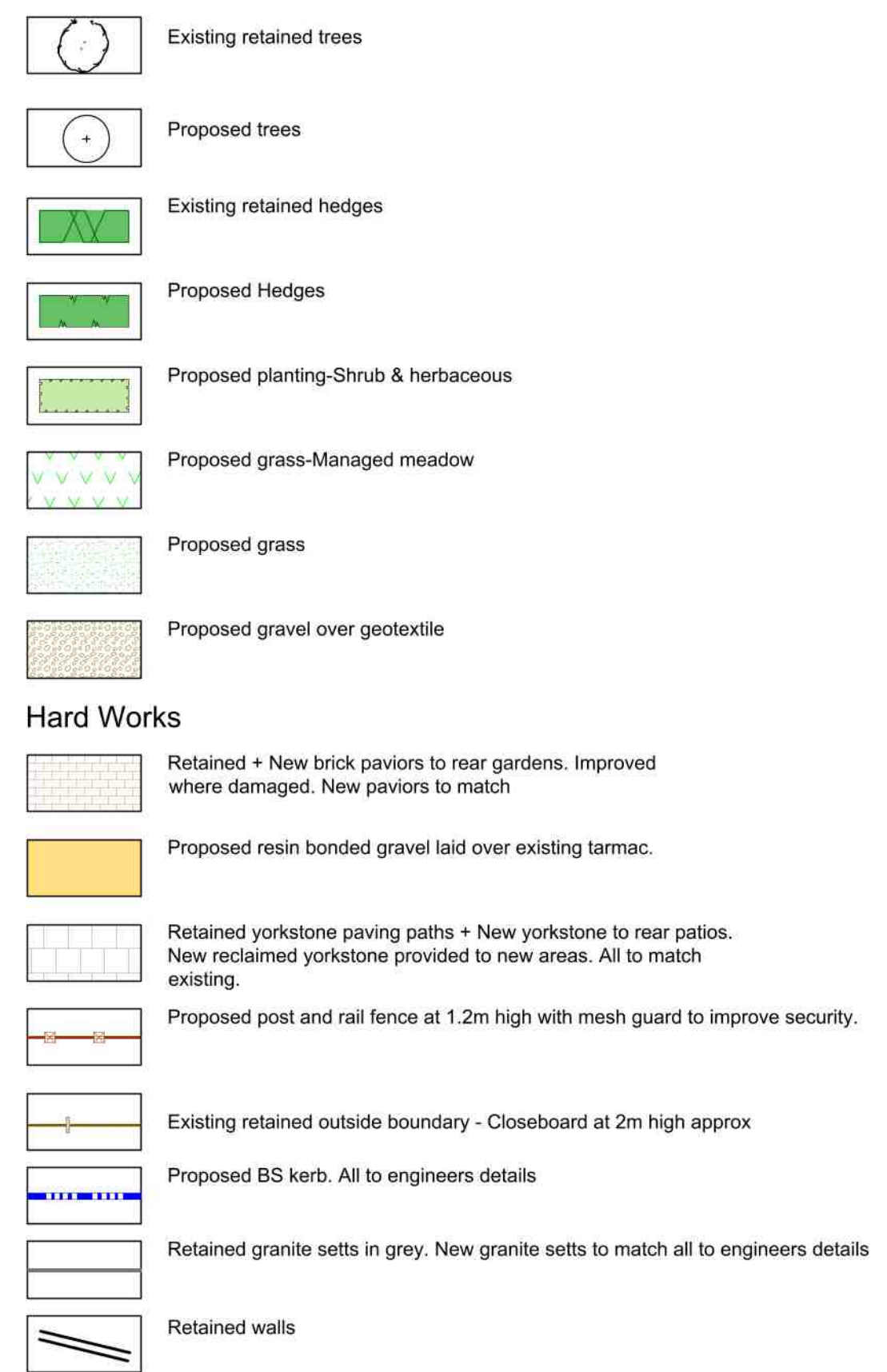
Site Plan

LANDSCAPE PLAN



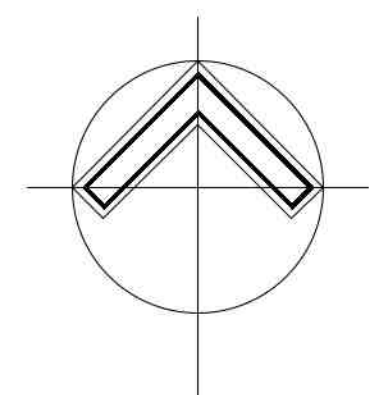
KEY

Soft Works



EXISTING SURVEY SURVEY UNDERNEATH AS
GREY LINE

DRAFT



NOTES

FOR DETAILS ON RETAINING STRUCTURES AND ALL HARD SURFACING - PLEASE REFER TO ENGINEERS/ARCHITECTS DETAILS.
LEVELS TO BE PROVIDED BY ENGINEERS/ARCHITECTS
ALL HARD SURFACING LAID TO FALLS.
SURFACE DRAINAGE - TO BE PROVIDED BY ENGINEERS
FOR RED LINE PLEASE REFER TO ARCHITECTS DRAWING

FIGURED DIMENSIONS ONLY TO BE USED

1. This drawing is to be read in conjunction with all other drawings.
2. Do not scale off this drawing for construction purposes. Written dimensions to be taken only. All dimensions are in millimeters and must be checked on site against Engineers setting out drawings for construction.
3. Any discrepancies found in this drawing or other drawings and specifications in the construction document must be referred to the Designer prior to work commencing.
4. This drawing must not be copied in whole or in part without prior consent of LDC Design Ltd.

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Scale @A1

Drawn by AF

Status

DRAFT

Project Title	MANOR COURT
Client	Heathrow 1 Limited

Drawing Number	10216-GA-01
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Revision
P1

Appendix C

Drainage Maintenance Layout

UK locations:

Ash Vale

Birmingham

London

Yorkshire



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