Depth interpolated from the topographical survey. Full CCTV survey will be required to confirm exact location and level.

Adoptable SW network to discharge to public sewer network, subject to S106 agreement.

MH SW06 (Flow Control)
Flow in manhole SW06 restricted to 60l/s in accordance with Yorkshire Water requirements and 151m² surface water storage provided in an Attenuation Tank.

Hydro International Hydro-Brake Optimum
SHE-0310-6000-1655-6000 technical specification

Control Point	Head (m)	Flow (l/s)
Design Point	1.665	60.000
Flush-Flo	0.549	59.971
Kick-Flo	1.171	50.760

Adoptable SW network to discharge to public sewer network, subject to S106 agreement.

Existing Surface Water Drain

Chapel Street

Stoney Bank Road

Alley Street

FW10 (1350ø) CL.141.200 IL.139.850 (150ø)
11.9m / 150ø 1:12 / VC
4.5m / 150ø 1:149 / VC
4.0m / 300ø 1:12 / Concrete
SW09 (1200ø) CL.141.690 IL.140.300 (300ø)
SW08 (450ø) CL.142.419 IL.141.640 (150ø)
19.9m / 300ø 1:233 / Concrete
21.5m / 150ø 1:22 / VC
SW06 (FC) (1350ø) CL.143.843 IL.141.745 (450ø) IL.141.695 (300ø)
Tank: 14.5m x 11m x 1m CL.143.350 IL.141.750
1.3m / 450ø 1:200 / Concrete
FW09 (1200ø) CL.142.934 IL.141.260 (150ø) IL.140.840 (150ø)
SW07 (1200ø) CL.142.662 IL.141.610 (300ø) IL.141.610 (150ø) IL.140.640 (300ø)
FW08 (1200ø) CL.144.040 IL.142.255 (150ø) IL.142.255 (150ø)
3.1m / 150ø 1:123 / VC
7.5m / 150ø 1:126 / VC
2.6m / 450ø 1:22 / Concrete
2.6m / 450ø 1:22 / Concrete
FW07 (1200ø) CL.144.208 IL.142.280 (150ø) IL.142.280 (150ø)
FW06 (1200ø) CL.144.151 IL.142.340 (150ø) IL.142.340 (150ø)
SW05 (1350ø) CL.144.162 IL.142.695 (300ø) IL.142.545 (450ø)
19.0m / 150ø 1:146 / VC
17.0m / 300ø 1:97 / Concrete
FW05 (1200ø) CL.144.475 IL.142.470 (150ø) IL.142.470 (150ø)
SW04 (1350ø) CL.144.461 IL.142.890 (300ø) IL.142.890 (300ø)
20.3m / 150ø 1:145 / VC
18.3m / 300ø 1:287 / Concrete
SW10 (1350ø) CL.144.499 IL.143.150 (150ø)
5.8m / 150ø 1:145 / VC
FW04 (1200ø) CL.144.769 IL.142.610 (150ø) IL.142.610 (150ø)
SW03a (1200ø) CL.144.772 IL.142.960 (300ø) IL.143.110 (150ø) IL.142.960 (300ø)
29.2m / 150ø 1:146 / VC
30.5m / 300ø 1:96 / Concrete
FW03 (1200ø) CL.145.170 IL.142.810 (150ø) IL.142.810 (150ø)
SW03 (1350ø) CL.145.136 IL.143.400 (300ø) IL.143.400 (300ø)
SW03 (1350ø) CL.145.136 IL.143.400 (300ø) IL.143.400 (300ø)
43.4m / 150ø 1:145 / VC
47.4m / 300ø 1:297 / Concrete
FW02 (1200ø) CL.145.527 IL.143.110 (150ø) IL.143.110 (150ø)
SW02 (1200ø) CL.145.515 IL.143.560 (300ø) IL.143.560 (300ø)
27.6m / 150ø 1:146 / VC
27.9m / 300ø 1:272 / Concrete
FW01 (1200ø) CL.145.194 IL.143.300 (150ø)
SW01 (1350ø) CL.145.161 IL.143.660 (300ø)

Plot 1 — FFL 144.450m
Plot 2 — FFL 144.450m
Plot 3 — FFL 144.450m
Plot 4 — FFL 144.550m
Plot 5 — FFL 144.550m
Plot 6 — FFL 144.850m
Plot 7 — FFL 144.850m
Plot 8 — FFL 145.000m
Plot 9 — FFL 145.000m
Plot 10 — FFL 145.150m
Plot 11 — FFL 145.150m
Plot 12 — FFL 145.350m
Plot 13 — FFL 145.350m
Plot 14 — FFL 145.500m
Plot 15 — FFL 145.500m
Plot 16 — FFL 145.500m
Plot 17 — FFL 145.500m
Plot 18 — FFL 145.400m
Plot 19 — FFL 145.400m
Plot 20 — FFL 145.300m
Plot 21 — FFL 145.300m
Plot 22 — FFL 145.300m
Plot 23 — FFL 145.100m
Plot 24 — FFL 145.100m
Plot 25 — FFL 145.750m
Plot 26 — FFL 145.750m
Plot 27 — FFL 145.950m
Plot 28 — FFL 145.950m
Plot 29 — FFL 145.950m
Plot 30 — FFL 146.650m
Plot 31 — FFL 146.650m
Plot 32 — FFL 146.700m
Plot 33 — FFL 146.700m
Plot 34 — FFL 146.500m
Plot 35 — FFL 146.500m
Plot 36 — FFL 146.500m
Plot 37 — FFL 146.630m
Plot 38 — FFL 146.630m
Plot 39 — FFL 146.600m
Plot 40 — FFL 146.600m
Plot 41 — FFL 146.450m
Plot 42 — FFL 146.450m
Plot 43 — FFL 146.350m
Plot 44 — FFL 146.350m
Plot 45 — FFL 146.450m
Plot 46 — FFL 146.450m
Plot 47 — FFL 146.900m
Plot 48 — FFL 146.900m
Plot 49 — FFL 147.050m
Plot 50 — FFL 147.050m
Plot 51 — FFL 146.750m
Plot 52 — FFL 146.750m
Plot 53 — FFL 146.750m

New filter drain to be installed at the foot along the total length of the boundary wall

All existing land drains/culverts within the site to be located, surveyed, removed or connected into the filter drain along the boundary.
Open ditch drain to the south of development to be cleared of vegetation and silt.

Drainage to local watercourse (approx 500m South)

Do Not Scale

DESIGN REVIEW

Design review by:	**	Checked by:	**

Residual hazards:

Health, Safety & Environmental Notes

NOTES

Key

- Site Boundary
- Proposed Surface Water Sewer (PCC Manhole – PPIC)
- Proposed Foul Water Sewer (PCC Manhole – PPIC)
- Proposed Finished Floor Levels (FFL 98.000m)

Notes

1. Drainage drawings should be read in conjunction with Adept specification for drainage works and any other subsequent additions to this list. Adoptable drainage and works on public sewers will be governed by the requirements of the local water authority. Works affecting watercourses will be governed by the requirements of any or all of the Environment Agency, the local drainage board and the Lead Local Flood Authority.
2. All building drainage works shall be carried out in accordance with the current British/European standards BSEN752, the current building regulations and the local authority building control or NHBC specifications and requirements.
3. All materials and workmanship shall be in accordance with Adept drawings and specifications and generally in accordance with the latest version of the published document "Sewerage Sector Guidance".
4. Manhole cover levels may be subject to revision to suit proposed levels. Scheduled cover levels given on drainage drawings cannot be used to set the external works or floor levels.
5. All private foul drainage to be 100ø laid at a minimum gradient of 1 in 40, all private surface water drainage to be 100ø laid at a minimum gradient of 1 in 60 unless otherwise noted. Pipework to be laid to inverts shown on manhole schedules, with soffits coinciding at changes in pipe size.
6. All Junctions are to be done using a 'Y' junction to direct the flow in line with the main pipe.
7. Exact location of building rainwater downpipes and all internal drainage points (pop ups) to be confirmed by Architect. Rainwater pipe outlets to be rodable. internal gullies and manhole covers shall be to Architect's specification.
8. Setting out information for manholes may be provided on the drawings, especially where chambers are remote from a building. Otherwise chambers are shown in relation to features set out on other drawings and can be adjusted in location to suit the given gradients. However it is critical that external manholes have cover levels lower than FFL to minimise flooding issues should drains surcharge or block.
9. Invert levels of all outfall points to be confirmed prior to commencing drainage works. Position size and depth of all existing drains and services shall be established prior to commencement on site and any discrepancies resolved by the design team ahead of construction.
10. The contractor shall provide protection, temporary and permanent support, and temporary and permanent diversion works, necessary to all existing services sufficient to enable construction of the drainage system indicated on the drawings.
11. Work within the highway will require traffic management in accordance with Chapter 8 and agreement from the local Highway Authority (Section 50 Highways Act agreement or similar) ahead of work commencing.
12. Temporary water management discharges cannot enter the public sewer system without consent from the water authority. They cannot enter a watercourse without consent from either the LLFA or the EA. In both cases where consent is granted some treatment of the water may be required ahead of it entering either sewer or watercourse.
13. Land drainage should not be discharged to either foul or surface water drains that are connected into a proposed or existing public sewer system.
14. Connections to the public sewer network require S106 agreements. These generally cover workmanship and proof of suitability for the work and are therefore best completed by the relevant sub-contractor. Adept drawings and calculations can be submitted alongside and in support of such applications.
15. Wherever possible, drainage works are:
    - To commence at outfall
    - To work Upstream
16. Generally all Adoptable pipe work < 300 to be Clay, > 300 to be Concrete. With the strengths shown below:

    Clay Pipe Min Strengths
    100mm dia 40KN/m
    150mm dia 40KN/m
    225mm dia 45KN/m
    300mm dia 72KN/m

    Concrete Pipe Min Strengths all diameters to be class 120 (54KN/m).

    Where plastic pipework is proposed Water Authority & Highway Authority requirements for strength and durability will vary. Calculations may well be required from the pipe supplier alongside proof of chemical resistance. Min. requirements as below;
    Deformation limit: 5% at 300 days
    Jetting pressure: 4000psi
17. Trees should not be planted within 5m of adoptable sewers, where this is not possible due to planning conditions a suitable root barrier needs to be installed around any tree types that are within the prescribed restrictions as set out in the Water Authorities' Code For Adoption. Where the Mature tree canopy will overhang the adoptable highway a suitable root barrier will be required to prevent damage to any statutory undertakers equipment and the integrity of the highway construction.
18. The existing impermeable area of the development is 1.3Ha, using the modified rational method and a peak 1 year equivalent rainfall of 50mm this give a maximum 1 in 1 year run off of 142 l/s. This will be significantly greater in storm events of a greater return period. As we propose to restrict discharge to 60l/s for storm events upto the 1 in 100 year run off with 40% climate change allowance we greatly reduce the flood risk to the downstream catchment.
19. Proposed surface water drainage network discharges through existing connection serving the existing Mill site. As an existing connection is used surface run off from the proposed development is restricted to reduced brown field rates.

Date	Description	By	Chk	Rev
24.11.22	Revised to new levels	JBW	JS	P03
25.10.22	Updated SW Network	JBW	JS	P02
06.09.22	Revision Description	GT	JS	P1

ADEPT
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Project
Spring Mill
Earby

Title
Drainage Layout

Client
Pearl Together

Scale @ A0	Initial author	Initial checker	Approver	Initial Date
1:200	GT	JS	RP	06/09/22

Status	Purpose	Adept Ref
S2	Preliminary	110.21002

Project Number	Originator	Volume	Level	Type	Role	Drg. No.	Rev.
110.21002	ACE	00	ZZ	DR	C	01000	P03