



Tier Environmental Ltd
7 9 New Wakefield Street,
Manchester, M1 5NP
0161 876 2900

TE1880-TE-00-XX-CO-GE-003-V01

FAO Jonathon Parr

Rochdale Borough Council
Floor 3
Number One Riverside
Smith Street
Rochdale
OL16 1XU

13 November 2025

**ENVIRONMENTAL HEALTH SENIOR OFFICER COMMENTS PERTAINING TO THE
FOUNDATION WORKS RISK ASSESSMENT RESPONSE LETTER – HOPWOOD HALL COLLEGE,
ROCHDALE PREAPP-00012-25**

Dear Jonathon,

Tier Environmental wish to thank you for your email comments received on 13th November 2025 following your review of the following documents produced by Tier Environmental for the above site, including the positive comments provided – this is very much appreciated:

- Foundation Works Risk Assessment - Hopwood Hall, Rochdale (report reference: TE1880-TE-00-XX-TN-GE-001-V01, dated 24th October 2025)

For ease, we have reproduced your comments and provided responses in red below:

Generally I find the approach acceptable. Thank you for confirming. However, I do have a few queries which stem from items I want clarifying before I recommend acceptance; please see below: Please see clarifications below.

Section 4:

You say “It should be noted on the ground model that the Arley Mine coal seam which will be targeted for treatment ... dips below the River Roch thereby reducing risk of connectivity between treatment works and the neighbouring River.”

Although in this instance I am not the regulator for controlled waters, and the comment relates to mine grout, I thought I would add something based on own experience. When the A470 in south Wales was built over Carboniferous strata in the 1980s, grout from grouting works was seen to enter the bed of the River Taff. I believe that both the Consultant and Contractor were prosecuted for this. Bear in mind I read this in a report written by Arup related to a site I was working on; I have never been able to find any reference to it elsewhere, but I had no reason to not believe it. Thank

you, we are also mindful of this risk and it is for that reason that we have referred to, and considered the ground model. Although I believe the risk is low, I would never discount this issue arising again, especially in shallow workings in fractured rock. Thank you for confirming your view on the risk. I would recommend a watching brief and a plan be derived in case grout does arise. I have not read the grouting specification which probably covers this, which is why I am just putting this comment to you, but given you have commented on this in relation to concrete from the piles, I would assume it is covered. Thank you for the comment. We can confirm that the potential for grout migration towards the River Roch has been fully assessed and is already controlled through the measures set out in both the FWRA and the Grouting Specification.

Within the FWRA (Pollution Scenario 3), the potential for concrete or grout to impact controlled waters—including nearby surface water—has been assessed. The risk is considered low/negligible, as the grouting and piling techniques are carried out under controlled pressures with continuous monitoring of volume and take. In particular:

- The Arley Mine seam dips away from the river, reducing the potential for any connectivity toward the watercourse.
- Injection pressures are limited to below overburden pressure, greatly reducing any chance of lateral migration toward the river embankment.
- Grout placement is controlled via tremie pipes with real-time monitoring at each hole.
- Any excessive grout take triggers immediate cessation and review, ensuring rapid intervention should grout behave unexpectedly.

The Grouting Specification reinforces these measures in detail (Sections 4.3 and 5), including:

- Controlled, low-pressure grouting operations specifically designed to prevent uncontrolled lateral movement.
- Use of casing through Made Ground and superficial deposits, ensuring grout cannot escape into permeable near-surface horizons that might connect to the river.
- Mandatory surface watching brief at all drill locations, including inspection for any signs of grout emergence or migration.

The specification requires “[maintenance of] appropriate observation and operational monitoring throughout the works, including visual checks for grout breakout”.

Collectively, these controls constitute an active watching brief for any risk of grout migration, including outward movement toward the River Roch.

We trust this addresses the concern, but please let us know if any further clarification is needed.

My own experience suggests that this is not as much of an issue with concrete in piles, I have been on sites where CFA piles were put into river gravels next to the Ness, and where piles were put in 5m from the River Taff, and seen no concrete enter these waters, though I do note you have covered this in Table 5.1. Thank you for confirming that we have covered this.

Section 5

Should the preferred piling technique (CFA) be amended, this piling risk assessment may need updating. Understood, thank you

Would vibro-concrete be a better solution than vibro-stone? Vibro stone columns have been selected as the technically and commercially preferred solution for the scheme. As such, the FWRA conclusions have been reached based on this preferred approach.

Table 5.1

CFA Piling Pollution Scenario 7- does the asbestos risk assessment need updating, or does it cover piling? I can't remember. The asbestos risk assessment is concerned with chronic risk and this intent is built in to the exposure frequencies and durations within the model used. Instead, risks to construction workers including piling workers will be addressed via dedicated contractor risk assessments in accordance with Control of Asbestos Regulations 2012.

In Vibro Stone Columns Pollution Scenario 2, you state:

“... superficial and bedrock units are already hydraulically connected” . Is there no hydraulic connection with superficals/bedrock and Made Ground? Yes, there is; however, this comment was specifically in regards to “Pollution Scenario 2 - Breach of aquitard or connection of discrete aquifers” and so the focus of the comment was on the relationship between the *natural* aquifer systems that underlie the Made Ground.

In Vibro Stone Columns Pollution Scenario 1, you state

“VSCs installed to 2m bgl following site turnover. Ground improvement limited to made ground only. No penetration into undisturbed / natural strata” . Yes, this is correct, turnover target depth was 2m bgl and so even shallow natural soils would be ‘disturbed’. As such the comment that there will be no penetration into undisturbed ground is accurate, following the site turnover.

In 3.3, you say that

“Made Ground was recorded to depths of between 0.95m and 6.80m bgl” . Please see the explanation below.

You then go onto state that

“Made Ground has been reported to a maximum depth of 6.50m bgl and was found to be thickest towards the southwest and central west of the site within the former infilled watercourse.” The apparent discrepancy is due us quoting the reported depth range taking into account both the historical third party (Geotechnics) logs and Tier Environmental investigation data whilst the second comment pertains to the information obtained during the Tier Environmental investigation alone. Nevertheless, this provides confidence that



there is no substantial difference between the deepest Made Ground thicknesses observed by both parties.

In 4, you say that

“The proposed pile locations are presented as Drawing No. FE0012-ROS-XX-XX-D-C-0500, Rev C01 produced by Roscoe.”

This drawing does not appear to have been included. Please find attached to this letter. The drawing shows drainage layout but also proposed pile locations.

So, are there going to be no VSCs in the area of shallow Made Ground? Are they just to be in areas where the thickness of MG is over 2m? No, VSCs will be positioned as per the attached drawing and do not discriminate based on Made Ground thicknesses.

Vibro Stone Columns Pollution Scenario 7- does the asbestos risk assessment need updating, or does it cover piling? I can't remember. The asbestos risk assessment is concerned with chronic risk and this intent is built in to the exposure frequencies and durations within the model used. Instead, risks to construction workers including piling workers will be addressed via dedicated contractor risk assessments in accordance with Control of Asbestos Regulations 2012.

Having written several PRAs in my time, I know they can be somewhat difficult to write as the guidance, still, is somewhat lacking, but this is a good report. We very much appreciate this feedback, thank you.

I sincerely hope the above responses are sufficient; however, please do not hesitate to contact us with any further queries.

For and on behalf of

TIER ENVIRONMENTAL LTD

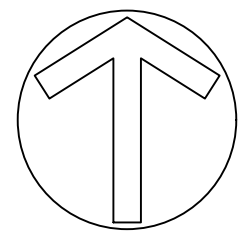
A handwritten signature in black ink, appearing to read "Adrian Read".

Adrian Read MEng (Hons)

Technical Director

Tier Environmental Ltd

Enc: Drawings



Drainage design is currently based upon latest Architect information and has been produced for initial cost benchmark purposes. Subject to change following additional information being provided and UU input on constraints.

- Proposed Surface Water Drainage
- Slot Drain - Gatic
- Filter Drain
- Surface Water Back Drop
- Gully
- Rain Water Pipe
- Channel Drain Sump
- Surface Water Rodding Eye
- Surface Water Flow Control Chamber
- Bypass Interceptor
- Vent Pipe
- Cellular Attenuation Tank
- Easements
- Proposed Foul Sewer Drainage
- Foul Pop Up
- Foul Back Drop
- Internal Floor Gully
- Existing UU Surface Water Drainage
- Existing UU Foul Sewer Drainage
- Existing Private Surface Water Sewer to be abandoned
- Existing Private Foul Water Sewer to be abandoned / Kept for addition use
- Back of Wall Drainage
- Potential EV Canopy Rain Water Pipe
- Existing Slot Drain
- Channel Drain Sump
- Swale

DO NOT SCALE

- NOTES:
- Locations of SVPs and RWPS to be confirmed with Architect/M&E consultant. Drainage is subject to change following confirmation.
 - Connections to the public sewers to be agreed with United Utilities.
 - SW Discharge rate agreed to be agreed with council through planning and with United Utilities.
 - Any cover levels shown are indicative. Cover level to suit landscaping strategy.
 - Attenuation volumes to be confirmed subject to detailed drainage design.
 - All drainage is to remain private and designed following Building Regulations Part H guidance.
 - Any drainage channels to be Gatic PaveSlot or similar approved.
 - Drains with less than 0.6m cover to have concrete surround. This will be confirmed following landscape architect external level construction information.
 - Drainage not to be revised to be grubbed out or removed.
 - All internal foul gully's to be fitted with non return valves. Refer to drawing F0012-ROS-XX-XX-D-C-0562 for standard detail drawing.
 - Final foundation layout and depths TBC. May affect level and position of drainage runs.
 - PPIC access opening to be restricted to 350mm diameter or 300x300mm where depth of chamber to inverts is more than 1m.
 - Connection points for surface and foul drainage is subject to change following CCTV information and approvals.
 - Location of all surface water pick up points are subject to finalised landscape Architects levels design.
 - Attenuation tank location and size shown indicatively, finalised pond to be developed at detailed design.
 - Existing drainage shown to be abandoned is subject to CCTV survey confirming that the sewers will no longer be live following demolition of existing buildings.
 - All external hardstanding designed as impermeable. Drainage design subject to change if area's of permeable surfacing are introduced.
 - Drainage design has allowed for the standard 1.2m cover from crown of pipe to ground level at the head of drainage runs in trafficked areas and 0.9m cover in pedestrian zones. All drainage depths are subject to change following detailed design and discussions with the wider construction team.
 - Ground flood slab of proposed building to be suspended with a void space to underside. All foul pop-ups currently anticipated to go underneath ground floor slab.
 - It is currently anticipated that existing buildings Block A & Block B will be kept live during the construction of the proposed new building. Surface water drainage systems have been split into two distinct systems to allow for ease of construction.
 - Easement for existing surface water is currently shown at 3m either side. This has been approved by UU. Any retaining requirements within the easement to be confirmed by UU.
 - The privately owned sewers that have been proposed to be abandoned do not show an easement. CCTV has shown these sewers will no longer be live following demolishing works.
 - Proposed flow rate is based upon the existing brownfield run off rate, as the existing network has been modelled for a 2 year storm plus surcharge. A minimum 50% betterment has been applied to suit UU and Local Authority Guidance. Subject to approval by UU and the LLFA.
 - Rodding access required for all pop-ups.
 - All pop-ups design with minimum 1:40 gradient.

CD1	08.08.25	AY	STAGE 5 FOR CONSTRUCTION	JT	JC
P14	08.08.25	AY	UPDATED TO SUIT COMMENTS	JT	JC
P13	27.08.25	AY	UPDATED TO SUIT COMMENTS	JT	JC
P12	20.08.25	AY	UPDATED TO SUIT COMMENTS	JT	JC
P11	19.08.25	AY	UPDATED TO SUIT COMMENTS	JT	JC
P10	05.08.25	AY	UPDATED TO SUIT COMMENTS	JT	JC
P09	23.06.25	AY	STAGE 4 SS ISSUE FOR APPROVAL	JT	DB
P08	08.06.25	AY	STAGE 4 SS ISSUE FOR APPROVAL	JT	DB
P07	02.05.25	AY	STAGE 4 SS ISSUE FOR APPROVAL	JT	DB
P06	16.04.25	AY	STAGE 4 DRAFT ISSUE	JT	DB
P05	11.03.25	AY	UPDATED DRAINAGE DESIGN TO SUIT COMMENTS	JT	DB
P04	04.02.25	AY	UPDATED DRAINAGE DESIGN	JT	DB
P03	11.12.24	AY	UPDATED ISSUE TO SUIT COMMENTS	JT	DB
P02	02.12.24	AY	STAGE 3 ISSUE	JT	DB
P01	02.05.24	AY	STAGE 2 ISSUE	JT	JC
REV	DATE	BY	DESCRIPTION	CHK	APP

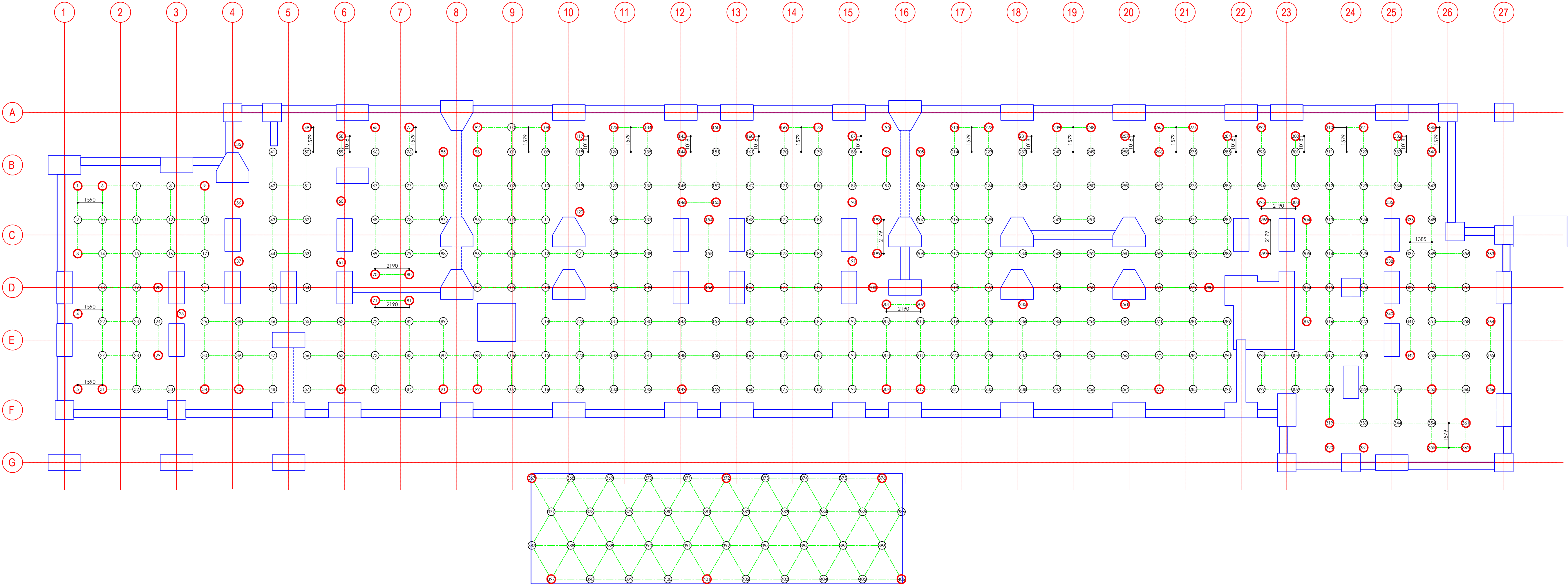
SS: SUITABLE FOR REVIEW AND ACCEPTANCE

S:\Templates\AutoCAD\Feedback\Recon Title Block Logo V2.jpg

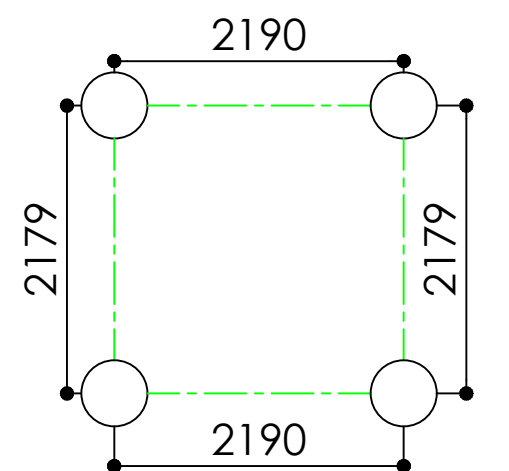
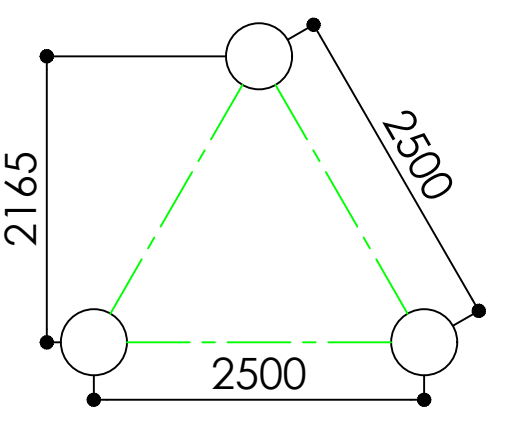
CLIENT:	WILLMOTT DIXON
ARCHITECT:	SHEPPARD ROBSON
PROJECT:	HOPWOOD HALL COLLEGE ROCHDALE
TITLE:	BELOW GROUND DRAINAGE GENERAL LAYOUT
SCALE @ A3:	1:200
PROJECT NUMBER:	24365
DRAWING NO:	F0012-ROS-XX-XX-D-C-0500
CHECKED:	JT
DESIGNED:	AY
DRAWN:	AY
DATE:	MAY 2024
APPROVED:	JC
REV:	C01



Town and Country Vibro



Drawing Based On:
ALL CENTRE LINES OF FOUNDATIONS, CHANGES IN DIRECTION AND CENTRE OF BASES TO BE SET OUT BY THE MAIN CONTRACTOR
COLUMNS HIGHLIGHTED  AND  ARE THE POINTS REQUIRED.
STONE COLUMNS TO BE CONSTRUCTED AS PER T & C METHOD STATEMENT
AGGREGATE USED TO FORM STONE COLUMNS SHOULD BE CLEAN HARD STONE WITH A GRADE OF 75kN/m² FOR THE TOP FEED METHOD OR 40kN/m² FOR BOTTOM FEED (OR SIMILAR).
ALL INTELLECTUAL PROPERTY RIGHTS AND COPYRIGHT OF THIS DRAWING BELONGS TO T&C VIBRO. THIS DRAWING HAS BEEN PRODUCED FROM INFORMATION PROVIDED BY THE CLIENT OR OTHER THIRD PARTIES AND T&C VIBRO ACCEPT NO LIABILITY FOR INACCURACIES ARISING FROM THE INTERPRETATION OF THIS DATA. THIS DRAWING IS NOT INTENDED FOR CONSTRUCTION PURPOSES BY ANY OTHER THIRD PARTY. T&C VIBRO ACCEPT NO LIABILITY OR ANY OTHER PERSON OR PARTY FROM THE USE OF THIS DRAWING, WHETHER IN WHOLE OR PART, WITHOUT PRIOR WRITTEN CONSENT FROM T&C VIBRO.
PLEASE NOTE THAT THE UPPER 500MM OF EACH AND EVERY COLUMN IS NOT COMPACTABLE WITH THE INSTALLATION METHOD. FOR FLOOR SLABS & EXTERNAL AREAS PLEASE CONTACT TOWN AND COUNTRY VIBRO LTD IN ADVANCE.



REV:	DESCRIPTION:	BY:	DATE:



**Town & Country
VIBRO LTD**

Town And Country House
Sarscow Farm, Sarscow Lane
Leyland, PR26 8LS
Tel: 01772 322 044
e-mail: info@townandcountryvibro.co.uk

CLIENT:
**WILLMOTT
DIXON**

PROJECT:
**HOPWOOD COLLEGE
ROCHDALE**

TITLE:
**STONE COLUMN OVERLAY
UNIT 1**

STATUS: **CONSTRUCTION**

ENGINEER:	AUTHORISED SIGNATURE:	DATE:	
	R.S	18.09.25	
ALLOWABLE SAFE BEARING PRESSURE			
BASE FOUNDATIONS		kN/m ²	
STRIP FOUNDATIONS		kN/m ²	
SLAB FOUNDATIONS		15 kN/m ²	
SPRINKLER TANK		75 kN/m ²	
COLUMN QUANTITIES			
BASE FOUNDATIONS			
STRIP FOUNDATIONS			
SLAB FOUNDATIONS		366	
LIFT BASES			
EXTERNAL AREAS			
SPRINKLER TANK		40	
TOTAL		406	
SCALE:	DATE:	DRAWN:	CHECKED:
NTS	18.09.25	O.D.K	R.S
PAPER SIZE:	DRAWING NO:	REVISION:	
A1	TCV-25091-1		