Pell Frischmann

Land West of Ratby

Sustainable Drainage Report

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S2	P03	Updated to new masterplan	05/09/2024	H. McColl	D. Allum-Rooney	D. Allum-Rooney

Ref. reference. Rev revision. Suit suitability.

Prepared for

Lagan Homes Ltd

Finance House
Beaumont Road
Banbury, Oxfordshire
OX16 1RH

Prepared by

Pell Frischmann

Suite 4.2 – 1 The Poynt
Wollaton Street
Nottingham
NG1 5FW

Pell Frischmann

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Appendices

1 Introduction

1.1 Report Context

1.1.1 Pell Frischmann has been commissioned by Lagan Homes Ltd. to develop a drainage strategy for a site known as Land West of Ratby to support an Outline planning application for a residential and educational use.

1.1.2 This Sustainable Drainage Report (SDR) will set out the principles of the proposed drainage strategy and demonstrate how the local and national guidance has been considered. This will include justification of; specific surface water discharge rates, the volume of attenuation required and sustainable drainage systems to be included.

1.2 Sources of Information

1.2.1 A review of relevant information and guidance from a range of sources has been undertaken and includes the following key documents;

- National Planning Policy Framework (NPPF), December 2023;
- Non-Statutory Technical Standards for Sustainable Drainage Systems, March 2015;
- Water UK, Sewerage Sector Guidance, October 2019;
- CIRIA, C753 The SuDS Manual Version 6, 2015;
- HM Government, The Buildings Regulations 2010, Drainage and Water Disposal (Part H), 2015;
- Leicestershire County Council, Local Flood Risk Management Strategy for Leicestershire, February 2024.

1.2.2 The NPPF specifies that surface water arising from a developed site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development. Opportunities to reduce the flood risk to the site itself and elsewhere, taking climate change into account, should be investigated. The drainage proposals within this strategy have been prepared to meet planning policy requirements.

1.2.3 In their role as Lead Local Flood Authority (LLFA), Leicestershire County Council (LCC) have prepared a supplementary planning guidance document titled ‘Lead Local Flood Authority Statutory Consultation Checklist. This SDR has aligned with these requirements to prepare the necessary information.

1.3 Site Location

1.3.1 The site is located to the west of Ratby, Leicestershire.

1.3.2 A site location plan is included for reference as **Figure** 1.1**.** The application area covers approximately 33ha.

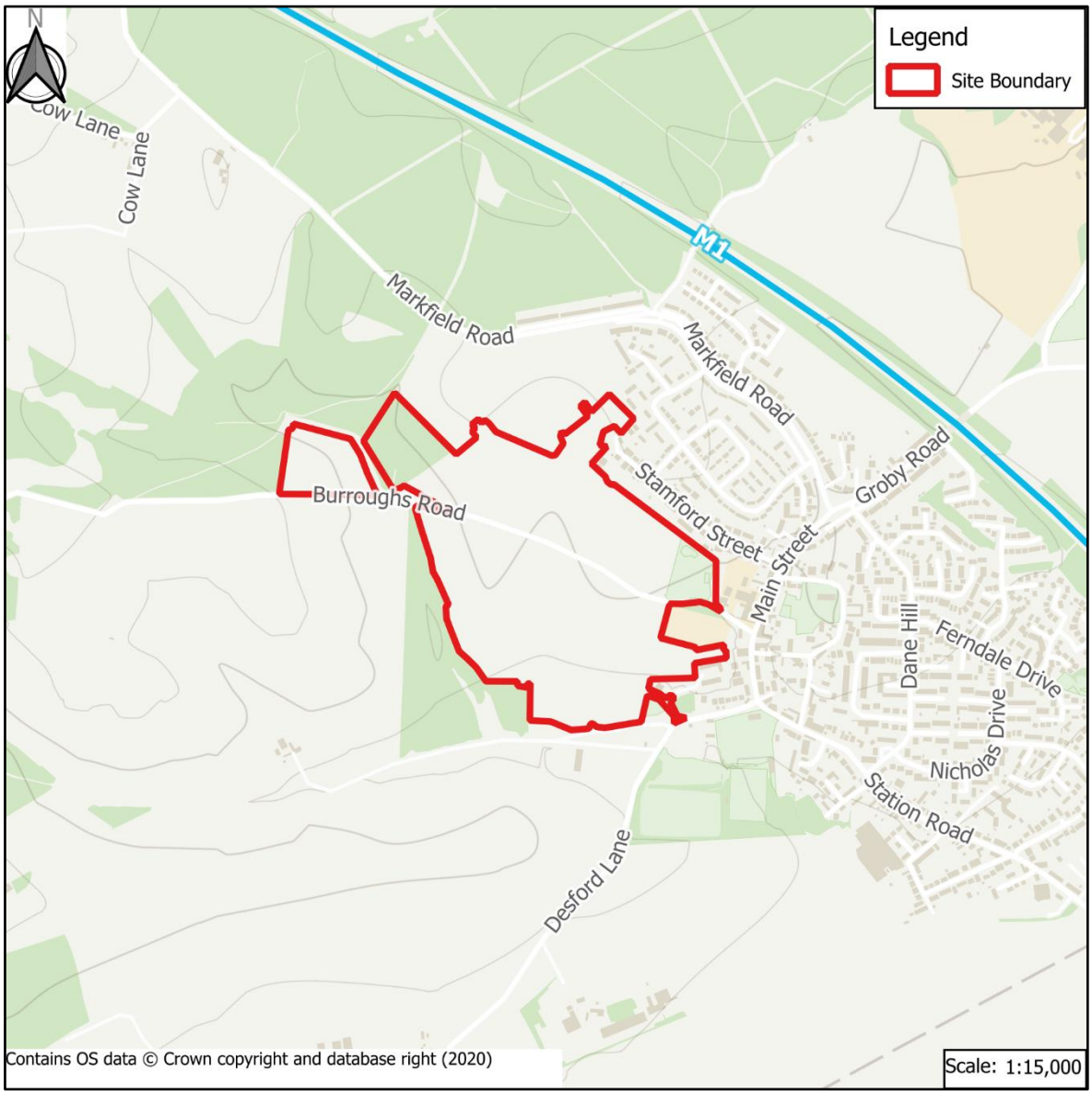

Figure 1.1 - Site Location Plan

1.3.3 The site is bound; to the north by land in use for Phases 1 and 2 of the wider development, to the west by open countryside, to the east by Ratby itself and to the south by an unnamed watercourse.

1.3.4 Aerial mapping shows that the site is currently in use as agricultural land and forests.

1.3.5 The absence of any buildings or significant areas of hardstanding indicate that the site is considered subject to a natural regime of runoff and infiltration, where ground conditions permit.

1.4 Topography

1.4.1 The site falls generally from north to south. Elevations range from a high point of approximately 109mAOD adjacent to Phase 2 to the north and falls to levels of approximately 83mAOD adjacent to the brook at the south of the site.

1.4.2 Greenhatch topographical survey *43724_T Rev 1* has been included for reference as **Appendix A** to this report.

1.4.3 LiDAR data provided by DEFRA, covering the wider area, shown in **Figure** 1.2, shows the elevations in the wider area follow a similar pattern to that on site.

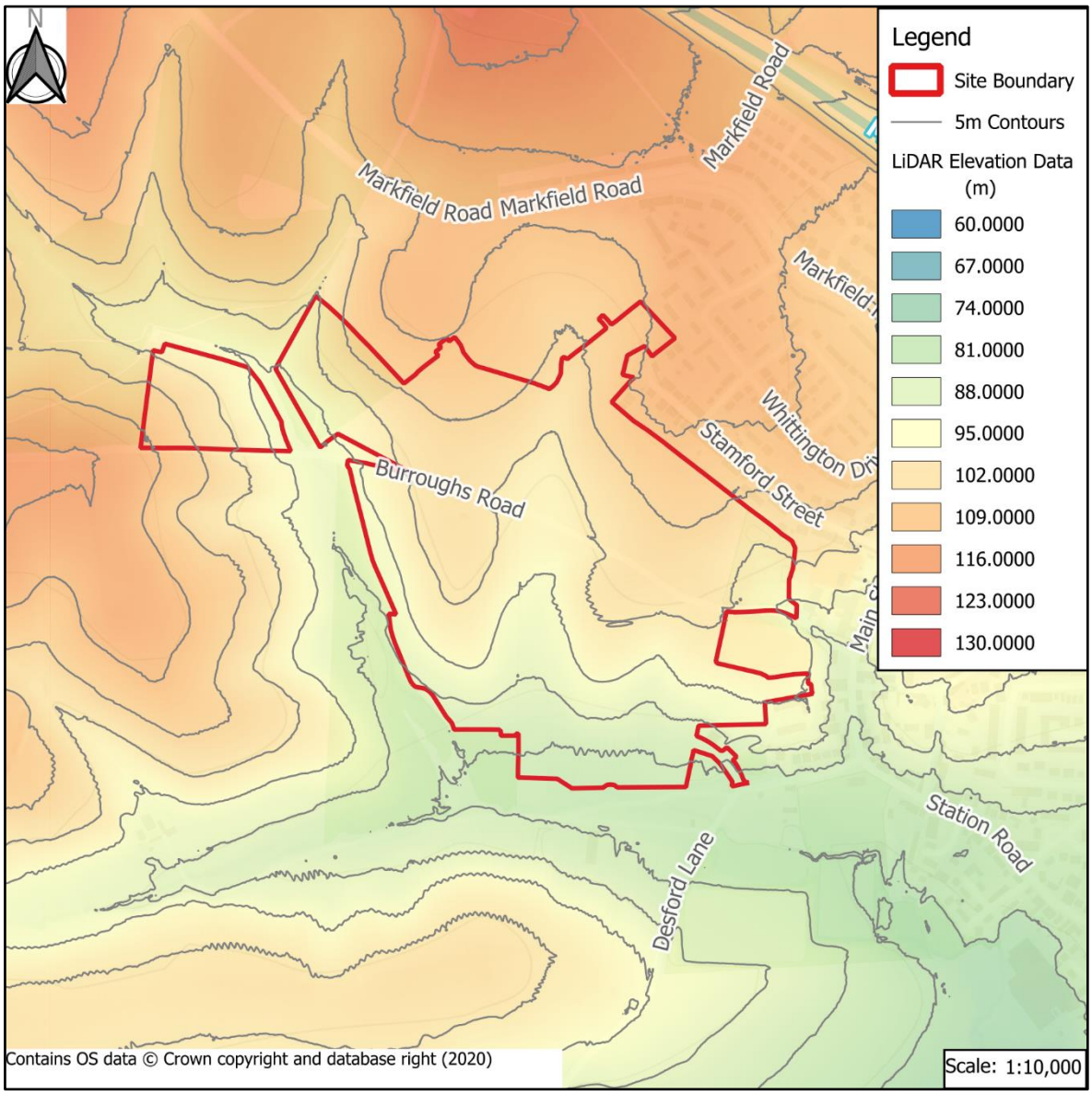

Figure 1.2 - LiDAR Elevation Data

1.5 Proposed Development

1.5.1 Development proposals comprise an Outline planning application (with all matters reserved apart from access) for a phased, mixed-use development comprising about 470 dwellings (Use Class C3) or, in the alternative, about 450 dwellings and care home (Use Class C2). Provision of land for community hub (Use Class F2); provision of land for 1FE primary school (Use Class F1); and associated operations and infrastructure including but not limited to site re-profiling works, sustainable urban drainage system, public open space, landscaping, habitat creation, internal roads/routes, and upgrades to the public highway.

1.5.2 The masterplan for the site on which this drainage strategy has been based can be seen in **Appendix B**.

2 Existing Conditions

2.1 Existing Site

2.1.1 The existing site comprises entirely greenfield areas and therefore is considered to drain entirely via natural means; runoff falling toward watercourses at the low points of the site and infiltrating into the ground where possible.

2.1.2 Sewer records, provided in **Appendix C**, show an extensive surface and foul water sewer network within Ratby itself, conveying water to the south. There are no existing sewers identified within the site however there may be limited assets of land drainage located within the site.

2.1.3 There are several watercourses in the immediate vicinity of the site; an unnamed watercourse running alongside the western boundary of the site, originating from the northwest, an unnamed ditch running south from Burroughs Road conveying runoff generated by the northern half of the site and an unnamed brook flowing west to east along the southern end of the site.

2.1.4 Local watercourses are shown for reference in **Figure** 2.1.

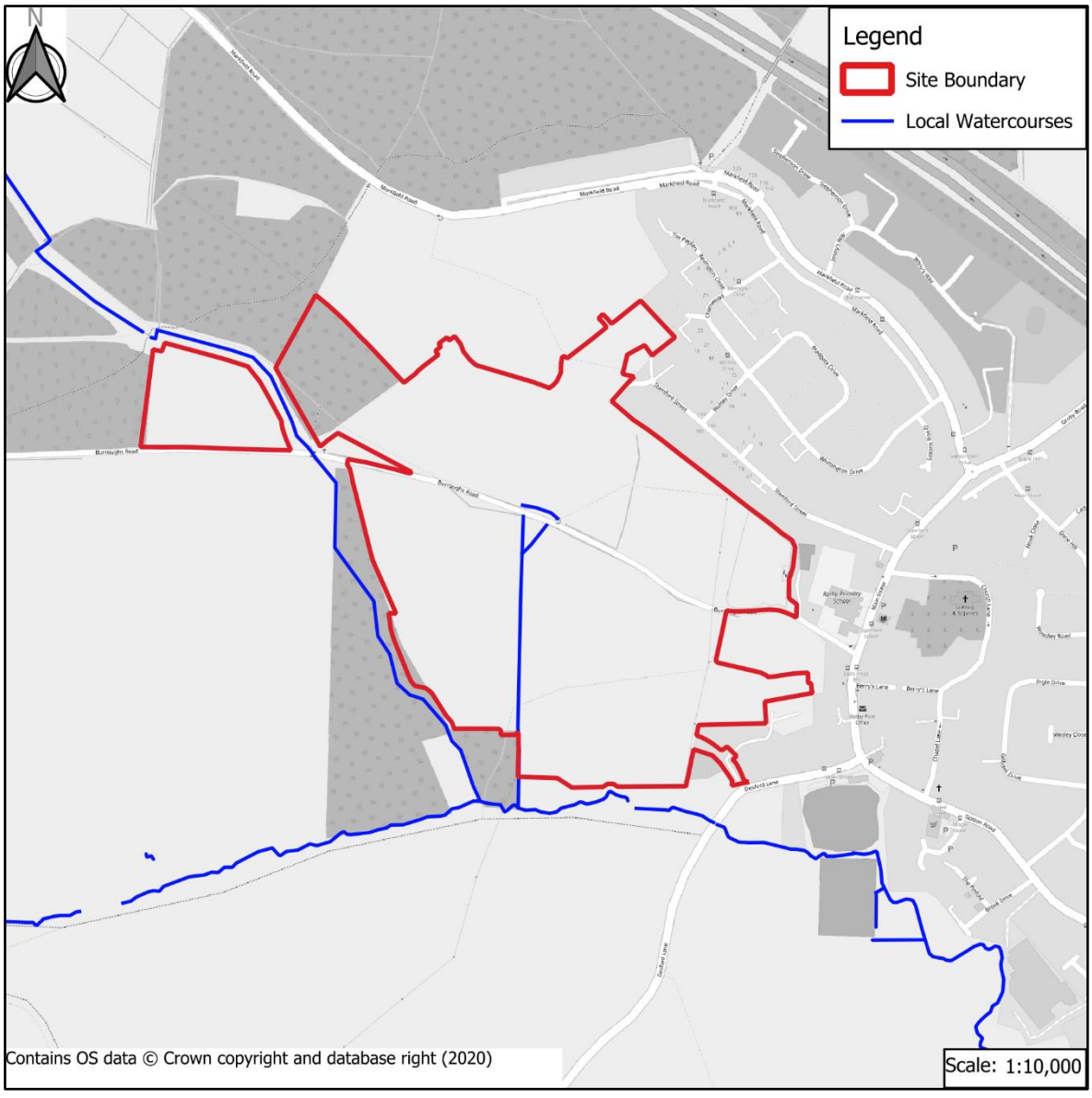

Figure 2.1 - Local Watercourses

2.2 Site Geology

2.2.1 British Geological Survey (BGS) mapping suggests the site is underlain by a mixed superficial geology comprising areas of Thrussington Member in the north and east, with areas of Alluvium found to the south and east following the approximate routes of the unnamed watercourses. The remainder of the site is shown to have no recorded superficial geology.

2.2.2 Mapping shows the site to be underlain by a mixed bedrock geology comprising Gunthorpe Member, Cotgrave Sandstone Member and Edwalton Member.

2.2.3 It is considered that due to the largely clay nature of the bedrock strata, infiltration may not be a feasible means of surface water disposal for the site as a whole. There may however be areas closer to the watercourse in the south where infiltration may be able to be utilised due to the nature of material.

2.2.4 It is considered at this stage that infiltration as a means of surface water disposal is unlikely. Full soakaway testing to BRE365 is required to support further, more detailed drainage designs to satisfy the drainage hierarchy requirements set out in Building Regulations Approved Document H.

2.2.5 It is currently considered that the requirement for infiltration testing should be attached as a condition to any outline planning permission granted, in accordance with the precedent set for Phase 2 of the development (to the north) under outline planning permission reference 22/00648/OUT.

2.2.6 Given the negligible infiltration rates encountered, it is unlikely that infiltration will be a feasible method of outfall for runoff generated by the proposed development.

2.3 Existing Runoff Rate

2.3.1 The overall application site boundary comprises approximately 33ha and is divided into 12 parcels which total an approximate developable area of 14.2ha. This has been taken from the most recent development proposals, available as part of the submission documents accompanying this application with the remainder being used for public open space, landscaping etc.

2.3.2 Within the following outline calculations, the following parameters have been used to assess strategic attenuation.

2.3.3 For residential areas, a 65% impermeability has been assumed and a 10% urban creep factor has been applied.

2.3.4 For areas in use for education, an impermeability of 60% has been assumed.

2.3.5 An assessment of the equivalent greenfield surface water runoff rate from the proposed development areas has been undertaken using HR Wallingford's online greenfield runoff rate estimation tool. This has been carried out using site specific FEH data.

2.3.6 Calculations for the above can be seen in **Appendix D**.

Table 2-1 Greenfield Runoff Rates

Assessed Area (ha)	Runoff Rate			
	1-year (l/s)	QBAR (l/s)	30-year (l/s)	100-year (l/s)
1	3.56	4.29	8.85	11.02
14.2	50.5	60.9	125.7	156.5

2.4 Existing Runoff Volume

2.4.1 An assessment of the existing surface water runoff volume from the entire area (14.2ha) proposed for development has been made for a 1 in 100-year, 6-hour storm.

2.4.2 As the existing site is undeveloped, the runoff volume has been calculated using the Source Control module within MicroDrainage to be 3980m^3 and the results are included within **Appendix E**.

3 Surface Water Strategy

3.1 Drainage Hierarchy

3.1.1 Prevailing local and national guidance suggests that surface water runoff from a development should be disposed of as high up the following hierarchy as reasonably practicable:

- Water reuse, where a need is identified
- Into the ground (infiltration), where ground conditions permit
- To a surface water body
- To a surface water sewer, highway drain, or another drainage system
- To a combined sewer

3.1.2 The aim of this approach is to manage surface water runoff close to where it falls and mimic natural drainage as closely as possible.

3.1.3 As discussed within **Section 2.2** of this report, it is considered at this stage that, subject to further testing, it is unlikely that infiltration will be a feasible means of wholesale disposal of surface water runoff falling on the site.

3.1.4 Given that discharging surface water generated by areas of hardstanding of the proposed development via infiltration is considered, at this stage, to be unlikely, it is proposed to discharge surface water into the various watercourses adjacent to the site.

3.1.5 It is considered that the drainage hierarchy assessment is satisfied by the above.

3.1.6 The locations and routes of outfall are shown on the drainage strategy drawing presented in **Appendix F**.

3.2 Surface Water Attenuation

3.2.1 The overall site application area is approximately 33ha. This includes development space, public open space and associated road infrastructure. The development plots, including associated internal highways and green spaces comprise approximately 14.2ha. Of this area, the site has been divided into 6 functional catchments. A strategic attenuation wetland has been provided for each catchment with consideration of the SuDS treatment train. It should be noted that these catchments will be highly subject to phasing and order of delivery of parcels within the overall development.

3.2.2 Residential plots have been given an assumed impermeability of 65% which accounts for dwelling footprint, driveways, access etc. and excludes areas given over to garden and communal green spaces. These figures may change during detailed design but represent a conservative approach for the current strategy.

3.2.3 Educational areas within the site have been assigned a 60% impermeability.

3.2.4 The total impermeable area contributing to the drainage system is estimated as 10.64ha. Corresponding catchment variables are included for reference on the drainage strategy drawing included as **Appendix F**.

3.2.5 As a runoff rate restriction is required, it is necessary to provide surface water attenuation to balance the excess volume in a safe manner. Sufficient storage is provided for events up to the 1 in 100-year storm with a 40% allowance for climate change. This allowance accords with the peak runoff factors for the Soar Management Catchment Plan produced by DEFRA.

3.2.6 In order to balance the excess surface water runoff generated by the proposed development in a sustainable way, storage will be provided through vegetated attenuation basins. The breakdown of

impermeable areas for the catchments, along with the corresponding discharge rates and approximate attenuation volumes is provided in **Table** 3-1.

Table 3-1 Plot Areas, Runoff Rates, and Volumes of Attenuation

Catchment	Total Area (ha)	Impermeable Area (ha)	Discharge Rate (l/s)	Peak Volume of Attenuation (m^3) under Critical 100-year Event
A	2.04	1.46	8.8	1318
B	2.90	2.07	12.4	1840
C	2.67	1.91	11.5	1693
D	4.36	2.83	18.7	2492
E	1.93	1.38	8.3	1249
F	1.38	0.99	5.9	837
Total	15.28	10.64	65.6	9429

3.2.7 The storage volume required for the catchments have been shown to be provided by numerous strategic attenuation areas across the site. Calculations outlining the above are shown in **Appendix G**.

3.2.8 Although ultimately subject to detailed design, the basins will are proposed to have areas of permanent water under normal conditions and will full up under significant storm events prior to discharge into the receiving watercourse at the catchment greenfield rate.

3.2.9 The wetlands provide sufficient storage capacity for all rainfall events up to the 1 in 100-year event, including a 40% increase in rainfall intensity to account for climate change in line with the Environment Agency's latest guidance on such allowances for the Soar Management Catchment. The storage volumes are calculated based on the restrictions outlined in **Table** 3-1.

3.2.10 In addition to this primary purpose, the attenuation basins will treat the water by naturally filtering out contaminants, provide a pleasant green landscape when not attenuating runoff and enhance biodiversity through wildflower planting and the associated habitats that offers. This achieves all 4 pillars of good SuDS design. Despite this, it is considered that a second level of treatment is required, especially for areas in which the spine road is included. This could take the form of conveyance features e.g. swales and filter drains or dedicated areas dedicated as surface level filter strips adjacent to areas of hardstanding.

3.2.11 An assessment in line with CIRIA SuDS Manual C753's simple index approach shows that the two suggested stages of treatment (wetland and filter drain) are sufficient to treat the critical pollution hazard proposed within the site (the central spine road). This is summarised in **Appendix H**.

3.2.12 The conceptual surface water layout for the development shows the indicative locations of the attenuation basins and SuDS features. This has been included for reference as **Appendix F**.

3.3 Runoff Volume Control

3.3.1 The Non-Statutory Technical Standards for Sustainable Drainage Systems S4-S6 states that where reasonably practicable the runoff volume from a development for the 1 in 100-year 6-hour rainfall event should not exceed the runoff volume prior to development or redevelopment. Additionally, if practicable on previously developed sites, the runoff volume should not exceed the equivalent greenfield runoff volume.

3.3.2 As the site intends to restrict runoff to the equivalent greenfield QBAR rate for all storm events up to and including the 100-year 6-hour plus climate change event, the volumetric criteria for the Non-Technical Standards for Sustainable Drainage Systems are met, and provision of long-term storage is not required.

3.4 SuDS Features

3.4.1 The proposed strategy is based on sustainable drainage principles, employing SuDS features to manage the surface water runoff across the site. Principally, all surface water will ultimately drain through strategic attenuation features and enter local watercourses in the immediate vicinity of the site.

3.4.2 Whilst the attenuation wetlands are principally designed to address the quantity of water that is to be attenuated, they also have water quality benefits, especially if planted with appropriate vegetation. They can also provide additional habitats for wildlife, increasing biodiversity and can increase the amenity of the immediate area.

3.4.3 A wide variety of other SuDS features can also be implemented across the development as the design progresses and this could include, but is not limited to;

- Water butts
- Swales
- Rainwater harvesting systems
- Rainwater gardens
- Permeable Paving
- Filter drains
- Silt traps
- Sump gullies

3.4.4 It is recommended that the final layout uses the proposed road infrastructure to provide drainage exceedance (overland flood flow) routes through the development and towards the attenuation basins for events in excess of the capacity of the drainage system.

3.5 Water Quality

3.5.1 The Simple Index Approach for assessing pollution prevention outlined in the SuDS Manual has been used to quantify the water quality impacts of the proposed SuDS solution to determine their effectiveness.

3.5.2 The proposed use of the development would be considered a medium pollution hazard level due to the anticipated traffic using the proposed spine road so pollution values have been obtained from the SuDS Manual and compared to the mitigation index values as per **Table** 3-2. A summary of the Simple Index Approach is included for reference **Appendix H**.

Table 3-2 SuDS Mitigation Indices (from CIRIA SuDS Manual)

SuDS Component	Mitigation Indices		
	Total Suspended Solids	***Metals***	***Hydrocarbons***
Land Use Pollution Index	0.7	0.6	0.7
Wetland	0.7	0.7	0.5
Filter Drain	0.4	0.4	0.4
SuDS Mitigation Index	**0.9**	**0.9**	**0.7**
Mitigation Requirement Met?	**Yes**	**Yes**	**Yes**

3.5.3 It is therefore considered that when catchments contain areas of the spine road through the site, a strategic wetland provides adequate treatment to runoff when paired with a secondary SuDS feature. Consideration surrounding how this will be delivered will required take place at detailed design stage for the spine road and associated development parcels.

3.6 Maintenance and Adoption

3.6.1 For the proposed surface water drainage system to function correctly, it will need to be appropriately maintained. There are several possibilities for these maintenance responsibilities, they are;

- Severn Trent Water, as the local sewerage undertaker.
- The LLFA or SuDS Approval Body (SAB) (if section 3 of the FWM Act 2010 is enacted)
- A private management company.

3.6.2 Furthermore, there are 3 discrete components to the system – the pipe network, the principal SuDS (strategic attenuation features) and ancillary SuDS (any conveyance or localised attenuation features).

3.6.3 A situation may arise whereby one of the bodies adopts a specific part of the network (the pipe network for example) but not one of the other components. In this case, a combination of adopting bodies may be required and agreements should be put in place to reflect this.

3.6.4 The maintenance schedule for the network must be comprehensive and detail the specific maintenance requirements for each element of the drainage system. The CIRIA SuDS Manual has extensive information relating to the maintenance of SuDS which should be consulted when specifying the requirements.

3.6.5 For pipes, manholes and gullies, both general best practice and specific manufacturer maintenance protocols should be followed. Example maintenance activities and frequencies for the proposed SuDS features are included below.

Table 3-3 Recommended Maintenance Activities for Filter Drains

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter (including leaf litter) and debris from filter drain surfaces, access chambers and pre-treatment devices	Monthly (or as required)
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standard water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt remove frequencies	Six monthly
	Remove sediment from pre-treatment devices	Six monthly, or as required
Occasional Maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required

Table 3-4 Recommended Maintenance Activities for Strategic Attenuation Wetlands

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	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for first year), then annually or required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlets pool – where provided	Annually (as set out in Chapter 23)
Occasional Maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided
Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required

4 Foul Water Drainage

4.1.1 As the site is currently undeveloped, there is no existing foul network serving the site and there are no identified public sewers within the site boundary. However, there is an extensive network serving Ratby to the east of the site, which may provide points of connection for foul water from the proposed development as per the Severn Trent Water records included as **Appendix C**.

4.1.2 For the foul strategy, it is proposed to use foul gravity sewers to convey generated foul water to a low point at the southern end of the site, at which point a pumping station will be used to pump flows to Severn Trent Water's preferred connection point.

4.1.3 Consultation with Severn Trent is ongoing with regards to this connection and will likely require upgrade works to the existing network. This is anticipated to take place subsequent to granting of planning permission, obliging STW to provide capacity.

4.1.4 All foul connections to the existing public sewerage system will need to be approved by Severn Trent Water in accordance with Section 106 of the Water Industry Act. An application for the connections will need to be submitted to Severn Trent Water in due course to obtain approvals prior to the commencement of works.

5 Conclusions & Recommendations

5.1.1 This report and supporting appendices demonstrate that an appropriate surface water drainage strategy has been developed for the site based on sustainable drainage principles in line with the relevant local and national policy and standards.

5.1.2 This Sustainable Drainage Report is intended to support an Outline Planning Application and as such the level of detail included is commensurate with the nature of the proposals. **Table** 5-1 provides a summary of key information.

Table 5-1 Summary of Key Information

Topic	Existing Site		Proposed Development
Site Area (ha)	33		14.2
Impermeable Area (ha)	0		10.6
Number of Sub-Catchments	-		6
Outfall Location(s)	Local Watercourses		Local Watercourses
Peak Runoff Rate (l/s)	QBAR	60.9	60.9
	1 in 30-year	125.7	
	1 in 100-year	156.5	
Proposed Storage Volume (m^3)	-		
SuDS Features	-		Wetlands Filter Drains Swales Other conveyance features
Maintenance Responsibilities	Landowner		Landowner Operators

Appendix A Topographic Survey

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH1	450145.894	306183.647	109.988
GH2	450389.417	306175.214	92.367
GH3	450569.974	306128.973	102.478
GH4	450749.754	306063.458	97.939
GH5	450869.505	305997.721	102.565
S1	450556.370	306518.833	111.184
S2	450660.543	306525.152	111.329
S4	450464.896	306563.497	109.093
BG1	450966.145	305744.334	85.765
BG2	450993.643	305701.365	82.352
BG3	451042.862	305701.957	82.645
BG4	451099.594	305718.658	84.153
BG5	451167.077	305726.403	83.515
BG6	451147.566	305812.017	85.672
BG7	451148.801	305882.960	88.270
BG8	451096.834	305926.444	89.691
BG9	451039.791	305955.536	95.287
WC8	450418.168	306167.586	93.091
WC9	450356.097	306175.781	92.706

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings — *Surveyed Buildings*

This survey has been orientated to the Ordnance Survey (O.S) National Grid OSGB36(15) via Global Navigation Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN15GB & OSGM15GB transformation models.

The survey has been correlated to this point and a further one or more OSGB36 (15) points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:

Buildings	Overhead Cable	IC	Inspection chamber	Bo	Bollard
Wall	Concrete edge	PInv	Pipe invert	IB	Illuminated bollard
Kerb line	Tarmac edge	Gy	Gully	Bin	Rubbish bin
Line marking	Grass verge	Bg	Back gully	Vp	Vent pipe
Drop kerb	Canopy/Overhang	Dp	Down pipe	Grl	Ground light
Centre line	Verge	Pipe	Pipe above ground	Lbox	Letter box
Top of bank	Bottom of bank	MH	Manhole	Stmp	Tree Stump
1	Station and Name	WL	Water level	Sty	Stile
100.000	Station Level	Fl	Flood light	IFL	Internal floor level
		Lp	Lamp post	THL	Threshold level
Bush Sap	Tree / Bush / Sapling	Tp	Telegraph post	Sp	Sign post
	Area of Undergrowth	Ep	Electricity post	TH	Trialhole
	Woodland	Tl	Traffic light	BH	Borehole
		Bus	Bus stop	ELC	Electric
R:	Ridge Level	Sv	Stop valve	BT	British Telecom
E:	Eaves Level	St	Stop tap	C'box	Control box
F:	Flat Roof Level	Er	Earth rod	TT	Tactile
	Gate	Wm	Water meter	BP	Brick paved
Fence types:		Gas	Gas valve	CPS	Concrete paving slabs
I\W	Interwoven	Av	Air valve	CVR	Cover
I\R	Iron Railings	ICU	Unidentified inspection	R/wall	Retaining wall
W\M	Wire Mesh	Wo	Wash out	TWL	Top of Wall Level
P\R	Post & Rail	Re	Rodding eye	TCL	Tree canopy level
P\W	Post & Wire	BB	Belisha beacon	G:	Girth
C\L	Chain Link	CTV	Cable tv	MG	Multi girth
W\P	Wooden Panels	Mkr	Marker post	IC	Inspection chamber
C\B	Close Boarded	Gmkr	Gas marker post	CL:	Cover level
S\P	Steel Palisade	So	Soffit	IL:	Invert level
		Fh	Fire hydrant	UTR	Unable to raise

Rev	Date	Description	Drawn	Q. Ref
4	19.04.24	Survey Extension/ Update	SA	GH20668
3	09.04.24	Markfield Road Extension	MH	GH20526
2	22.01.24	Boundary Update	LB	GH19698
1	13.11.23	Road & Watercourse added	LB	GH19125

greenhatch group

Topographical Surveys
Site Engineering
Utility / CCTV Surveys
Measured Building Surveys
3D Laser Scanning
Revit & BIM Models

Rowan House
Duffield Road
Little Eaton
Derby
DE21 5DR
Tel (01332) 830044 Fax (01332) 830055
admin@greenhatch-group.co.uk
www.greenhatch-group.co.uk

St Albans
Unit B, The Courtyard
Alban Park
St Albans
Hertfordshire
AL4 0LA
t. (01727) 854481

Newcastle
24 Riverside Studios
Amethyst Road
Newcastle Bus. Park
Newcastle-U-Tyne
NE4 7YL
t. (01912) 736391

London
27, Cornwall Terrace Mews
Regents Park
London
NW1 5LL
t. (02072) 241806

CLIENT

Lagan Homes Ltd

PROJECT

Land west of Ratby, Hinckley & Bosworth, LE6 0XZ

TITLE

Topographical Survey

SCALE	DATE
A0@ 1: 1250	25.04.2022
DRAWN	**QUALITY REF**
LP	GH13607

Level datum	See note
Grid orientation	See note
Job number	43724

Drawing No.	Rev.
43724_T	4

Comments

This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

Appendix B Development Masterplan