

SUDS STRATEGY

- Planning Constraints**
- Planning guidance followed with SUDS proposed as suitable
 - SUDS proposals:
Phase 1
Mid Bld North = attenuation and possible porous paving
Mid Bld Mid = rain gardens and porous surfacing
Mid Bld South = attenuation
 - Phase 2
Mid Bld = attenuation and possible porous paving
Corner Bld = attenuation
- Drainage Authority Constraints**
- Settlement conditions have been applied to restrict discharge to 50% of existing 1 year townflood rates. As agreed with UU, total site discharge to Bradford Road sewer = 29L/s
 - Mid North = 8L/s
Mid Mid = 26L/s
Mid South = 3L/s
Mid Bld = 5L/s (or 8L/s if Mid South connected)
 - Corner Bld connected to bedwork street at 5L/s as agreed with UU (greenfield)
 - Total site discharge = 44L/s
- FRA Constraints**
- HW Detail design completed in accordance with CWS FRA and drainage strategy documents
- Other**
- No infiltration yet assumed, ground conditions to be confirmed

Connection into existing sewer, contractor to review outfall conditions and confirm position and outfall level at least 1 week prior to construction work starting. S106 approval required from United Utilities.

Existing site connection may be present, investigation to be completed to confirm if existing site drainage can be utilised

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Control chamber capable of discharging 6l/s in a 100yr + 40% CC event, vortex flow control, 0.9m head.

Discharge based on greenfield run off rates, area = 3180m²

Petrol Interceptor spei 103 C1/SC or similar approved

If Porous paving is to be supported the interceptor may be omitted.

Any porous paving design is subject to soil infiltration testing, system to be lined as appropriate.

Surface water attenuation to be provided, total Storage 10m³ size shown: Crate system storage with minimum 800mm cover, loading capacity = 28Tonnes min Graf ECO blox maxx or similar

Control chamber capable of discharging 5l/s in a 100yr + 40% CC event, vortex flow control, 0.9m head.

Discharge based on greenfield run off rates, area = 590m²

Surface water attenuation to be provided, total Storage 150m³ size shown: Crate system storage with minimum 800mm cover, loading capacity = 28Tonnes min Graf ECO blox maxx or similar Alternatively 120m³ crate attenuation and 30m³ of porous paving storage attenuation

Key

- F1 (12000) CL 120.000 L 120.000 Proposed foul sewer (invert level shown)
- C1 (12000) CL 130.300 L 130.300 Proposed Combined water sewer
- S10 (12000) CL 131.050 L 128.30 Proposed surface water drain (roof water/highway/treated external area flows only)
- S10 (12000) CL 131.050 L 128.30 Proposed surface water drain external areas untreated
- 600/460/225 "non-accessible" inspection chambers
- Minimum 12000 "accessible" manholes
- Proposed road gully and lateral Connection
- Proposed Rodding Eye point
- Proposed channel drainage system - hauration fasterfix super or similar approved, 150mm wide.
- Existing drain
- Existing sewers to be diverted/made redundant/built over
- Indicative existing sewer easement
- Proposed surface water attenuation/soakaway unit
- Proposed surface water flow control unit
- Proposed Oil/Petrol interceptor or drainage treatment unit
- Note: All Treatment units noted are for indicative costing purposes only. Full detailed design specification to be obtained from the manufacturers prior to any orders being placed.

FFL 130.000

x131.05m

1:35

Embankment (@1:3 unless stated)

Retaining wall/SOE detail

800mm high

Rain Garden Construction, porous soft landscaping surface with 500mm min type 3 grade (30%VR) stone layer beneath (lined as required)

Easement Flow routes.

General Notes

Do not scale this drawing. If in doubt, consult with the Engineer

- This drawing is to be read in conjunction with all other relevant Engineers, Architects and Specialist design drawings and specifications.
- All dimensions and levels are in metres unless noted otherwise.
- This drawing is for information purposes and all information displayed is subject to detailed design.
- Cover levels noted are indicative or best design levels, constructed levels should take into account as-built surfacing levels and gradients.
- The Contractor shall be responsible for checking all tie-ins for line and level with existing foul and surface water systems before commencing any works.
- The Engineer shall be notified immediately, in writing, should any errors or discrepancies be found prior to the commencement or continuation of any works. All work is to be carried out in accordance with current British Standards, Building Regulations and NHBC Standards.
- All drainage work is to be strictly in accordance with the requirements of the Building Regulations 2010, Approved Document Part H, "Drainage and waste disposal".
- It is the responsibility of the Contractor to execute the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974, and the C.O.M. Regulations 2015. The Contractor will be deemed to have allowed for full compliance, including full liaison with the Principle Contractor, within his rates.
- All existing land drains encountered on site during construction are to be re-connected.
- Should any departure from the proposed slab or external levels be considered, agreement shall be sought from the Engineer immediately and prior to the commencement or continuation of any works. Proposals should take full account of all restrictions to the slab level.
- Temporary protection to be provided to drainage work during construction as necessary.
- Power supply to separator/treatment units, alarm, panel, vent etc to be provided by contractor in accordance with manufacturers recommendations.
- Topographical survey shown is based upon Survey Solutions drawing 46746MCLS-01
- Architects layout shown is based upon Hodder and Partner Site Layout drawing no.200 This layout may be subject to change and is intended for indicative purposes only.

Specification Notes

- The following types of pipe may be used unless noted or agreed otherwise:
 - Pipes up to 300mm diameter to be Structured Wall to BS EN 13476, Polypropylene to BS EN 1852 or PVC-U to BS EN 1401
 - Pipes 300mm diameter or over to be Concrete to BS 5911.
- Both Clay and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 28kN/m). Thermoplastic pipes shall have a minimum ring stiffness of SN4.
- Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.23 to 2.25.
- All pipes, chambers and fittings shall be installed, bedded and backfilled in accordance with the manufacturers instructions subject to the following minimum requirements:

Pipe Location	Cover to crown	Clay/Concrete Pipe *	Plastic Pipe Bedding	Backfill
Roads (HGV)	>1.2m	Class S	Class S (S10r2)	Type 1 Granular
	<1.2m	Class 'A' (Concrete)	Class 'A' (Concrete)	
Drives / car parking	>0.9m	Class 'A' (Concrete)	Class S (S10r2)	Type 1 Granular
	<0.9m	Class 'A' (Concrete)	Class 'A' (Concrete)	
Hard and soft Landscaping	>0.6m	Class S	Class S (S10r2)	Suitable as dug material
	<0.6m	Class 'A' (Concrete)	Class 'A' (Concrete)	

- The first flexible joint in pipes adjoining a manhole shall be a maximum length of 600mm from the inside face of the manhole, connecting to a rocker pipe. The length of the rocker pipe shall be as follows:

Pipe diameter	Length of Rocker pipe
150-600mm	600mm
675-750mm	1000mm
over 750mm	1250mm

- All manholes and inspection chambers situated in areas subject to vehicular loading to have class D400 covers and frames to BS EN124 and those not subject to vehicular loading to have class minimum class B125 covers and frames.
- Drainage frames must be tied to manhole risers by use of manufacturers ties (eg. Polypipe ref FRK500 fixing kit and FRK501 black ties). The ground works contractor will be held fully responsible for any accidents due to incorrect fitting or failure to use the correct manufacturers fixing equipment.
- All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of NHBC Practice Note 3.

INFORMATION/PLANNING

Rev. Date Amendments By Chkd

Drawing Title

Drainage Strategy
sheet 2 of 2
Phase 2

Client

ARROWSMITH-
Brunswick Square.

Project/Drawing No.

23178-HW-23-00-DR-C-501

Project
Brunswick Mill
Bradford Road
Manchester

Status

FOR
INFORMATION/PLANNING

Scale Drawn Checked Date

1:250 **BD** **CW** **20-07-23**

HOWARD WYNNE
Consulting Engineers

Unit 2a, 100 Mellor Road, West Bridgford, Nottingham NG2 6EP.