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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Planning Constraints</b>                                                                                                                                                                                                    |                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Planning guidance followed with SUDS proposed as suitable</li> <li>subsite proposals:</li> </ul>                                                                                        |                                                                                                                                                                                                    |
| Phase 1                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Mid Bld North = attenuation and possible porous paving</li> <li>Mid Bld Mid = on grass and porous surfacing</li> <li>Mid Bld South = attenuation</li> </ul> |
| Phase 2                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Mid Bld = attenuation and possible porous paving</li> <li>Corner Bld = attenuation</li> </ul>                                                               |
| <b>Drainage Authority Constraints</b>                                                                                                                                                                                          |                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Settlement conditions have been applied to restrict runoff to 20% of existing 1 year flow/rates</li> <li>As agreed with UUL, total site discharge to Bradford Street = 32L/s</li> </ul> |                                                                                                                                                                                                    |
| Mid North = 6L/s                                                                                                                                                                                                               |                                                                                                                                                                                                    |
| Mid Mid = 26.8 L/s                                                                                                                                                                                                             |                                                                                                                                                                                                    |
| Mid South = 3L/s                                                                                                                                                                                                               |                                                                                                                                                                                                    |
| Mid Bld = 5L/s (or 8L/s if Mid South connected)                                                                                                                                                                                |                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Corner Bld required to bypass effluent at 5L/s as agreed with UUL (confirmed)</li> </ul>                                                                                                |                                                                                                                                                                                                    |
| Total site discharge = 44L/s                                                                                                                                                                                                   |                                                                                                                                                                                                    |
| <b>FRA Constraints</b>                                                                                                                                                                                                         |                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>HW design completed in accordance with Civic FRA and drainage strategy</li> </ul>                                                                                                       |                                                                                                                                                                                                    |
| <b>other</b>                                                                                                                                                                                                                   |                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>No infiltration yet assumed, ground conditions to be confirmed</li> </ul>                                                                                                               |                                                                                                                                                                                                    |

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

1. This drawing is to be read in conjunction with all other relevant Engineers, Architects and Specialist drawings and specifications.
2. All dimensions and levels are in metres unless noted otherwise.
3. This drawing is for information purposes and all information displayed is subject to detailed design.
4. Cover levels noted are indicative or best design levels; constructed levels should take into account as-built surfacing levels and gradients.
5. The Contractor shall be responsible for checking all tie-ins for line and level with existing foot and surface water systems before commencing any works.
6. 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.
7. 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".
8. The responsibility of the Contractor to exclude the works at all times in strict accordance with the requirements of the Health and Safety at Work Act 1974, and the C.D.M. Regulations 2015. The Contractor will be deemed to have allowed for full compliance, including full liaison with the Principal Contractor, within his rates.
9. All existing land drains encountered on site during construction are to be re-connected.
10. Should any departure from the proposed sub 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 sub level.
11. Temporary protection to be provided to drainage work during construction as necessary.
12. Power supply to separator/treatment units, alarm, panel, vent etc to be provided by contractor in accordance with manufacturers recommendations.
13. Topographical surveying data is based upon Survey Solutions drawing 46748MCLS-01
14. Architects layout subject to change upon Holder and Partner Site Layout drawing no 200 This layout may be shown to be used and is intended for indicative purposes only.

15. The following types of pipe may be used unless noted or agreed otherwise;

- Pipes up to 300mm diameter to be Structured Walled 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.
16. Both Gully and Concrete pipes shall be strength class 120 (100/150mm min crushing strength 28kN/m). Thermoplastic pipes shall have a minimum ring stiffness of S<sub>N4</sub>.
17. Pipes which run adjacent to buildings shall be installed in strict accordance with Part H, Clauses 2.23 to 2.25.
18. 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 *<br>Bedding | Plastic Pipe<br>Bedding                 | Backfill                    |
|------------------------------|----------------|---------------------------------|-----------------------------------------|-----------------------------|
| Roads (HGV)                  | >1.2m<br>1.2m  | Class S<br>Class 'A' (Concrete) | Class S (Stor2)<br>Class 'A' (Concrete) | Type 1 Granular             |
| Drives /<br>car parking      | >0.9m<br>0.9m  | Class S<br>Class 'A' (Concrete) | Class S (Stor2)<br>Class 'A' (Concrete) | Type 1 Granular             |
| Hard and soft<br>Landscaping | >0.6m<br>0.6m  | Class S<br>Class 'A' (Concrete) | Class S (Stor2)<br>Class 'A' *          | Suitable as dug<br>material |

19. 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                |
20. 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.
21. Drainage frames must be fixed to manhole risers by use of manufacturers ties (eg. Polypropylene FRK500 fire knit 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 fire equipment.
22. All drains in the vicinity of existing or proposed trees to be constructed in accordance with the requirements of the British Standard BS 5838.

| Rev. | Date | Amendments | By | Chk'd |
|------|------|------------|----|-------|
|------|------|------------|----|-------|

Drawing Title

**ARROWSMITH-  
Brunswick Square.**

Project/Drawing No

23178-HW-23-00-DR-C-500

Project  
**Brunswick Mill**  
**Bradford Road**  
**Manchester**  
Status

**FOR  
INFORMATION/PLANNING**

1:250      BD    CW      20-07-23

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