

General: 1. Do not scale from the drawings. All dimensions must be checked / verified on site. If in doubt ask. 2. This drawing is to be read in conjunction with all relevant Architects, Engineers and specialists drawings and specifications. 3. Refer to Landscape Architect plans for : - additional paving / kerbing requirements - boundary treatments (planting and fencing) - setting out information 4. Refer to Architect plans for : - internal building layouts - coordinated stacks and pop-up locations - specification of channels to proposed door thresholds, windows and garage threshold 5. Refer to MEP Engineer detailed design for : - utilities provisions - ducting layouts and routing - above ground drainage design 6. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise. 7. Levels shown are approximate and are subject to site adjustment to suit final external works levels. 8. Any discrepancies noted on site are to be reported to the Engineer immediately. 9. The Contractor shall allow for the protection, temporary and permanent support and diversion works as necessary, to all existing services to the satisfaction of the public utilities. 10. Construction details for proprietary products are shown indicatively and for Pricing Purposes only. All proprietary products shall be installed in strict accordance with the manufacturers' specific requirements and specifications. 11. Utilities locations / routes shown indicatively. Refer to constraints plan / utilities survey information for more detail. Health and Safety : 1. The Contractor shall take all necessary safety precautions in line with current legislation when working in / near confined spaces, deep excavations and utilities. 2. The Contractor shall suitably protect pedestrians and vehicles from the working areas. 3. Contractor to take measures to protect his operatives with respect to the presence of gas in sewer trenches and manholes through the use of gas monitoring equipment and breathing apparatus as required. 4. Adequate protection is to be provided to maintain the integrity of existing services and the proposed works during all construction phases. Pre-construction Requirements: 1. Prior to the commencement of work the exact position, level, line, size and use of all existing drains / sewers and services shall be established by the Contractor. Any discrepancies from the information indicated on these drawings shall immediately be brought to the attention of the Architect or Engineer. 2. All levels and dimensions shall be verified on site prior to the commencement of any works. Any discrepancies shall immediately be brought to the attention of the engineer. 3. Prior to construction the Contractor is to satisfy himself that the design information, including records of any utilities and constraints, are accurate. 4. The Contractor shall allow for all relevant approvals from the relevant authorities when working within the public highway and on adopted sewer systems. 5. The Contractor is responsible for obtaining and paying for all necessary permissions to enable construction of the works to be undertaken, including but not limited to licenses for street works and connections to existing sewers. This includes Section 106 applications when connecting directly or indirectly to the public sewerage network (complete application to be made at least 3 weeks prior to the planned outfall construction works). 6. The Contractor shall agree the point and method of discharge of ground water and water from temporary works with the drainage authority. 7. The Contractor shall allow for all traffic management in connection with road and sewer works. 8. Contractor to apply for sewer permits and road opening permits as necessary from the appropriate authorities, prior to commencing works. Post-construction Requirements: 1. Upon completion of the works the Contractor shall clean all drainage by jetting, removing all debris from site. No debris shall be permitted to enter the public drainage system, watercourse or offsite discharge network. All drains shall be CCTV surveyed with the record information (including video footage) being passed to the Engineer for review a minimum of 2 weeks prior to Project Completion. 2. The final position (upstream) of all lateral / stub connections to be recorded by the Contractor's surveyor and identified on site with a permanent marker post. 3. Any damage caused to existing footways, roads or other third-party property to be made good.	Drainage: 1. All adoptable surface and foul water drainage works to be carried out in strict accordance with the 'Code for Adoption' or 'Sewers for Adoption 8th Edition' where appropriate / agreed and any specific requirements of the adopting authority. 2. All adoptable highway drainage works to be carried out in strict accordance with the Local Highway Authority requirements and the DTT MCHW Specification for Highway Works. 3. All private drainage works are to be carried out in accordance with Building Regulations Part H, BS EN 752 and, where provided, the Roscoe Drainage Specification. 4. All Roscoe design information is based on rigid pipes (i.e. vitrified clay or concrete) unless noted otherwise. Use of alternative BBA certified materials may be used if installed in accordance with the suppliers certificate details and approved for use by Building Control or the Adopting authority. 5. Where applicable the Contractor shall allow free and full access to the drainage works for the local authority, highway authority, drainage authority or the overseeing organisation. 6. The Contractor shall check the condition of the existing drainage and ensure it is structurally sound and free from blockages / obstructions. Where necessary the Contractor is to replace and/or undertake remedial works on defective drainage. All drainage is to be cleaned by jetting, removing all debris from site to an appropriately licensed tip. 7. For new connections to existing manholes, existing benching is to be broken out and reformed to suit. Concrete/brick surround to be made good. 8. All temporary works associated with the construction of the drainage works shall be the responsibility of the Contractor, including the protection of any uncovered/shallow pipework against construction traffic. 9. The Contractor shall allow for dealing with surface water runoff into excavations and from groundwater by means of sumps, pumping and de-watering as appropriate to keep the excavation as dry as reasonably practicable during the construction of the works. De-watering shall be undertaken in strict accordance with the specification. The Contractor shall agree the point and method of discharge with the drainage authority. 10. Pipes are to be a minimum of 150mm diameter unless noted otherwise, or 150mm for gullies and drainage channel sumps. 11. All pipework is to be laid soffit to soffit unless noted otherwise. Cover levels are provisional and subject to adjustment to suit finished ground levels. 12. Proposed drainage passing through new foundations to be sleeved with cast-in oversized pipework. 13. Above ground drainage details to be designed / confirmed by the Architect / M&E Contractor, including ventilation of the foul drainage system. 14. Above ground rodding points must be provided to foul stacks and rainwater downpipes. All rodding points must be provided with access panels. 15. The number and location of all gullies, rainwater pipes, channel outlets and soil vent pipes shown indicatively only. To be confirmed by Architect / M&E Contractor prior to commencement of works. 16. Foul water 'pop up positions' are shown indicatively only, to be confirmed by the Architect / M&E Contractor prior to commencement of works. Refer to Architect plans for setting out of internal foul pop up positions. 17. All specialist/proprietary products such as separators, attenuation tanks, channel drains, soakaways, package pumping station and water treatment units to be installed as per the manufacturer's installation details and specifications. Design of proprietary attenuation tank by Contractors suppliers to take into account the following: - depth below ground level - ground water table conditions (refer to site investigation information for more details) - proximity, depth and construction of adjacent buildings - proposed location and associated loading (pedestrian / vehicular etc.) 19. The design proposals recommend that, if required, grease interceptors are located in the above ground (MEP) drainage system for maintenance. 20. Grease trap requirements, associated fittings and installation, whether buried or above ground, to M&E Contractor's design / detail. M&E Contractor to confirm grease trap proposals prior to commencement of drainage works. 21. All proposed chamber covers are to be marked permanently with "SWS" (or equivalent) on surface water sewers and "FWS" (or equiv.) on foul sewers. all covers to be in accordance with BS EN 124. 22. Unless noted otherwise, covers are to be: - Ductile Iron in concrete service yards, tarmacadam or soft landscaping - Infill covers within block, flag or specialist paving and internal to buildings	20. Unless noted otherwise covers to be load class: - B125 internally - C250 in landscaping, pedestrian only zones and driveways - D400 in car parks, access roads (including MEWP zones) - E600 in service yards 21. All manhole covers located internally, to be recessed, double seal, airtight type, aluminium or steel, mechanically fixed manhole covers in accordance with Building Reg's Part H. Recess depth to Architect's requirements to suit finishes etc. 22. Where infill manhole covers are specified the location of manholes and orientation of the covers shall be coordinated on site to suit the surfacing material and paving arrangement wherever possible. 23. Gully gratings are to be in accordance with BS EN 124 - Class D400, unless noted otherwise. Ductile Iron and BSI kitemarked. 100mm minimum frame depth non-rock design with a captive hinge set on the traffic side of the gully. Grating slots should be perpendicular to the direction of traffic. 24. All internal gullies to be dry trapped unless noted otherwise. 25. All existing drainage works on the site which is to be abandoned is to be dealt with in the following manner: - Within 1m of the proposed finished ground levels the drainage is to be demolished broken up and removed. - With a depth greater than 1.0m the drains are to be fully sealed with a 1:10 cement:sand mix. - Abandoned gullies are to be removed from site and abandoned tails are to be sealed with a 300mm thick concrete plug at a depth of 1.0m below proposed ground level. - Manhole covers are to be removed off site if they do not conform to the current standards or are damaged. 26. Where drainage is to be grouted up the lowest point of the abandoned length shall be suitably sealed and the filling operation shall commence from that point and continue progressively to ensure all voids are filled completely. 27. The shafts of manholes on abandoned sewers / drainage shall be broken out to a level of 1.0m min. below proposed finished ground level and the remaining void filled with concrete. 28. Unless noted otherwise, all lateral connections are to be installed with level soffits to the diameters and gradients shown on the layout drawing. Any pipe bends should be provided to suit the direction of flow & no pipework should be downsized in the direction of flow. 29. Geotextile fabric to be wrapped around pipe granular bedding where sewer trenches are formed in running sand/silty materials where there is a risk of fine materials entering the voided granular bedding, including where granular bedding is below the groundwater level. In these conditions the geotextile is to extend under the manhole bases. 30. Formation level for manhole bases and pipe trenches to be free from soft spots. Made ground to be removed down to virgin ground, or as directed by the Engineer. 31. The maximum trench widths must not be exceeded, if the width is exceeded the contractor must submit revised bedding proposals to the Engineer. 32. Concrete for manhole bases, surrounds and for pipe bedding shall be Class 2 under the guidelines in Table 1 of BRE Digest 363 'Sulphate and Acid Resistance in the Ground'. 33. Concrete pipes to be to BS EN 1916:2002 & BS 5911-1:2002. Clayware pipes to be to BS EN 295-1:2013. Thermoplastics structured wall pipe shall comply with the relevant provisions of 'WIS 4-35-01'. Pipes shall be BSI Kitemarked or have equivalent third party certification. Pipes shall be class 8kN/m2 nominal short term ring stiffness. 34. Vitrified clay Joint sytem E to BS EN 295 and be BSI kitemarked - 100mm Ø & 150mm Ø - FN40 - 225mm Ø - Class 200 - 300mm Ø - Class 240 35. At chambers / rocker pipes, not withstanding specific requirements for individual chamber types, all pipes leading to and from chambers must meet the requirements of Clause E6.6 of Sewers for Adoption 8th Edition. 36. Manhole ring diameters shall comply with Table B.1 of Sewers for Adoption 8th Edition. Manholes, soakaways & cover slabs to be to BS EN 1917 and BS 5911-3. 37. Frames for manholes shall be bedded in polyester resin bedding mortar in NRSWA categories I, II or III. 38. Unless noted otherwise minimum clear openings to be:- - Depth to soffit >1.5m = 600mm square (or diameter). - Depth to soffit <1.5m & DN=<150 :- 750x675mm - Depth to soffit <1.5m & DN=225< :- 1200x675mm	Pavements and External Works: 1. All external works are to be carried out in accordance with the DTF's Specification for Highway Works which includes Interim Advice Note 101/07 for 900 series, the Building Regulations Part M and, where provided, the Roscoe External Works Specification. 2. All adoptable external works shall also be carried out in accordance with the Highway Authority's specification and recommendations. 3. Should there be any conflict between information on Roscoe's drawings and the Highway Authority's recommendation and specification, the authority's requirements take precedence. The Contractor must liaise closely with the authority with respect to any testing, approvals, inspections, permissions or licences required as work progresses. 4. For guidance, all Clause numbers relate to the Specification for Highway Works. 5. All bitumen macadam shall be in accordance with the BS EN 13108 series dated 2016. 6. Granular Type 1 sub base to be in accordance with Clause 803 of DTF's Specification for Highway Works 2006 and laid in accordance with Clause 802. No mechanical compaction within 300mm of crown of pipe. Granular Type 1 sub-base within 300mm of crown of pipe to be 40mm down. Limestone aggregate not permitted if a ph of 6 or less is likely. 7. Where applicable base shall be dense macadam will be in accordance with Clause 903. 8. Where applicable, binder course shall be dense bitumen macadam in accordance with Clause 906. 9. Where applicable surface course shall be stone mastic asphalt. 10. Limestone aggregate is not permitted in the surface course. 11. Preparation and treatment of formation shall be carried out in accordance with Clause 616. Made ground to be removed down to virgin ground, or as directed by the Engineer. Subject to highway inspectors approval, excavated material may be re-used as fill back up to formation level provided it meets the specification for 6f2. Re-used excavated material to be compacted in layers with a vibratory roller complying with method 2 of Table 6/4 of Specification for Highway Works. Compaction works to be carried out in dry weather conditions. Similar treatment required in drainage trenches. Contaminated material to be removed to a licensed tip. 12. General requirements for road pavements shall be in accordance with Clauses 701 to 707 inclusive. 13. Unsealed and loose material, such as crushed stone, gravel and pebbles, shall not be used adjacent to the highway. 14. CBR values are to be verified by in situ testing at a maximum interval of 50m and at any visible change of sub-grade. 15. All materials within 450mm of finished surface shall be non-frost susceptible in accordance with Clause 602.19 and 801.7. 16. Reinstatements shall be undertaken in accordance with the Roscoe standard detail.	Kerbing and Lining: 1. For guidance, all Clause numbers relate to the Specification for Highway Works. 2. All concrete backing to kerbs, channels and edgings shall be grade ST4 unless noted otherwise. 3. In-situ and precast concrete units shall have sulphate resisting portland cement to BS 4027, unless agreed otherwise with the adopting authority. 4. Precast concrete products shall comply with the relevant provisions of BS 5911:2010, BS EN 1916:2009, and BS EN 1917:2008 and be Kitemarked. 5. Should there be any conflict between information on this drawing and the highway authority's recommendation and specification, the authority's requirements take precedence. The Contractor must liaise closely with the authority with respect to any testing, approvals, inspections, permissions or licences required as work progresses. 6. Unsealed and loose material, such as crushed stone, gravel and pebbles, shall not be used adjacent to the highway. 7. Pre-cast concrete kerbs, channels and edgings shall be to BS EN 1340:2003 and shall be laid true to line and level. 8. Internal and external angle kerbs should be used at right angles changes in direction to preclude the need to form mitred kerb joints. Attenuation Basins, Swales and SuDS: 1. All excavation and levelling shall be performed by equipment with tracks exerting very light pressures to prevent compaction of the basin floor, which may reduce infiltration capacity. Before and after construction, other vehicular movements shall be prevented. 2. The base of the basin should be carefully prepared to an even grade with no significant undulations. The surface soils within the basin should not be smeared or compacted during construction. After final grading, the basin floor shall be tilled to a depth of 150mm to provide an aerated, porous surface texture. 3. Backfilling against inlet and outlet structures needs to be controlled to minimise settlement and erosion. The topsoils used to finish the side slopes need to be suitably fertile, porous and of sufficient depth to ensure healthy vegetation.
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DO NOT SCALE

PROPOSALS PRESENTED IN THIS PACKAGE ARE SUBJECT TO CHANGE DURING DETAILED DESIGN AND PROJECT TEAM REVIEW.

The Roscoe drawings have been prepared prior to the appointment and technical input of a number of Sub-Contractors forming the supply chain. Specialist Sub-Contractors not yet engaged include M&E, pump suppliers, Separator suppliers. In all such instances the Civil engineering designs have been developed based on the layout, setting out and assumptions shown on the Roscoe drawings. It is the responsibility of the Client and chosen Contractor to sign off the details shown on the drawings to confirm that the selected Sub-Contractors will work within the fixed details shown, prior to using them for construction. It is not within the Roscoe scope of works to carry out amendments to the construction details once issued to take into account later changes requested by the supply chain once they are appointed.

Drainage design strategy:

Proposed surface water drainage strategy:

It is proposed to demolish the exiting Block B Building and to construct new four storey block for the purpose of teaching. The area for the proposed development is towards the north of the site opposite College Road an area that is occupied by car park spaces currently.

Existing drainage :
Surface water drainage that is serving existing buildings to remain will be kept unaffected or diverted if required. Surface water drainage that is no longer live following demolition works is to be grubbed up or grouted subject to Contractor's method of works.

Roof drainage :
Subject to confirmation from the Client / Architect it is understood that roof drainage will not be siphonic.

It is anticipated that the gravity roof system will require collection at major corner points, this is to be confirmed.

Pavement drainage :
Road / hard landscaping to be provided with gullies / channel drainage discharging to below pipe network. Surface drainage is shown indicatively and is to be confirmed following finalisation of landscape proposals.

Discharge flow rates :

As the existing site was predominately brownfield, a betterment on the existing flow rate is proposed for the new development. The existing site drainage has been modelled, (appendix VI), with an existing flow rate from the hardstanding in the 2yr storm event being 151.3/s and the 100yr storm event being 360/s.

It is proposed to take the existing 2yr storm event and offer a minimum 50% betterment, to suit local government guidance and standard UU & LLFA practises.

With a 50.5% betterment applied to the existing run off rates, proposed flow rates of 75/s is proposed. To minimise crossing of the 900mm UU public sewer and its easement, the site is proposed to be split either side of the sewer, with two attenuation tanks and flow controls. The right hand side is proposed to have a 30/s flowrate and the left hand side a 45/s flow rate.

Attenuation strategy :
Surface water flooding it to be controlled up to the 100 year plus 40% return period storm events.

To ensure there is no flooding in such a 1:100-year storm event (plus the 40% climate change allowance) attenuation tanks, 100m3 for the right hand side drainage system and 160m3 for the left hand side drainage system, was required for the new developments.

Water quality :
A petrol interceptors is proposed for car park runoff.

petrol interceptors will require a vent pipe (location to be confirmed by Archtect / Building Control), high level alarm and power supply (by MEP Engineer).

Proposed foul drainage strategy:

Existing drainage :
Foul water / combined drainage that is serving existing buildings to remain will be kept unaffected or diverted if required. Foul water / combined drainage that is no longer live following demolition works is to be grubbed up or grouted subject to Contractor's method of works.

Proposed drainage :
It is envisaged that foul flows from the site will be able to discharge by a gravity connection to the existing connections not being abandoned just prior to exiting the site boundary.

The foul run that is currently there will be abandoned following confirmation from UU and i new connection onto the pipe will be introduced.

No restriction on foul flow is proposed.

General drainage :

Pumped solutions are not currently envisaged but will be reviewed as the design progresses. Detailed pump assessment, design and specification to be confirmed by proprietary supplier / MEP Engineer.

FEH2013 rainfall has been used as part of the surface water design calculation to show that the proposed drainage system has capacity for 1:100 year return period plus a 40% increase for the potential effects of climate change within the Reserved Matters red line boundary.

P01	02.12.24	AY	STAGE 3 ISSUE		JT	DB
REV	DATE	BY	DESCRIPTION		CHK	APP
DRAWING STATUS:						
STAGE 3						
 Roscoe CIVIL & STRUCTURAL ENGINEERS INSPIRING BUILT ENVIRONMENTS						
CLIENT:						
WILLMOT DIXON						
ARCHITECT:						
SHEPPARD ROBSON						
PROJECT:						
HOPWOOD HALL COLLEGE ROCHDALE						
TITLE:						
CIVIL ENGINEERING NOTES & PHILOSOPHY						
SCALE @ A1:		CHECKED:			APPROVED:	
N.T.S		JT			DB	
PROJECT NUMBER:		DESIGNED:	DRAWN:	DATE:		
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DRAWING No:					REV:	
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