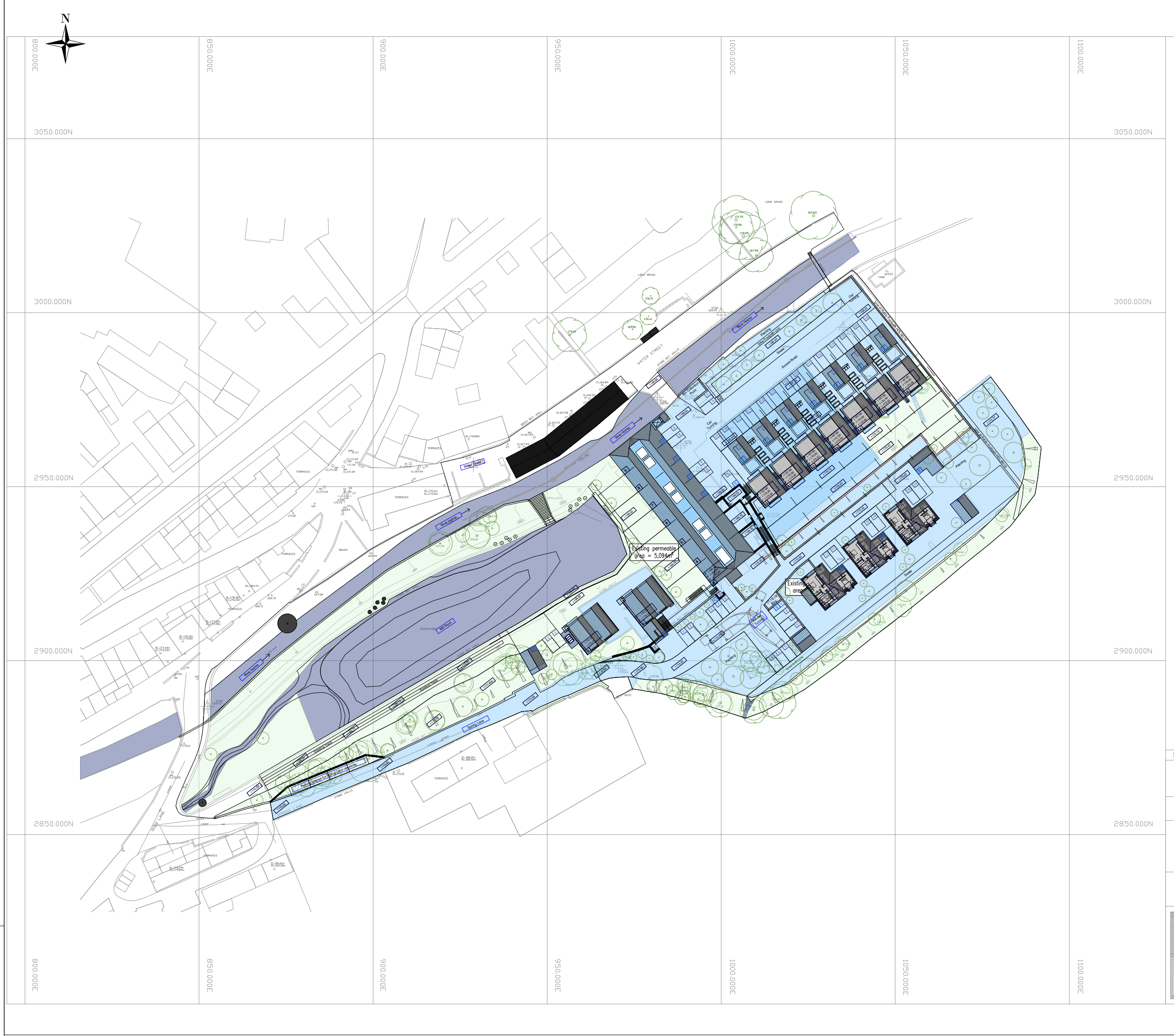


Existing Impermeable Area



Proposed Impermeable Area



NOTES

This drawing is the copyright of the Engineers and may not be reproduced or used except by written permission.

Dimensions must not be scaled from this drawing. The Contractor is to check and verify all building and site dimensions before work is put in hand.

This drawing must be read and checked against any Architects or other specialists drawings.

The Contractor is to check and verify with all Statutory Authorities and the Employer the location and condition of any underground or overhead services or confirm that none exist prior to work commencing on site.

The Contractor shall comply with enactments regulations and working rules relating to safety health and welfare of workpeople.

SUDS Component Summary

CIRIA 697 – Ref Table 1.1		Suitable As An Infiltration Device?	Improves Water Quality?	Reduces Runoff Volume?
SUDS Component Type	Brief Description			
Filter Strips	Wide, gently sloping areas of grass to treat runoff from adjacent impermeable areas.	Yes	Yes (a)	Yes (b)
Swales	Broad, shallow channels covered by grass to convey and store runoff.	Yes	Yes (a)	Yes (b)
Infiltration Basins	Surface depressions to store runoff as part of an infiltration approach.	Yes	Yes	Yes (b)
Wet Ponds	Basins with a permanent pool of water.	No	Yes	No
Extended Detention Basin	Normally dry, designed as open attenuation storage.	No	Yes	No
Constructed Wetlands	Ponds with extension shallow areas.	Yes	Yes	Yes (b)
Filter Drains	Trenches filled with permeable material and perforated carrier drain. French Drain.	Yes	Yes	Yes (b)
Infiltration Devices	Buried storage volumes. Sookaways.	Yes	Yes	Yes
Pervious Surfaces	Constructed pavements designed to allow runoff to infiltrate to sub-base layers. Permeable Paving.	Yes	Yes	Yes (b)
Green Roofs	A vegetative medium installed on top of low pitched roofs.	No	Yes	Yes
Brown Roof	Site won material placed on top of low pitched roofs.	No	Yes	No
Rainwater Harvesting	Roof water collection system, designed to store rainwater for re-use as non-potable water. i.e. toilet flushing, irrigation.	No	No	Yes
Buried Attenuation Storage System	Sealed, buried tank designed to store runoff in conjunction with a flow control device.	No	No	No

SUDS Component Suitability – Project Specific:

SUDS Component Type	Suitability Determination & Reasoning
Filter Strips	Unsuitable, insufficient space on proposed site.
(1) Swales	There is sufficient space on site to incorporate rills both for collecting land drainage from outwith site and to replace carrier drains.
Infiltration Basins	Unsuitable, insufficient space on proposed site.
(2) Wet Ponds	There is an existing Mill pond on-site that will be incorporated into the SW drainage strategy.
Extended Detention Basin	Unsuitable, insufficient space on proposed site.
Constructed Wetlands	Unsuitable, insufficient space on proposed site.
(3) Filter Drains	These may be utilised together with rills for collection and conveyance of land drainage from outwith site..
(4) Infiltration Devices	Permeable areas of the site are underlain by sandy clay which could be suitable for infiltration, this will require targeted in-site infiltration testing to confirm.
(5) Pervious Surfaces (infiltration)	Permeable areas of the site are underlain by sandy clay which could be suitable for infiltration, this will require targeted in-site infiltration testing to confirm.
(6) Pervious Surfaces (storage/filtration/attenuation)	Sufficient car parking area is proposed to provide attenuation within a tanked sub-base (storage/filtration/attenuation).
Green Roofs	Pitched roofs therefore unsuitable for this development.
Brown Roof	Pitched roofs therefore unsuitable for this development.
Rainwater Harvesting	Some areas of roof could potentially provide catchment, however the relatively small areas of the pitched roofs means each system would provide little input per person.
Buried Attenuation Storage System	Not required – it is intended that external hard surfaced areas be utilised as either infiltration/attenuation or filtration/tanked sub-base attenuation.

CATCHMENT AREAS
Total site area = 16,237m²

EXISTING AREAS
Soft = 5,094m²
Hardstanding/Roof = 8,728m²
(Open water = 2,398m²)
Peak flow estimate using greenfield run-off rate of 5l/s/ha + Qbar for impermeable areas = 141 l/s

PROPOSED AREAS
Soft = 7,249m²
Hardstanding area = 3,950m²
Roof area = 2,314m²
(Open water = 2,398m²)
Peak flow estimate using 57mm/hr (Qbar) –30% + greenfield run-off for permeable areas = 73.1 l/s

NB existing and proposed flows calculated using areas excluding area of existing pond.

The limit of flow off site from all discharge points would be 73.1 l/s.

The site will discharge surface water in accordance with the hierarchy set out in Paragraph: 080 Reference ID: 7–080–20150323 of Planning practice guidance, Flood risk and coastal change, in this case discharge will be made via: Existing Mill Structure = existing connections into the river, West cottage cluster = into the existing Mill Pond, East dwelling clusters = into the river utilising existing connections where possible, all with relevant flow control devices as the discharge rate is divided pro-rata based on catchment areas and subject to YW / planning agreement.

MAINTENANCE OF DRAINAGE / SuDS:

All onsite SuDS and drainage systems will require maintenance, as they will remain in private ownership they will be privately maintained.

It is a planning requirement that a maintenance regime be detailed and the Following table outlines a proposed maintenance regime for below ground drainage on site.

In addition it is advisable that all on-site drainage, both foul and surface should be inspected following the first rainfall event post completion and then inspected monthly for the remainder of the first quarter post completion.

Item	Visual Inspection	Cleanse / De-sludge	CCTV Survey	Comments
Foul Drainage System (pipework, chambers etc.)	5 years	10 years	10 years	Cleansing to be carried out as necessary
Surface Water Drainage System (pipework, chambers etc.)	5 years	10 years	10 years	Cleansing to be carried out as necessary
Surface Water Drainage Attenuation Tank	5 years	10 years	10 years	Cleansing to be carried out as necessary
Surface Water Drainage permeable/pervious surfacing		Annual	N/A	Refer to manufacturers recommendations.
Surface Water Swales/Ponds	Monthly	visual inspection, remove litter, (during growing season) cut grass to max 150mm length, remove nuisance plants,		
	Half yearly	inspect outlets and facility surface for silt accumulation, establish appropriate silt removal frequencies, inspect vegetation coverage,		
	If bare soil >10% surface area			reseed areas of poor vegetation growth, altering plant species as appropriate
Gullies/Channels	1 year	1 year	N/A	Cleansing to be carried out as necessary
Catchpits	1 year	1 year	N/A	Cleansing to be carried out as necessary
Proprietary Products	3–6 months			Refer to individual manufacturers recommendations.

CONCLUSION:

Should SUDS mechanisms be implemented on this site, water volume will be reduced through component (1), (2), (3) (4)/(5) and (6) and the Local Sewerage Undertaker's requirements will be met by component.

16.09.22	Site layout updated, areas updated to suit.	JA	EV	P5
03.11.21	Site layout updated, areas updated to suit.	AD	–	P4
12.05.21	Site layout updated, areas updated to suit.	AD	–	P3
10.02.21	Site layout updated, areas updated to suit.	AD	–	P2
04.02.21	Initial issue	AD	–	P1
Date	Description	Drawn	Chkd	Rev

Drawing Status	Preliminary
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Project	Hinchliffe Mill
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Title	SUDS Assessment
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Org Scale	Drawn	Checked	CHG Job No.
1:1000 @ A1	AD	chk'd	G560

Drawing Number	Revision
G560-CHG-XX-00-DR-C-0001	P5

Notes:
(a) With or without infiltration.
(b) With infiltration only

Do not scale

