

SuDS Management Plan

22/00648/OUT. Land South of Markfield Road, Ratby, Leicestershire

Revision 0
September 2024

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1. Site Layout



2. Introduction

This SuDS Management Plan (SMP) has been prepared by Lagan Homes Ltd to enable the discharge of Condition 9 of Outline Planning Approval 22/00648/OUT which following the approval of the Reserved Matters Application will see the proposed development of 75 residential dwellings and associated access and landscaping, amenity areas and SuDS attenuation basin.

As part of the outline planning application the consulting Engineers for the scheme (Pell Frischmann) prepared and it was submitted accordingly to Hinckley & Bosworth Borough Council and in turn the Local Lead Flood Authority (LLFA) the following documents: -

- Flood Risk Assessment (FRA) reference: 106232-PEF-ZZ-XX-RP-YE-000010.
- Sustainable Drainage Report (SDR) reference: 106232-PEF-ZZ-XX-RP-CD-000001.
- Phase 2 Drainage Statement reference: 100032-PEF-ZZ-XX-RP-C-0500.

A summary of the inspection, maintenance and management of the SuDS (Sustainable Drainage System) is provided below and should the Local Water Authority not be accepting of adopting attenuation ponds under Section 104 then it will be managed in perpetuity by a Management Company.

3. Responsibilities

For the proposed general arrangement of the Storm/Foul Water drainage please see: -

Pell Frischmann drawings:

100032-PEF-ZZ-XX-DR-C-0500 for Main Adoptable Drainage (Storm water & Foul water)

100032-PEF-ZZ-XX-DR-C-0505 for Wetland / Attenuation Basin

100032-PEF-ZZ-XX-DR-C-0515 Vortex Flow Control Chamber Detail

BSP Consulting drawing:

MRRD-BSP-ZZ-XX-DR-C-0141 for the existing offsite storm route for Phase 1.

a. SuDS

Part H of the Building Regulations recommends that surface water run-off shall discharge to one of the following. (Listed in order of priority)

1. An adequate soakaway or some other adequate infiltration system, or where that is not reasonably practicable.
2. A watercourse, or, where that is not reasonably practicable.
3. A sewer

The findings within a Phase 2 Ground Investigation Report (GIR) issued by Travis Baker Geo-Environmental Ltd, it was revealed that the under-lying strata across the site is unsuitable for infiltration due to the predominance of mudstone.

Based on the findings and following the requirements as set out in the Building Regulations, the surface water from the Phase 2 development shall be into a watercourse via an adoptable surface water drainage run as constructed as part of the Phase 1 development.

b. Sewers

The sewers have been designed in accordance with 'Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England' (DCG) – March 2020

The sewers will be offered to the Local Water Authority, (Severn Trent Water) under a Section 104 Agreement.

The Foul sewer connection will be subject to a S106 application and subsequent agreement from Severn Trent Water.

Please refer to the Flood Risk Assessment and subsequent Drainage Statement as prepared by Pell Frischmann.

Surface Water

The surface water drainage network has been designed to accommodate the below return periods: -

- 1 in 1 year return period
- 1 in 30 year return period
- 1 in 100 year plus 40% climate change

Foul Water

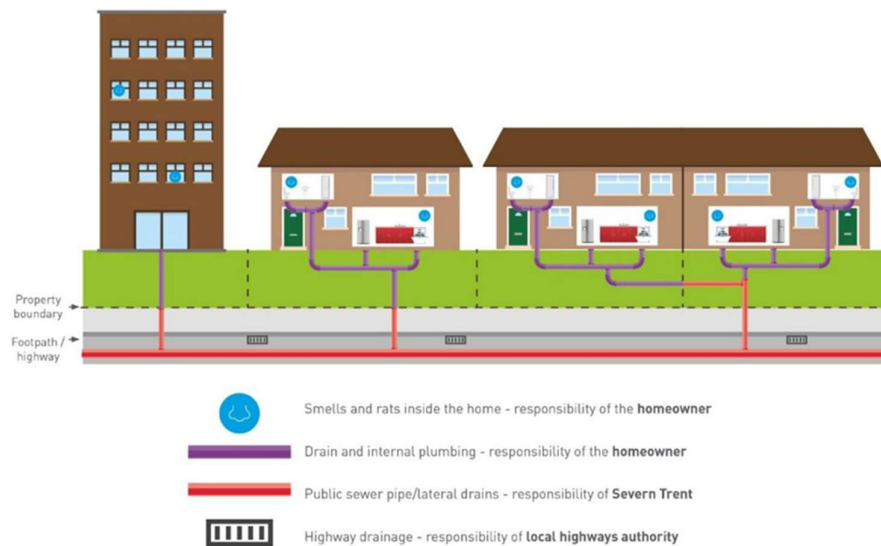
The foul water drainage network has been designed to accommodate the peak flow rate from the total number of dwellings on the site. The peak flow rate is based on 4000 litres per dwellings per day (0.05 litres per second/dwelling) which equates to 3.75l/s.

Please refer to the detailed Sorm & Foul Water drainage layouts

c. Private Sewers

Under current legislation any sewer serving a single property will be the responsibility of the landowner and conveyed to each plot. Any lateral drains and sewers serving more than one property or leaving the property boundary will be the responsibility of and conveyed to the local water authority (Severn Trent Water).

Sewer pipe responsibility



d. Highway Drainage

As part of a Section 38 Agreement with Leicestershire County Council, all gullies and lateral connections will be conveyed to the highways authority and be designed to be compliant with Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England.

Construction

All construction of drainage will take place working backwards from the points of outfall. This is to avoid damage to the newly laid system and reduce the risk of storm water runoff from excavations making its way offsite.

Wherever possible, designated pathways (such as completed driveways) should be used for moving heavy plant to avoid previously laid pipework (risking damage).

Any cut and fill excavation works should only be undertaken in the current active section of the site where drainage is in the process of being installed. This is to ensure that any storm water runoff is either draining naturally as it would be pre-development or is draining into the new system.

By the end of Stage 4 of the surface water management plan, proposed site levels will have been achieved and the site will be ready for further construction works.

Monitoring

All water management structures should be monitored daily by the Main Contractor and after each rainfall event for maintenance purposes.

Any accumulation of sediment or debris should be cleaned out and taken from any storm water flow routes.

If contamination occurs, the affected area is to be excavated and set aside on an impermeable liner to prevent any leaching into the ground.

Determination of the disposal of contamination is to be made by an appropriately qualified Specialist / Engineer during construction and it is expected that this can either be treated locally or removed to an accredited disposal site dependant on the contamination type.

4. Maintenance

a. SuDS Maintenance

The SuDS feature on site, if not to be adopted/maintained by the adopting Local Water Authority will be transferred and maintained by a Management Company as per the recommended schedule below.

As designed in accordance with CIRIA Report C753 'The SuDS Manual', the attenuation wetland pond will have a permanent pool depth of between 600 – 1000mmm. The pool is to act as a water quality treatment zone, and to protect fine deposited sediments from resuspension. (The base of the pool is to be varied to provide an irregular pattern to encourage biodiversity and provide a visually natural form)

	Item	Required Action	Frequency
Regular Maintenance	Pond and surrounding vicinity	Litter / debris removal	Monthly
	Grassland	Grass cutting – for access routes	Monthly (during growing season), or as required
		Grass cutting – meadow grass in and around basin	Half yearly (spring, before nesting season and Autumn)
	Vegetation / invasive plant control	Inspect and manage vegetation and remove nuisance plants	Monthly (for first 3 years, then as required)
		Tidy all dead growth / vegetation before start of growing season	Annually. Care should be taken to avoid nesting birds during breeding season. The typical window for this activity is towards the end of the growing season (September & October)
	Sediment Management	Remove sediment from inlets, outlets	Annually, or as required.
	Safety Signage	Ensure permanent and seasonal safety signs are in-place. Safety equipment (if present should be inspected to ensure available & in good repair	Monthly

Occasional Maintenance	Vegetation	Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter, and cut back adjacent vegetation	Annually
		Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions, if required.	Annually, or if bare soil is exposed over 10% or more of the area
		Prune and trim trees and remove cuttings	2 years, or as required
	Sediment Management	Remove sediment from forebay, when 50% full and from pools if volume reduced by > 25%	3 – 10 years, or as required
Remedial Actions	Pond	Repair of erosion or other damage by re-seeding or returfing	Annually
		Remove and dispose of oils or petrol residues using safe standard practices	Annually
		Re-level uneven surfaces and reinstate design levels	Annually
	Structures	Repair / Rehabilitation of inlets, outlets, overflows or security grilles	As required but critical there is no delay. To be addressed immediately
	Sediment Management	Remove build-up of sediment from upstream & downstream structures or control inspection chambers	As required
Monitoring	Structures	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly / after large storms
		Inspect banksides, structures, pipework for evidence of physical damage	Monthly / after large storms
		Inspect inlets, outlets and surfaces for silt accumulation. Establish appropriate silt removal frequencies	Half Yearly

b. General Sewer Maintenance

The sewers and highways drainage will be adopted by each authority and be maintained in line with their current practices/requirements through legislation.

Throughout the construction phase of the site weekly inspection of the sewers and highways drainage shall take place by the Site Manager to ensure all runs are clear. Prior to adoption the sewers & highways drainage shall be cleaned and jetted through in line with each authorities recommendations.

The below table has been extracted from the Drainage Statement as prepared by Pell Frischmann relating to general Sewer maintenance.

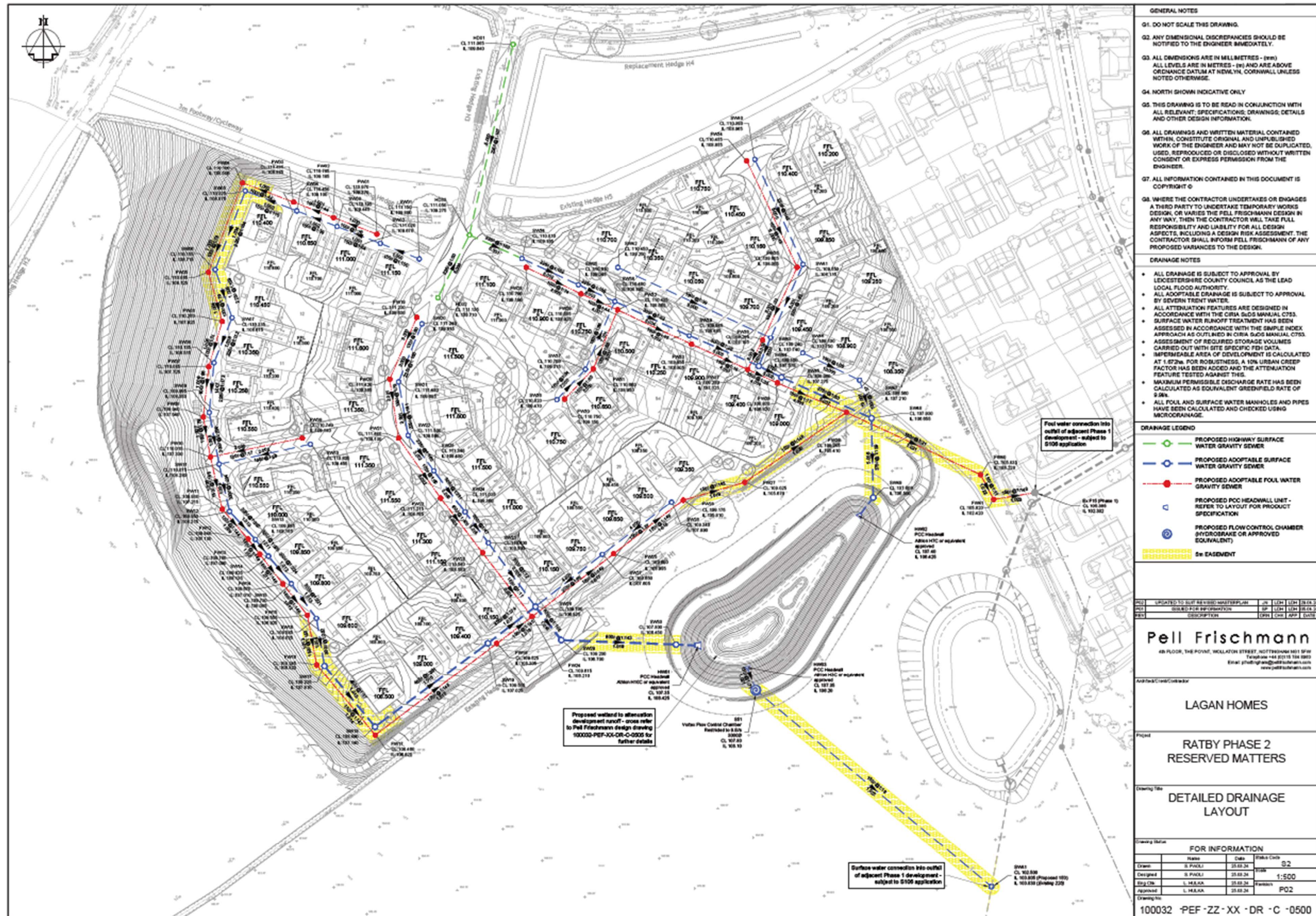
Type	Maintenance Work	Maintenance Frequency
Manholes / Inspection chambers not adopted by the LHA / Sewerage undertaker	Manholes / Inspection chamber openings are to be checked to ensure covers are removal and have no seized since prior inspection. Visual inspection of the internal chamber shall only be conducted is considered necessary and non-intrusive options are inapplicable, such as CCTV or dye testing. Confined space working permits are to be required before any internal inspections are undertaken	Routine inspection every two years
Gravity pipework not adopted by the LHA / Sewerage undertaker	Jet washing of the system to be carried out in order to reduce any siltation build-up / deposited debris within the surface water sewer. Where blockages are encountered an appropriate CCTV condition survey is to be undertaken to investigate the issue	Route inspection every three years
Road gully pots and channel drainage systems not adopted by the LHA / Sewerage undertaker	Pots are to be cleared of debris / siltation build up	Routine exercise every two years
Headwalls (sandbag/concrete)	Suitably qualified personnel to inspect headwall for defects and identified issues assessed and repaired as necessary	Routine inspection every two years
Headwall Trash Screens	Routine checks to be undertaken to remove any debris build-up and material disposed to licensed tip off-site Maintenance of physical trash screen to be undertaken annually, such as hinges, bolts etc to ensure functionality and corroded elements replaced as identified	Routine inspection four times a year, Routine maintenance every year
Flow Control Chambers	Internal chamber to be cleared of any debris / silt build-up in sump. In the event of blockage, the bypass plate is to be opened by utilising the bypass wire affixed to the chamber soffit for drainage of the chamber prior to access by maintenance team. Blockages / defects to be rectified and bypass plate disengaged following completion of maintenance	Routine maintenance every 6 months

5. Conclusion

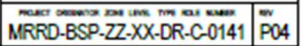
If the above outlined responsibilities and recommended schedule of maintenance is applied to the development in perpetuity, then the development and the SuDS feature will remain functional throughout the lifetime of the development.

Appendix A

Pell Frischmann Drawing No: 100032-PEF-ZZ-XX-DR-C-0500. Detailed Drainage Layout



BSP Consulting Drawing No: MRRD-BSP-ZZ-XX-DR-C-0141. Storm Water Offsite Drainage Route (Phase 1 Existing Drainage)



Appendix C

Pell Frischmann Drawing No: 100032-PEF-ZZ-XX-DR-C-0505. Detailed Wetland Plan

