Environmental Statement Addendum
Chapter 5 Appendices:
Appendix A: Foul Water
Appendix B: Masterplan
Appendix C: Microdrainage Calculations
Appendix D: Surface Water Drainage Strategy

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Chapter 5
Appendix A: Foul Water

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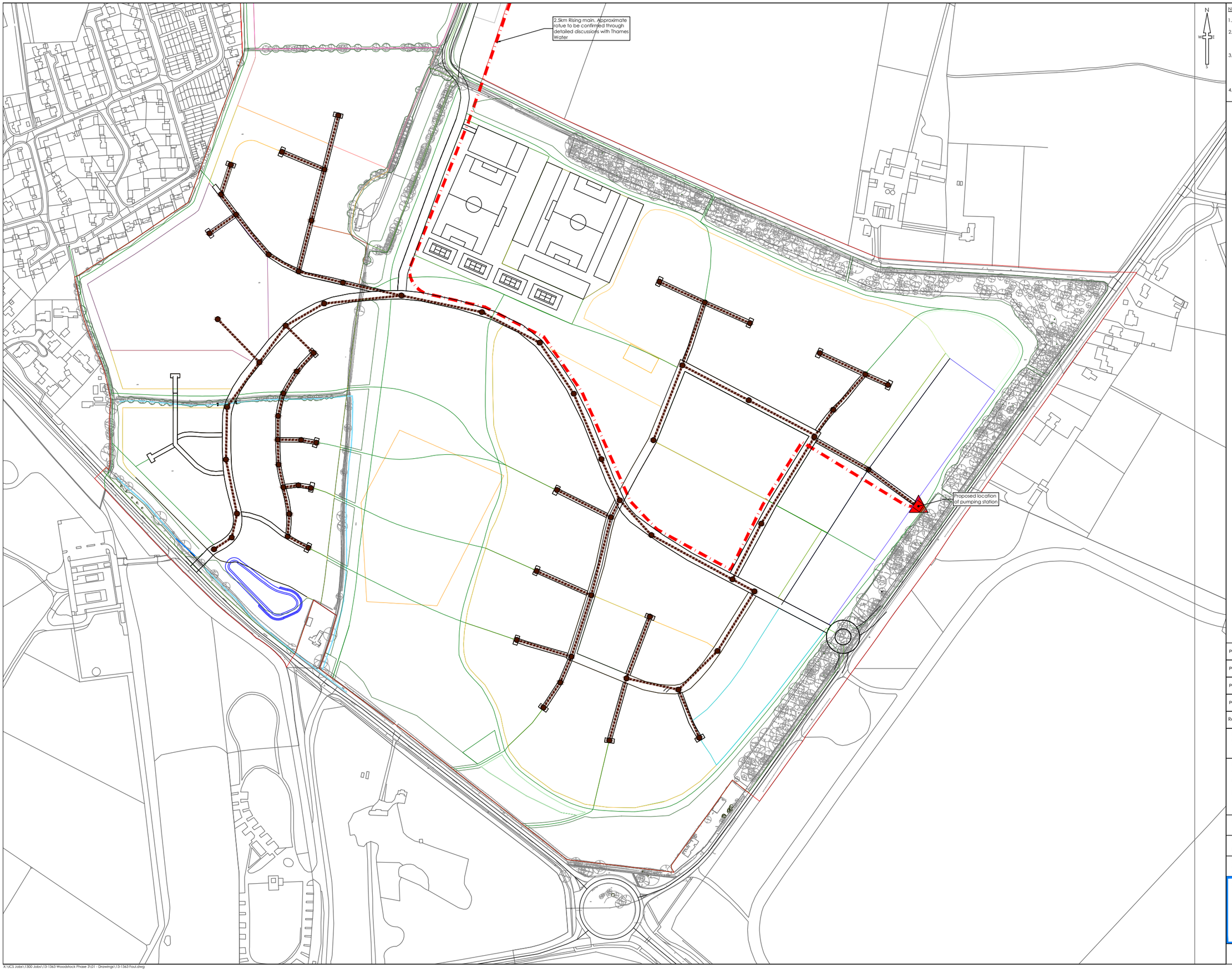

NOTES

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Rev	Drawn by	Chk'd by	Comments	Date
P04	NJ	DJ	Amended in accordance with latest architectural site plan (SK114)	18/05/15
P03	NJ	DJ	Drainage amended in accordance with revised Architectural site layout (SK012 Rev E)	21/11/14
P02	ATD	TST	Route of rising main amended	05/11/14
P01	ATD	TST	Initial issue	05/11/14

DRAWING TITLE
Site Wide Drainage Strategy Plan
Foul Water

PROJECT
Woodstock East
Woodstock
Oxfordshire

DESIGNED BY	DRAFTED BY	APPROVED BY
TST	ATD	DJ

DATE 05/11/2014

STATUS **INFORMATION**

SCALE 1:2500 @ A1

Scale bar @ 1:2500 (0m, 62.5m, 125m)

CLIENT PYE

Infrastruct CS Ltd

JOB NUMBER 13-1363

DRAWING NUMBER 103

REVISION P04

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Chapter 5
Appendix B: Masterplan

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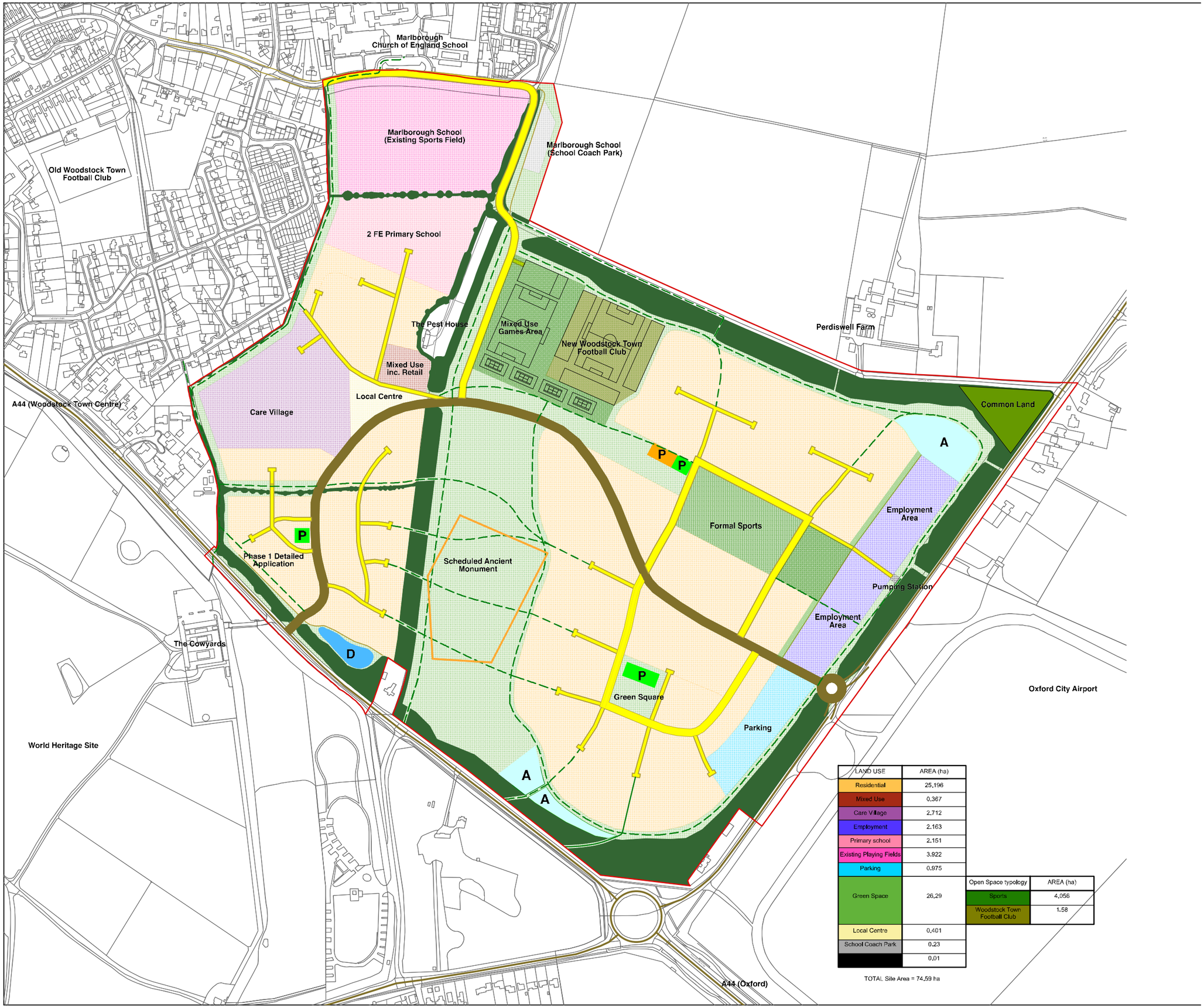

LAND USE	AREA (ha)
Residential	25.196
Mixed Use	0.367
Care Village	2.712
Employment	2.163
Primary school	2.151
Existing Playing Fields	3.922
Parking	0.975
Green Space	26.29
Local Centre	0.401
School Coach Park	0.23
	0.01

Open Space typology	AREA (ha)
Sports	4.056
Woodstock Town Football Club	1.58

TOTAL Site Area = 74.59 ha

Framework

- Red Line Site Boundary
- Pedestrian and/ or Cycle Path
- Designated Scheduled Ancient Monument
- Primary road corridor with predominantly segregated footpath and cycle route
- Secondary road corridor
- Common Land
- A — Allotments
- P — Play Area (Children)
- P — Play Area (Youth)
- Green Space
- Formal Sports
- New Woodstock Town FC
- D — Attenuation Pond
- Natural Amenity Green Space
- Local Centre
- Pumping Station

Rev	Date	Revisions	Initials	Checked

Woodstock East
Oxfordshire

Land Use Plan

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Date	05/05/2015
Scale	1:5000@ A1
Drawn	IG
Checked	HS

Job	Dwg No.	Rev.
273	SK114	-

Doc. Ref: QF 34 - 11

Chapter 5
Appendix C: Micro Drainage Calculations

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Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 418 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow Σ (l/s)	Max Volume (m^3)	Status
15 min Summer	88.328	0.628	0.0	44.0	44.0	1000.8	O K
30 min Summer	88.515	0.815	0.1	44.0	44.1	1299.7	O K
60 min Summer	88.664	0.964	0.2	44.0	44.2	1578.2	O K
120 min Summer	88.768	1.068	0.3	44.0	44.3	1799.0	Flood Risk
180 min Summer	88.800	1.100	0.3	44.0	44.3	1872.5	Flood Risk
240 min Summer	88.805	1.105	0.3	44.0	44.3	1883.6	Flood Risk
360 min Summer	88.784	1.084	0.3	44.0	44.3	1835.9	Flood Risk
480 min Summer	88.758	1.058	0.3	44.0	44.3	1776.2	Flood Risk
600 min Summer	88.731	1.031	0.3	44.0	44.3	1717.2	Flood Risk
720 min Summer	88.704	1.004	0.2	44.0	44.2	1660.7	Flood Risk
960 min Summer	88.651	0.951	0.2	44.0	44.2	1552.0	O K
1440 min Summer	88.541	0.841	0.1	44.0	44.1	1346.3	O K
2160 min Summer	88.370	0.670	0.0	44.0	44.0	1064.7	O K
2880 min Summer	88.201	0.501	0.0	44.0	44.0	818.5	O K
4320 min Summer	87.977	0.277	0.0	44.0	44.0	448.8	O K
5760 min Summer	87.847	0.147	0.0	44.0	44.0	232.6	O K
7200 min Summer	87.798	0.098	0.0	43.0	43.0	153.7	O K
8640 min Summer	87.784	0.084	0.0	37.1	37.1	132.8	O K
10080 min Summer	87.775	0.075	0.0	32.9	32.9	117.0	O K
15 min Winter	88.410	0.710	0.0	44.0	44.0	1126.5	O K
30 min Winter	88.606	0.906	0.2	44.0	44.2	1465.2	O K
60 min Winter	88.762	1.062	0.3	44.0	44.3	1786.7	Flood Risk
120 min Winter	88.874	1.174	0.4	44.0	44.4	2052.6	Flood Risk
180 min Winter	88.913	1.213	0.5	44.0	44.5	2153.1	Flood Risk
240 min Winter	88.925	1.225	0.5	44.0	44.5	2182.7	Flood Risk
360 min Winter	88.916	1.216	0.5	44.0	44.5	2159.6	Flood Risk
480 min Winter	88.888	1.188	0.4	44.0	44.4	2088.0	Flood Risk
600 min Winter	88.856	1.156	0.4	44.0	44.4	2006.9	Flood Risk

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	128.285	30
30 min Summer	84.226	44
60 min Summer	52.662	72
120 min Summer	31.800	130
180 min Summer	23.353	188
240 min Summer	18.644	246
360 min Summer	13.543	342
480 min Summer	10.792	396
600 min Summer	9.043	458
720 min Summer	7.823	522
960 min Summer	6.219	658
1440 min Summer	4.493	928
2160 min Summer	3.241	1324
2880 min Summer	2.568	1700
4320 min Summer	1.847	2388
5760 min Summer	1.461	3016
7200 min Summer	1.217	3672
8640 min Summer	1.048	4408
10080 min Summer	0.923	5136
15 min Winter	128.285	30
30 min Winter	84.226	44
60 min Winter	52.662	72
120 min Winter	31.800	128
180 min Winter	23.353	186
240 min Winter	18.644	242
360 min Winter	13.543	354
480 min Winter	10.792	456
600 min Winter	9.043	490

Summary of Results for 100 year Return Period (+30%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
720 min Winter	88.826	1.126	0.4	44.0	44.4	1933.1	Flood Risk
960 min Winter	88.759	1.059	0.3	44.0	44.3	1779.2	Flood Risk
1440 min Winter	88.609	0.909	0.2	44.0	44.2	1470.0	O K
2160 min Winter	88.355	0.655	0.0	44.0	44.0	1040.8	O K
2880 min Winter	88.109	0.409	0.0	44.0	44.0	676.2	O K
4320 min Winter	87.830	0.130	0.0	44.0	44.0	205.4	O K
5760 min Winter	87.785	0.085	0.0	37.5	37.5	134.2	O K
7200 min Winter	87.771	0.071	0.0	31.4	31.4	111.7	O K
8640 min Winter	87.761	0.061	0.0	27.0	27.0	96.3	O K
10080 min Winter	87.754	0.054	0.0	23.9	23.9	84.5	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
720 min Winter	7.823	564
960 min Winter	6.219	716
1440 min Winter	4.493	1008
2160 min Winter	3.241	1416
2880 min Winter	2.568	1788
4320 min Winter	1.847	2348
5760 min Winter	1.461	2944
7200 min Winter	1.217	3680
8640 min Winter	1.048	4416
10080 min Winter	0.923	5104

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time / Area Diagram

Total Area (ha) 4.377

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	1.459	8-12	1.459	12-16	1.459

Model Details

Storage is Online Cover Level (m) 89.000

Complex Structure

Tank or Pond

Invert Level (m) 87.700

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1550.0	0.600	1450.0	1.200	1750.0	1.800	0.0	2.400	0.0
0.100	1600.0	0.700	1500.0	1.300	1800.0	1.900	0.0	2.500	0.0
0.200	1650.0	0.800	1550.0	1.400	0.0	2.000	0.0		
0.300	1700.0	0.900	1600.0	1.500	0.0	2.100	0.0		
0.400	1750.0	1.000	1650.0	1.600	0.0	2.200	0.0		
0.500	1400.0	1.100	1700.0	1.700	0.0	2.300	0.0		

Swale

Infiltration Coefficient Base (m/hr)	0.00360	Length (m)	390.0
Infiltration Coefficient Side (m/hr)	0.00360	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	500.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	88.300	Cap Infiltration Depth (m)	0.000
Base Width (m)	1.0		

Depth/Flow Relationship Outflow Control

Invert Level (m) 87.700

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	44.0000	0.700	44.0000	1.300	44.0000	1.900	44.0000	2.500	44.0000
0.200	44.0000	0.800	44.0000	1.400	44.0000	2.000	44.0000	2.600	44.0000
0.300	44.0000	0.900	44.0000	1.500	44.0000	2.100	44.0000	2.700	44.0000
0.400	44.0000	1.000	44.0000	1.600	44.0000	2.200	44.0000	2.800	44.0000
0.500	44.0000	1.100	44.0000	1.700	44.0000	2.300	44.0000	2.900	44.0000
0.600	44.0000	1.200	44.0000	1.800	44.0000	2.400	44.0000	3.000	44.0000

Chapter 5
Appendix D: Surface Water

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School site surface water design by others. Impermeable area included within pond calculating and connections to provided.

Care village site surface water design by others. Impermeable area included with pond calculations and connections provided.

Area of archeological interest

Existing ditch retained

Existing Ditch system

Proposed attenuation pond to retain flows associated with 1:100yr storm event plus 30% for climate change

Outfall from pond into adjacent ditch at an attenuated rate equal to 44l/s of western half of development site.

N
W E
S

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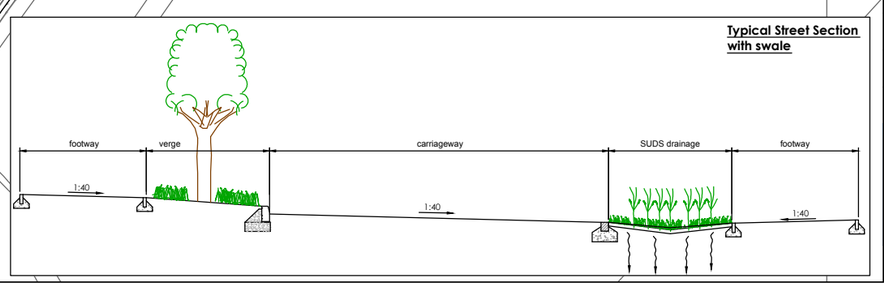
Key

- Permeable paved roads
- Impermeable road drained by swale
- Impermeable road drained to positive drainage system
- Proposed hardstanding & roof areas to be drained via infiltration measures
- Proposed hardstanding & roof area to be drained via positive system into existing ditch systems via detention basin.

Typical Street Section with swale



Rev	Drawn by	Chk'd by	Comments	Date
P03	NJ	DJ	Amended in accordance with latest architectural site plan (SK114)	18/05/15
P02	NJ	DJ	Drainage amended in accordance with revised Architectural site layout (SK012 Rev E)	20/11/14
P01	NJ	TST	Initial issue	08/10/14

DRAWING TITLE
Site wide Drainage Strategy Plan
Surface Water

PROJECT
Woodstock East
Woodstock
Oxfordshire

DESIGNED BY	DRAFTED BY	APPROVED BY
TST	NJ	DJ

DATE 08/10/2014

STATUS **INFORMATION**

SCALE 1:2500 @ A1

0m 62.5m 125m
Scale Bar @ 1:2500

CLIENT
PYE

Infrastruct CS Ltd

JOB NUMBER 13-1363 | DRAWING NUMBER 100 | REVISION P03

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