
Hatfield Business Park – Plot 5100.
26.01.2021.

Response to planning condition 7.

Condition 7. Borehole drilling, piling or other foundation designs using penetrative methods shall not be carried out other than with the written consent of the local planning authority.

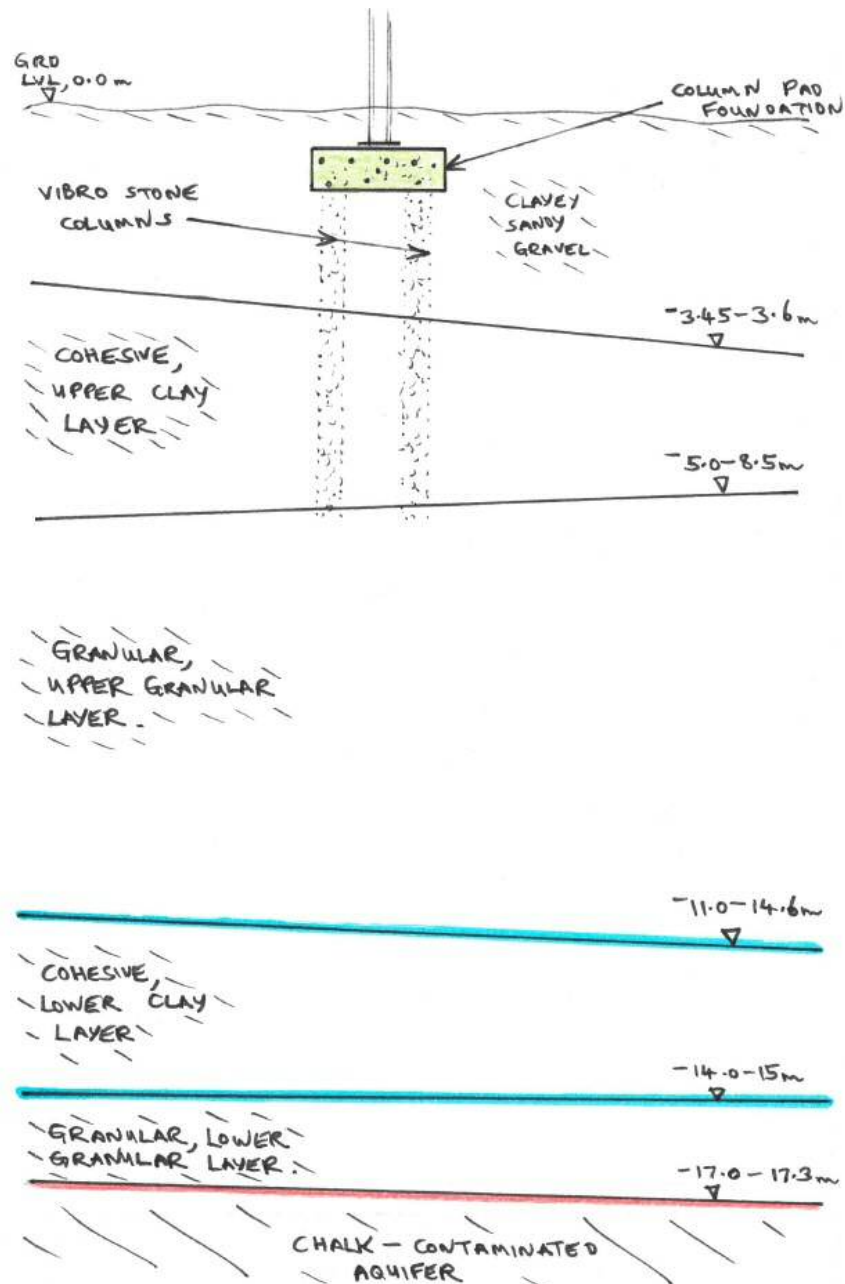
REASON: To ensure that the proposed foundations and other penetrative methods do not harm groundwater resources in accordance with Policy R8 of the Welwyn Hatfield District Plan 2005 and the National Planning Policy Framework. It cannot be reasonably concluded from the submitted information that the foundations design would not create a pathway for the contamination to migrate between shallow and deeper groundwater.

Foundation statement

The particularly sensitive nature of the site due to the lower aquifer being contaminated by a bromate and bromide plume is understood. The lower aquifer is present within the chalk at around 17m below ground level.

The foundation solution proposed comprises vibro stone columns which improves the ground immediately below any concrete pad foundations. The vibro specialist's quote is attached and proposes a maximum stone column depth of up to 5m. With this approach the stone columns will bear into the upper clay layer.

A section through the general ground profile as recorded by the geotechnical site investigation is included below; -



Pathways between the main upper gravel and the lower gravel are separated by a clay layer. The lower gravel is hydraulically connected with the chalk aquifers which is known to have bromate contamination. The stone columns will all remain within the upper gravel and the clay layer, the lower clay layer will not be affected and will provide an impermeable barrier between the base of the foundation improvement and any contaminated aquifer.

Attachments:

- Vibro Menard Stone Column Quote. (see section 4.3b for anticipated stone column depths)
- Drawings showing foundation layouts,
East Building(A&B): Drwg 12690-051-4 Foundation Layout
West Building (C): Drwg 12690-001-4 Foundation Layout

BT/V25957/VSC-C
21st January 2021

Winvic

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For the attention of **Jane Parry**

PLOT 5100 – HATFIELD BUSINESS PARK

Dear Madam,

Further to our recent exchanges, we are pleased to re-submit our tender for an alternative solution of ground improvement using the **Vibro Stone Column (VSC)** technique beneath the pad foundations of the proposed 2 buildings (A/B and C) at Plot 5100 in Hatfield Business Park. *The present revision of the tender takes into account the latest foundation drawings.*

The cost of the ground improvement would be for the sum of **£47,800.00** nett of discount and VAT, subject to the terms and conditions of this tender.

The estimated duration of our work is **up to 3 weeks** with a single VSC rig.

The Structural Engineer can consider an **SLS soil bearing capacity of 150 kPa beneath the foundations of the structure.**

It is assumed that our working platform will be around the Existing Ground Levels at the time of the site investigation. Please advise us of any change to the levels as this might impact our quotation. Our working platform should be around 300 mm thick in granular material or lime stabilisation. This working platform can then be used as the slab subbase.

Resources will not be reserved until an acceptable letter of intent or contract has been issued or entered into and in this respect, we will normally require a minimum of six to eight working weeks' notice from the date terms are agreed (subject to available resource) to allow us to reserve resources to meet your programming requirements.

If we do not agree contract terms or the conditions of an acceptable letter of intent six working weeks before the planned commencement date the only terms and conditions, we are prepared to enter into will be an unconditional acceptance of this tender.

If you should have any queries, please do not hesitate to contact the undersigned.

Yours faithfully
On behalf of Vibro Menard,



Benjamin Thomas
Estimating and Technical Dept.
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REFERENCE NUMBER	V25957
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C	21/01/2021	BT	FB	Update with new foundation drawing & 2021 price
B	23/03/2020	BT	FB	Update following CPT
A	13/12/2019	BT	FB	First issue
REV	DATE	AUTHOR	CHECKED BY	DETAILS OF MODIFICATION

**PLOT 5100
HATFIELD BUSINESS PARK**

**GROUND IMPROVEMENT WORKS
BY VIBRO STONE COLUMNS (VSC)**

TECHNICAL AND FINANCIAL PROPOSAL

Contractor:



**VIBRO
menARD**

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A subsidiary of  **menARD**

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1 INTRODUCTION

It is proposed to construct three new buildings at Hatfield Business Park, Plot 5100. The proposed construction footprint runs over made ground above variable clay and sand layers from the Lowestoft formation.

Due to the presence of made ground and relatively soft clay, a direct construction of any type of structure without soil improvement or replacement will lead to unacceptable post construction settlements and deformations.

The concerned structures are **the pad footings of:**

- **the East Showroom (Units A/B and workshop)**
- **the building C**

No ground improvement will be required beneath the slabs due to the low values of the UDL, nor beneath the foundations of the valet building due to the shallow competent ground.

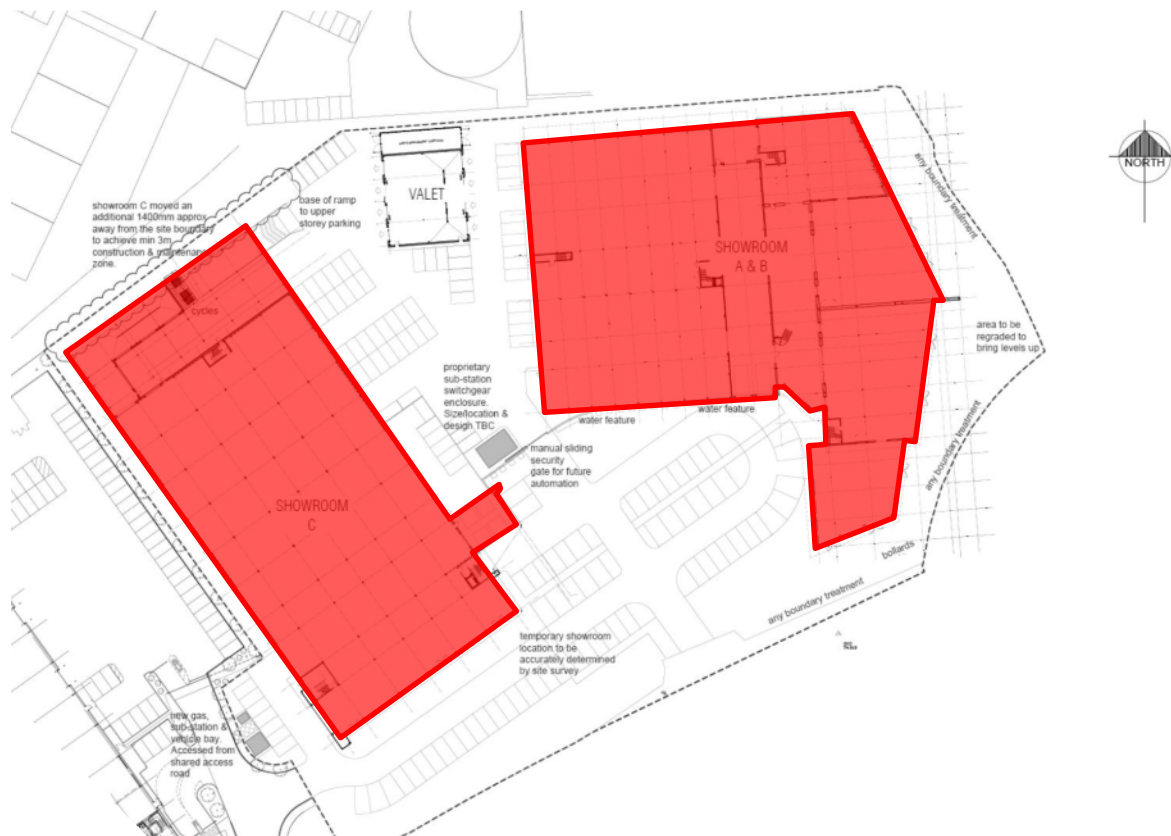


Figure 1 - Proposed site plan with concerned buildings in red

The present document consists in a technical and financial proposal for ground improvement with the Vibro Stone Columns (VSC) technique.

2 BASIS OF THE OFFER – DOCUMENTS

This submission comprises all the following documents which together with our covering letter form an integral part and basis of our offer:

- [1] The proposal inclusive of BoQ, schedule of attendances and commercial conditions of tender
- [2] Geoenvironmental and Geotechnical Site Investigation, RSK, report ref. 314394-01 (00) dated 25th April 2019
- [3] East Showroom – Units A & B and Workshop – Foundation Layout, Baynham Meikle, drawing no. 12690-051 revision 4 dated 08/12/20
- [4] Building C – Foundation Layout, Baynham Meikle, drawing no. 12690-001 revision 4 dated 09/04/20
- [5] CPT logs, Lankelma, CPT performed on 02 and 03/03/20

3 GROUND CONDITIONS

Our offer is based on the ground conditions described in the boreholes, trial pits and CPT from the site investigation reports listed above.

The typical soil profile is the following:

- Made ground
- Dense to very dense sand (with some looser bands) - Lowestoft Formation
- Firm clay (with some softer bands) - Lowestoft Formation
- Very dense sand - Lowestoft Formation

From our interpretation of the soils information ground improvement is required through the made ground, loose and soft layers of Lowestoft Formation. According to the concerned soil information no predrilling is necessary.

Any existing foundations, slabs and services are to be removed prior to our intervention.

The ground water level was encountered between 1 and 6 mbgl during the site investigation.

Any deleterious material or 'soft spots' encountered will require removal and replacement with loosely end tipped granular material (in accordance with our upfill specification) by others at no cost to ourselves. This shall then be treated as part of the ground improvement works.

Vibro Menard does not accept responsibility for the global stability of the site or of the strata below the level at which the site investigation terminated nor for subsidence or collapse beneath the level of our treatment which may be attributable, but not limited, to mine workings, voids or the like. Vibro Menard does not accept liability or responsibility for the creation of pathways for any pollutants entering the ground.

Vibro Menard should be made aware of any remediation or disturbance to the soils since the ground investigation works were undertaken.

We will give you notice of any ground encountered which in our opinion differs from that described above together with the method by which we propose the works might be completed in accordance with the contract and the changed soil conditions. In the event of such ground conditions we will require your written instructions and agreement to pay for the measures proposed. Any possible delay suffered by us as a result of these ground conditions or in obtaining your consent to proceed shall be added to our contract period.

4 TECHNICAL

4.1 Description of the ground improvement technique

Vibro Stone Columns are formed by inserting a vibroprobe into the soils to compact and incorporate granular material into the ground and create vertical inclusions with high stiffness, shear strength and drainage characteristics.

Under uniformly loaded structures such as embankments and slabs-on-grade, Vibro Stone Columns are installed on a regular grid spacing. Treatment by Vibro Stone Columns results in a reduction of the total and differential settlements.

Vibro Stone Columns can also be installed as a group to support isolated loads (shallow pads) or directly under linear loadings such as strip footing or retaining walls. In this case, Vibro Stone Columns increase the bearing capacity of the soil while reducing the magnitude of settlement.

4.2 Method of Execution

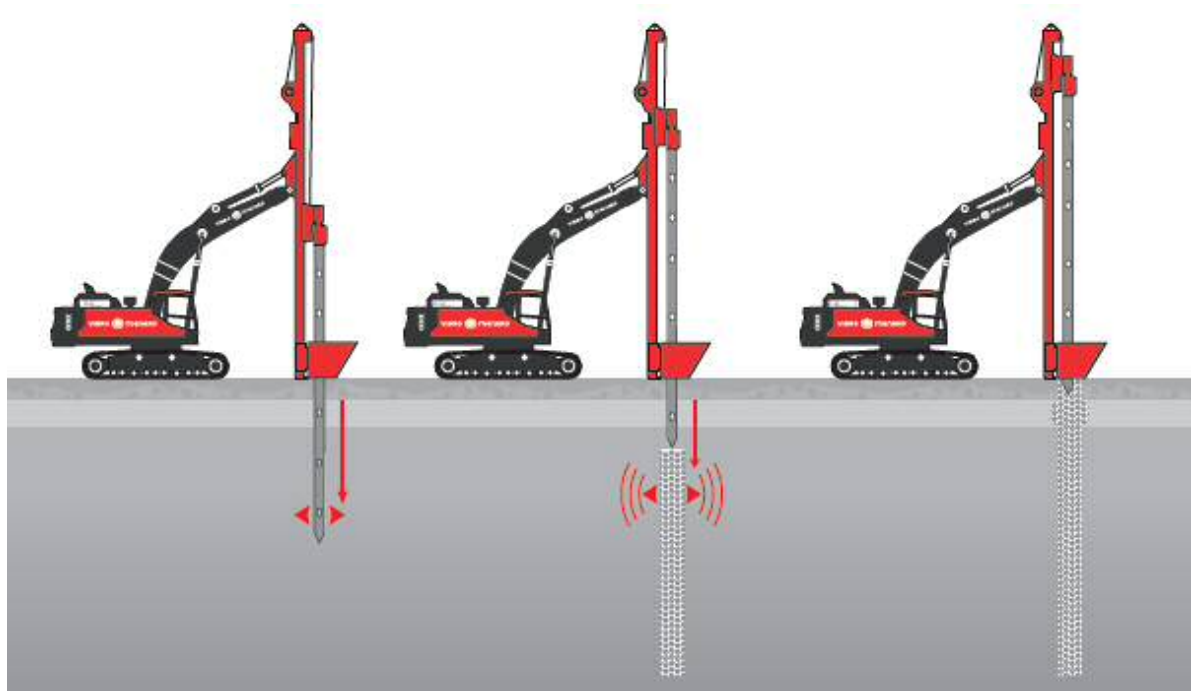


Figure 2 – Vibro Stone Columns installation process

The soil is penetrated to the required depth by the combined effects of Vibroprobe weight and vibration (plus jetting action by air if free hanging). The in-situ soil is displaced sideways.

The vibroprobe is then lifted out. Coarse gravel, crushed stone or slag is tipped into the hole in increments of typically 500mm of the column bore. The vibroprobe is re-inserted and the stone infill is compacted under the weight and vibration of the vibroprobe. Radial forces produced by the vibroprobe force the stone infill material horizontally out against the in-situ soil.

When the required degree of compaction has been reached, the vibroprobe is again removed. The filling / compacting cycle is repeated step by step up to the working platform level. Thus, a continuous column of dense granular material interlocking with the surrounding ground is formed through the treatment zone.

The diameter of the vibro stone column constructed is typically between 300-600 mm and is subject to the properties of the surrounding soil: in softer soils, the compaction process results in higher lateral expansion of the columns. Over the length of the entire column, variable diameter could thus be created due to variable layers with different soil conditions.



Figure 3 – Example of VSC installation on site

4.3 Adaptation to the project

4.3.1 Ground improvement principle

The foreseen ground improvement system involves the installation of vertical Vibro Stone Columns beneath the foundations in order to create a composite material [soil+VSC] and therefore increase the bearing capacity of the soil and reduce long term settlements to within acceptable limits.

4.3.2 Characteristics of the Vibro Stone Columns solution

- a) Our tender is based on our **working platform level being approximately equal to existing ground levels at the time the exploratory holes were put down**. *Please advise us of any changes to the levels as this will impact our quotation.*
- b) The anticipated depth of treatment below our working level will vary from 1 to 5 mbgl. Depths may vary according to the ground conditions encountered on site. *It may happen that for shallow VSC, during the excavation of the foundations, the totality of the VSC is as well excavated, in such case the foundation can be installed directly on the soil as the refusal of our equipment means that the bearing capacity of the soil is sufficient.*
- c) Pad/strip footings:
 - o The new structures must be supported on reinforced concrete pad and strip footings founded at a minimum of 0.6 m beneath the level from which the ground improvement is undertaken.
 - o VSC will be positioned either singly or in groups beneath pads and at a maximum of 2.5 m centres beneath strip footings.
 - o The final VSC arrangement beneath the footings will be determined at detailed design stage and will require a shallow foundation layout indicating the frame loads from the Engineer. *The foundation arrangement and loads considered in this tender are based on the foundation drawings [3] and [4].*
 - o An increased SLS bearing capacity of **150 kPa** will be achieved beneath the pads with VSC.
- d) Ground bearing slabs:
 - o N/A
- e) Prior to construction of floor slabs or pavement areas the formation must be regraded and mechanically compacted by vibratory roller.
- f) Long term residual settlements under the exploitation loads will be limited to 25 mm with relative differential settlements not exceeding 1/500.
- g) The working area should be prepared to the working levels detailed in 4.3.2 (a), including the working platform. Please advise us as to any change in this assumed level so that we can amend our tender accordingly. The working platform should extend at least 2.0 m horizontally beyond the perimeter of the building and have a slope not greater than 1 in 2.
- h) When treating predominantly granular soils there may be no or only small amounts of our imported backfill evident at depths of over 1.0 m. This results from the loose granular in-situ soil falling down the bore as the Vibroprobe is withdrawn and acting in place of our aggregate. This is not detrimental to the performance of the ground improvement.

5 TESTING

We propose to check the quality of our work by Plate Loading Tests as described below. We have included for **10 plate load tests** on this project.

- The Plate Loading Test comprises a 0.6 m diameter plate which is positioned centrally over a Vibro Stone Column on a layer of sand at a depth of approximately 0.6 m below working surface. The load is applied centrally to the plate by a calibrated hydraulic jack.
- The plate is carefully bedded onto the Vibro Stone Column point by means of a small pre-load of 2.0 tonnes which is immediately released. The stage loading will then be applied in 2.0 tonnes increments up to 3 times the particular design bearing pressure calculated over the area of the plate or to a maximum of 11.0 tonnes whichever is the least.
- Deflections of the plate will be measured by dial gauges supported independently and remote from the test area. Unloading is carried out in a single stage and recovery recorded. The total duration of each test will not exceed 1 hour.

As an option, we could also propose to undertake dummy foundation tests as described below.

- Our dummy foundation test consists of a rigid fabricated steel plate whose dimensions of 1.5 m x 0.6 m which will be laid on a thin layer of sand in a carefully prepared trench approximately 600 mm below the level from which treatment was undertaken.
- This plate will be bedded onto the ground by means of small pre-load of 20 kN which is immediately released.
- The loading is applied centrally to the plate by a calibrated hydraulic jack using our rig as Kentledge.
- Reference beams carrying 4 dial gauges will be supported by stakes driven into the ground.
- The loadings will be applied in 5 equal increments at a rate of 2.25 tonnes per 15 minutes to a maximum load of 150 kN/m² calculated over the actual area of the plate (i.e. 135 kN). The final test load is to be held overnight.
- At the end of the test unloading will be carried out in a single stage and the recovery of the plate will be measured.
- The reading on the dial gauges will be recorded at suitable intervals to enable graphs to be drawn giving the results of settlement against load.

In cohesive soils relatively high settlements of the plate may be recorded due to temporary increase in pore water pressure. Also tests are not usually undertaken between stone columns. The results of tests in clay soils cannot be used as failure criteria for our work.

Dummy footing tests will require some out of hours work to allow the application of increments up to final hold out of productive hours. This can typically require 3 hours outside of the standard hours of work, all necessary attendances to allow us to undertake this should be made.

6 MONITORING AND RECORDING

- a) A layout drawing showing the location of each Vibro Stone Column will be produced by Vibro Menard Limited. The work done will be recorded by a log of each VSC showing the VSC reference number, penetration length and a note of any unusual circumstances encountered during the compaction. This log will be recorded on our standard Daily Record Sheet. As a matter of record of the chargeable work carried out, we require this form to be attested daily as a true record of work carried out by the Client and Vibro Menard.
- b) Where requested, 'as-built' records and drawings can be provided. No retention of monies is to be made against the agreed and certified final application for payment.
- c) All work will be measured and valued in accordance with the agreed Daily Record Sheets at rates given in the Bill of Quantities and/or Schedule of Rates.

7 WORKS PHASING

- a) Removal of topsoil layer and levelling works and removal of any existing foundation, services and slabs (*Main Contractor*),
- b) Installation and testing of a granular or part lime stabilised working platform to support our equipment (*Main Contractor*),
- c) Execution of Vibro Stone Columns by *Vibro Menard Ltd*,
- d) Re-grading and re-compaction of the working platform (*Main Contractor*),
- e) Installation of the hard-core layer below the slab (*Main Contractor*),
- f) Construction of the structures (*Main Contractor*).

8 POST TREATMENT WORKS

- 8.1 Some surface disturbance may result from our treatment and in some cohesive soils there may be surface heave. Others are to make final adjustments to level as may be necessary and remove surplus materials at no cost to us, including any excess infill stone.
- 8.2 All excavations by others following treatment will be executed in a manner which will not loosen or disturb treated ground below the proposed foundations. Care should be taken whilst laying adjacent services and when excavating below the water table in fine grained cohesionless soils where 'running sand' conditions may exist.
- 8.3 Where excavations for footings of the new structures expose obstructions such as cellars or old foundations these must be cut down 1.0 m below proposed founding level. Excavations so formed shall be made good to formation level with granular material compacted in the trench by the Main Contractor. This avoids the possibility of the new foundations resting on local hard points.

9 OBSTRUCTIONS

- a) Occasionally an obstruction may prevent or significantly slow down penetration of the vibroprobe causing a “refusal” which has the potential to cause damage to our equipment.
- b) In these circumstances we will attempt to install a Vibro Stone Column again at a point a short distance away from the intended position introducing additional VSC where necessary to bridge the obstructions.
- c) Large obstructions which cannot be dealt with in accordance with the preceding paragraph will require excavation and removal and subsequent loose backfilling with suitable granular material and re-compaction at no cost to us.
- d) Any refusals and additional VSC required under items above will be charged at the rates given in the attached Bill of Quantities.

10 ADJACENT STRUCTURES AND SERVICES

- a) At the time of the Vibro Stone Column work is carried out there will be no existing structure or underground service within 5.0 m of any of our VSC positions.
- b) Where our works are required close to an existing building or feature, others are to ensure that the structure is of a good condition and will not be affected by our operations. We are unable to accept any liability for any such damage.

11 BILL OF QUANTITIES

No	Item	Qty.	Unit	Rate	Amount £
1	Site installation, mobilisation, demobilisation and set up of our VSC equipment	1	Item	£3,750.00	£3,750.00
2	Execution of Vibro Stone Columns (VSC) beneath pad footings of:				
a	East Showroom (Units A/B and workshop)	1	Item	£23,500.00	£23,500.00
b	Building C	1	Item	£19,550.00	£19,550.00
	<i>SLS bearing capacity of 150 kPa beneath footings</i>				
3	A rate per plant unit hour (or part of) to cover any standing time when our operations are delayed through causes outside VM's control	Each	No	£200.00	Rate Only
4	Testing:				
a	Undertake plate loading test	10	No	£100.00	£1,000.00
b	Undertake dummy foundation test	Each	No	£500.00	Rate Only
5	Drawing revisions made due to design changes by the main contractor, engineer or architect	Each	Rev	£180.00	Rate Only
6	A rate for additional VSCs due to obstruction and/or additional structures	Each	Im	£15.90	Rate Only
7	Design of the VSC scheme including detailed design report and drawings	1	Item	Included	Included
	TERMS				
a	All rates are based on a single visit to site and on achieving unimpeded continuity of work				
b	Price is lump sum and not subject to remeasure				
c	Price is based on working platform levels detailed in section 4.3 of our tender				
d	Minimum contract value of £10,000.00 shall apply per visit				
	VAT No. 413 9272 59			Total £	£47,800.00

12 VALIDITY AND STATUS OF OUR OFFER

The validity of this offer is subject to commencement of work within 45 days from the date of this Tender. After that date we reserve the right to negotiate new rates and terms.

13 COMMENCEMENT NOTICE AND PROGRAMME

- 13.1 We will be in a position to commence work on site within 30-40 working days/6-8 weeks (unless advised otherwise) from receipt of an acceptable order or letter of intent and final working fully dimensioned foundation drawings in DWG format. This will be subject to the availability of the required resources.
- 13.2 If, following your instruction to proceed, the works are subsequently cancelled or postponed without sufficient notice such that we are unable to re-allocate our rig/s and resources to other work, we shall be entitled to recover such reasonable sums to cover our loss of opportunity/earnings.
- 13.3 We expect to complete the works within **3 weeks** of our commencement using a single VSC rig. We will require a subcontract period of 4 weeks. Our offer is based on an unimpeded and uninterrupted continuity of works in a logical sequence.
- 13.4 We have allowed for the completion of our works in one visit to site. Should the works become discontinuous and further visits to site become necessary we shall require reimbursement of the additional establishment and disruption costs based on the rates contained in this tender.
- 13.5 If we do not agree contract terms or the conditions of an acceptable letter of intent six working weeks before the planned commencement date the only terms and conditions, we are prepared to enter into will be an unconditional acceptance of this tender.

14 INSURANCE INDEMNITIES

- 14.1 Where works are close in proximity to existing property, we shall not be liable for any damage or nuisance which occurs as an inevitable result of our execution of the required works and/or compliance with instructions.
- 14.2 We cannot accept responsibility for damage and consequential loss due to instability of the site, settlement or movement due to underpinning, mine workings, use of explosives, springs, artesian water or to the presence of soluble or deleterious matter and loss of support due to unspecified subsequent workings, underpinning, pipe laying or other causes outside our control or knowledge. We cannot accept liability or responsibility for the creation of pathways for pollutants entering the ground.
- 14.3 Where excavations for footings of the new structures expose obstructions such as cellars or old foundations these must be cut down a minimum of 2.0 m below proposed founding level. Excavations so formed shall be made good to formation level with granular material compacted in the trench by the Client. This avoids the possibility of the new foundations resting on local hard points.
- 14.4 We note the Insurance levels and requirements as contained within the enquiry documents. The levels of cover that we can provide in relation to this project will need to be discussed and agreed prior to contractual commitment.

15 SCHEDULE OF ATTENDANCES AND FACILITIES

For the purpose of this section the following definitions shall apply:

Specialist	-	Ground Improvement Specialist [Vibro Menard Limited]
Client	-	Person / Company directly employing the Specialist
Specialist Works	-	Any operation or installation undertaken by the Specialist
Working Surfaces-		Any platform, ramp, lay-down, storage area or the like required to be used by the Specialist

The following attendances and facilities shall be provided and maintained by the Client at all times (including additional working hours if necessary) for the duration of and in relation to the Specialist Works, free of charge to the Specialist and in a manner so as not to disrupt or restrict the regular progress of the Specialist Works.

15.1. Preparation of Treatment Area. All topsoil, vegetation, rubbish, fly tipping, soft spots together with any surface or known subsurface obstructions to our vibroprobe should be removed prior to our commencement. Working platform to be provided in compliance with 15.14. Working platform to extend a minimum 2 m beyond the footprint of the building.

15.2. Notices and Approvals. Giving all notices and obtaining all necessary approvals, licences and sanctions, including but not limited to any method statement and/or design submission approvals (inc. building control, NHBC, Premier Guarantee etc), planning consents, party wall agreements, local authority notifications, wayleaves, easements, possessions, rights of way or access and the like from third parties.

15.3. Rates and Fees. Payment of any rates or fees which may become payable due to occupation of the Specialist Works.

15.4. Design Information. No later than two working weeks (or other period as agreed) in advance of the programmed commencement of the Specialist Works on site, provide the Specialist with complete and final construction issue drawings (in dwg format), specification(s), and other relevant information required to undertake the Specialist Works. Any variation to these documents to be notified to the agreed contact in hard copy format.

15.5. Existing Services & Underground Assets. Prior diversion or removal of services/assets to facilitate installation of the Specialist Works and, where required by the owner of the service/asset, written evidence confirming no services/assets are present and/or that work may proceed. Exposing on site or accurate, clear and robust marking of the exact location of remaining overhead or underground services/assets and providing a drawing on which their positions in line and level are accurately plotted relative to the Specialist Works. The location and sealing off of all live or disused pipes, ducts or the like. Subsequent to the foregoing the Specialist's authorised representative is to be issued with a Permit to Dig or similar authorisation on a daily basis or as otherwise agreed.

15.6. Obstructions. Prior removal of overhead, surface or underground obstructions which may impede the Specialist Works and backfilling of excavations and voids with a suitable material which will not obstruct or be deleterious to the works but which will ensure the stability of the Specialist Works and will maintain compliance with Items 15.12, 15.13 and 15.14.

15.7. Shoring/Underpinning. Shoring and underpinning as necessary, including the removal, replacement or adjustment of timbering or shoring which may impede the Specialist Works.

15.8. Clearance. The provision of clearance around working positions and protection to adjacent works, structures (including underground structures), third party property and other site boundary constraints, to allow the execution of the Specialist Works.

15.9. Fencing, Hoardings, etc. Hoardings, fences, noise and splash barriers, footpath canopies, statutory warnings, signage, flagmen or the like as necessary to protect the works, plant, materials, personnel and to provide protection to third party property and members of the general public at or adjacent to the site boundaries. This shall include protection from exhaust, oil, grease etc.

15.10. Traffic and Pedestrians. Control or diversion of footpaths, road, rail or water borne traffic, including all necessary arrangements and payment of charges in connection with any road closures, lane rental and/or suspension of parking bays, rail possessions and the like.

15.11. Watching. Provision of site security to safeguard plant, equipment, materials and the Specialist Works.

15.12. Access. Identification of routes along public highways within a minimum 2.5-mile radius of the site entrance(s) designed to be suitable and safe for the delivery of rigs, plant and materials and which avoid, to the extent practicable, schools and routes without cycle lanes. Full, free, controlled and uninterrupted access onto the site(s) from public highway along surfaces that are designed, installed, maintained and repaired to the same standards as in Item 14.13, including protective mats and all other equipment and measures necessary to ensure the safety of pedestrians and to avoid the risk of damage to third party property, including road surfaces, kerbs, footpaths/pavements, surfaces and services. Such access to facilitate the safe erection, operation and movement on, off and around the site(s), to and between lay-down, working and storage areas and column positions for plant including provision and where necessary relocation of ramps to a gradient not steeper than 1 in 10.

15.13. Hardstanding and Storage Areas. Provision, subsequent removal and exclusive use of conveniently situated hardstanding and storage areas designed, installed, maintained and repaired as required under Item 15.14 to facilitate the safe operation and erection of plant and equipment, storage of plant, equipment, materials and any site offices. Where it is not possible for the Specialist to have exclusive use of the Hardstanding and Storage Areas, the Specialist's agreement to any other activities to be carried out concurrently must be obtained before they are commenced.

15.14. Working Platform. Design, installation, maintenance, regular inspection, repair and subsequent removal and exclusive use of free draining Working Platform, safe for pedestrian access and in accordance with the requirements of the appended FPS Guidance, Regular Inspection Log and Working Platform Certificate, a signed copy of which must be provided to the Specialist prior to the Specialist's commencement. The design(s) shall include for all piling rigs, ancillary plant and equipment and wheeled transport including articulated lorries and the checking of any retaining structures which support the Working Platform. Where it is not possible for the Specialist to have exclusive use of the Working Platform, the Specialist's agreement to any other activities to be carried out concurrently must be obtained before they are commenced.

15.15. Surface Water and Groundwater. Any pumping or drainage required to keep the site free of flooding, surface water or any water arising from the Specialist Works.

15.16. Offloading and Loading: Availability free of charge, and for uninterrupted use, of appropriate work equipment or facilities complying with the Construction (Design and Management) Regulations 2015 & Work at Height Regulations 2005 (as amended 2007) to prevent falls from delivery vehicles.

15.17. Health, Safety and Welfare. Health, safety and welfare facilities as required to comply with the CDM (2015) Regulations and any other statutory regulations or rules, orders or regulations of any authority having powers related to the Specialist Works. Such facilities as a minimum to include the supply of drinking water, washing facilities including hot and cold running water, and secure, lockable male and female changing/drying facilities and toilets.

15.18. Environmental. Attendances, facilities and licences to comply with environmental legislation and rules/order or regulations of the Environment Agency and other statutory bodies.

15.19. Temporary Lighting. Background lighting to cover working area, access and welfare compound to allow safe working and safe access and egress and to facilitate execution of the Specialist Works.

15.20. Setting Out. Provision of clear, accurate and robust setting out and levels, checking and maintenance of individual column positions as necessary throughout the contract. Required setting out positions shall be identified on the specialist's layout drawings with a bold dot. Provision of permanent datum points, base lines, structural grid lines as required and as built survey information.

15.21. Attendant Excavator. The provision of a 360-degree excavator (and appropriately qualified operator) with a certificated minimum 1Tonne lift capacity in full time attendance to each rig for all operational purposes including removal of obstructions, removal of arisings, soft spots, platform repair and other general duties.

15.22. Spoil Removal and Waste Management. Classification, removal from site and disposal of excavated or displaced material including arisings and excess stone from the Specialist Works in accordance with current legislation, rules/order or regulations of the Environment Agency and other statutory bodies including notification to the Environment Agency where arisings are classified as hazardous waste.

15.23. Wheel and Road Cleaning. Manned wheel-cleaning facilities and/or road-cleaning, as necessary.

15.24. Protection. Protection of the works where taken over by other trades or contractors or where the Specialist has left site, whichever occurs first.

15.25. Contaminated Ground. Where the site investigation report indicates the presence of asbestos or contaminants, Vibro Menard will require written confirmation from the customer that all asbestos or contaminants have been removed from the ground by a competent specialist company prior to the arrival of equipment on site. If the receipt of this confirmation is not timely, and has the potential to delay the start date, Vibro Menard shall be entitled to treat the failure to provide timely confirmation as either a variation, or as a breach of the contract whereupon Vibro Menard shall be entitled to terminate the contract with immediate effect.

In the event where asbestos or contaminated ground is discovered during the works on site, Vibro Menard may leave site with all associated costs borne by the customer. Vibro Menard shall be entitled to terminate the contract, treat the discovery and all consequences as a variation and return to site with all necessary control measures put in place after written confirmation that all asbestos or contaminants have been removed.

The customer shall indemnify Vibro Menard in full in relation to the discovery of asbestos or contamination, and all consequences associated with this.

16 COMMERCIAL CONDITIONS OF TENDER

- 16.1 This offer is made on the condition that we enter into a contract with you (referred to hereafter as the “Client”) under a JCT Standard Building Sub-Contract (DBSub/C and DBSub/A) with Sub-Contractor’s design Conditions 2011 (save for clause 2.5 which shall not apply) including any published amendments thereto issued by the JCT up to the date of this offer. This offer shall be a numbered document in the Sub-Contract (hereafter referred to as the “contract”) except for paragraphs 16.2, 16.4 and 16.11 below which shall be Articles of the DBSub/A and take precedence over the terms included in the contract conditions should they be in, or capable of, conflict.
- 16.2 Unless agreed to the contrary, payment is to be received by ourselves within 14 days of the date of each of our monthly applications and no money shall be deducted by way of retention. In consideration of late or overdue payments, we shall be reimbursed by the Client at a rate equivalent to 8% per annum above the base lending rate set, at the time, by the Bank of England compounded on a daily basis.
- 16.3 Notwithstanding any other conditions which may appear in the contract in respect of any alleged breach of contract or otherwise, no deduction or “set off” shall be made from sums due to us without prior notification and submission to us of proven costs. Payment for work carried out under the contract shall not be withheld or reduced as a result of disputes between the Client and any other company which is subsidiary of Vibro Menard Limited’s ultimate parent company.
- 16.4 Notwithstanding any provision of the contract:
- a) our total aggregate liability in contract, tort, for breach of statutory duty or otherwise under and in connection with the contract including for delay under paragraph 16.4b shall not exceed £50,000.00 or 10% of the tender sum whichever is the lesser and we shall not be liable for any loss of actual or anticipated profit or any indirect, special or consequential losses; and
 - b) our total aggregate liability for delay under or in connection with the contract shall not exceed the total aggregate amount of £1,000.00 per week of delay or 1% of our tender sum whichever is the lower provided we are not be liable for the first two weeks of delay.
- 16.5 The wording of any form of Warranty or Bond (if required) in respect of the works must be agreed by us prior to contractual commitment. Any bond wording will need to be based on standard on-default ABI wording with a defined long stop expiry date and can be provided based on job value for a premium charge (to be advised). Under no circumstances shall the Client withhold monies from payments due to us. Unless expressly stated elsewhere in this offer the cost of providing a bond is not included in the tender sum.
- 16.6 No liability will be accepted for delay or for the cost of remedial works to ground treatment displaced from its position by obstructions.
- 16.7 If any defect is found in the ground treatment, liability will only be accepted for delay and/or the cost of remedial works if we have received timely written notification of the defect (and in any case within 5 days of the Client discovering it) and have been provided the opportunity to rectify the defect ourselves.

- 16.8 Unless we have acted negligently no liability will be accepted for any loss or damage to underground walls, structures or services or for loss or damage to adjacent property structures or utilities and we shall be indemnified in full by the Client for such loss and damage and any costs we incur as a consequence. In such circumstances we shall be entitled to have our completion date extended accordingly.
- 16.9 Noise, vibration and nuisance will be kept to a reasonable level compatible with normal plant usage to complete the works specified. If our work programme or methods are to be subjected to further controls from any source whatsoever, we require to be instructed in writing as to the alternative action which we are to take. All additional costs resulting from complying with such instructions will be reimbursed to us and the period for completion extended as necessary.
- 16.10 Should the actual ground conditions encountered be different (by interpolation) to the information referred to in this offer we shall notify the Client as soon as reasonably practical. We shall require to be instructed by the Client on any steps to be taken and shall be entitled to (1) reimbursement of the additional costs incurred as a result of any changes in the ground conditions and (2) an appropriate extension of time for completion of works.
- 16.11 Where any opening up for inspection, testing and reinstatement is instructed and the work, the subject of such instruction, is found to be in accordance with the contract, then any costs and expense in respect thereof shall be reimbursed to us and an appropriate extension of time granted for completion of the works.
- 16.12 Our stated period for completion excludes the following; - Approval periods, notice to commence, delays due to circumstances beyond our control, public and/or industry holidays, testing, variations (including idle and/or standing time) and provisional items.
- 16.13 Unless provided for elsewhere in this tender this tender is based on the uninterrupted execution of the work on site in one continuous operation in the working hours set out in section 16.18. If our resources stand or are disrupted for reasons beyond our control (whether before, on or after our contract completion date) we shall be entitled to be paid for our resources based on the standing time rate included in this tender.
- 16.14 All plant which is the property of this company shall remain in our ownership but for the purposes of any contract shall be deemed to be hired plant and as such shall not be taken and sold by the Client in an attempt to recover a debt, alleged or otherwise.
- 16.15 Our offer is subject to us undertaking a satisfactory site visit prior to the works. Vibro Menard reserve the right to amend or withdraw the offer following the site visit.
- 16.16 Letters of Intent will only be accepted if they include an instruction to proceed and an appropriate financial commitment. The specific terms of any letter of intent will need to be agreed with us in advance of it being formally issued. Resources will not be reserved until an acceptable letter of intent or contract has been issued or entered into.
- 16.17 If we are required under the contract to design work, then we shall have in respect of any defect or insufficiency in the design the same liability as a contractor whose duty is to exercise reasonable skill and care in the preparation of its design. If our design is adopted by the Client or any other party involved in the works e.g. the consultant engineer, we shall have no liability for the design so adopted and we shall not be liable for any related subrogation claims.

- 16.18 The prices in this tender allow for work proceeding during our normal working hours without disruption in an agreed logical sequence commensurate with the particular nature of the works. Our normal working hours are between 0800 - 18.00hrs (Monday – Friday) and 0800 – 1400hrs (Saturday - VML option).
- 16.19 CDM Regulations - If a Pre-tender Health and Safety Plan is not received with your enquiry documents, we reserve the right to amend our offer after having received this information.
- 16.20 We will require that any delay and/or additional costs associated with the Coronavirus be deemed to be the risk of yourselves and others and we require compensation accordingly covering both time and additional costs should our works cease or become disrupted due to this matter.
- 16.21 Cancellation – If the works are cancelled through no fault of Vibro Menard the following rates will apply:
- 7 to 14 days prior to mobilisation £Mobilisation / Demobilisation cost
 - 3 to 7 days prior to mobilisation £25% value
 - 1 to 2 days prior to mobilisation £50% value
 - On the day of intended mobilisation £75% value
- 16.22 Contaminated Ground: Where the site investigation report indicates the presence of asbestos or contaminants, Vibro Menard will require written confirmation from the customer that all asbestos or contaminants have been removed from the ground by a competent specialist company prior to the arrival of equipment on site. If the receipt of this confirmation is not timely, and has the potential to delay the start date, Vibro Menard shall be entitled to treat the failure to provide timely confirmation as either a variation, or as a breach of the contract whereupon Vibro Menard shall be entitled to terminate the contract with immediate effect. In the event where asbestos or contaminated ground is discovered during the works on site, Vibro Menard may leave site with all associated costs borne by the customer. Vibro Menard shall be entitled to terminate the contract, treat the discovery and all consequences as a variation and return to site with all necessary control measures put in place after written confirmation that all asbestos or contaminants have been removed. The customer shall indemnify Vibro Menard in full in relation to the discovery of asbestos or contamination, and all consequences associated with this.

GENERAL NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH BAYNHAM MEIKLE & ALL OTHER RELEVANT ARCHITECT'S, ENGINEER'S AND SPECIALIST'S DRAWINGS (PLUS ANY SPECIFICATIONS). ANY DISCREPANCIES FOUND BETWEEN THESE DRAWINGS MUST BE REPORTED IMMEDIATELY, PRIOR TO THE INITIATION OF ANY AFFECTED WORK ON SITE.

FOUNDATION NOTES:

- FOUNDATION DESIGN BASED ON ALLOWABLE BEARING PRESSURE OF 150kN/m² AFTER VIBRO COMPACTION TREATMENT OF THE GROUND.
- TOP OF FOUNDATIONS TO BE 30MM BELOW FFL, UNLESS NOTED OTHERWISE.
- PAD BASES TO BE REINFORCED IN ACCORDANCE WITH THE FOUNDATION SCHEDULE.
- CONCRETE TO PAD BASES & GROUND BEAMS TO BE CONCRETE GRADE BS44, CONSISTING OF 320kg/m³ CEMENT CONTENT, WITH 20mm AGGREGATE SIZE AND 0.55 MAXIMUM FREE-WATER CEMENT RATIO.
- MINIMUM CONCRETE COVER TO REBAR TO BE AS FOLLOWS:-
 BOTTOM COVER = 50mm
 TOP & SIDES COVER = 40mm.

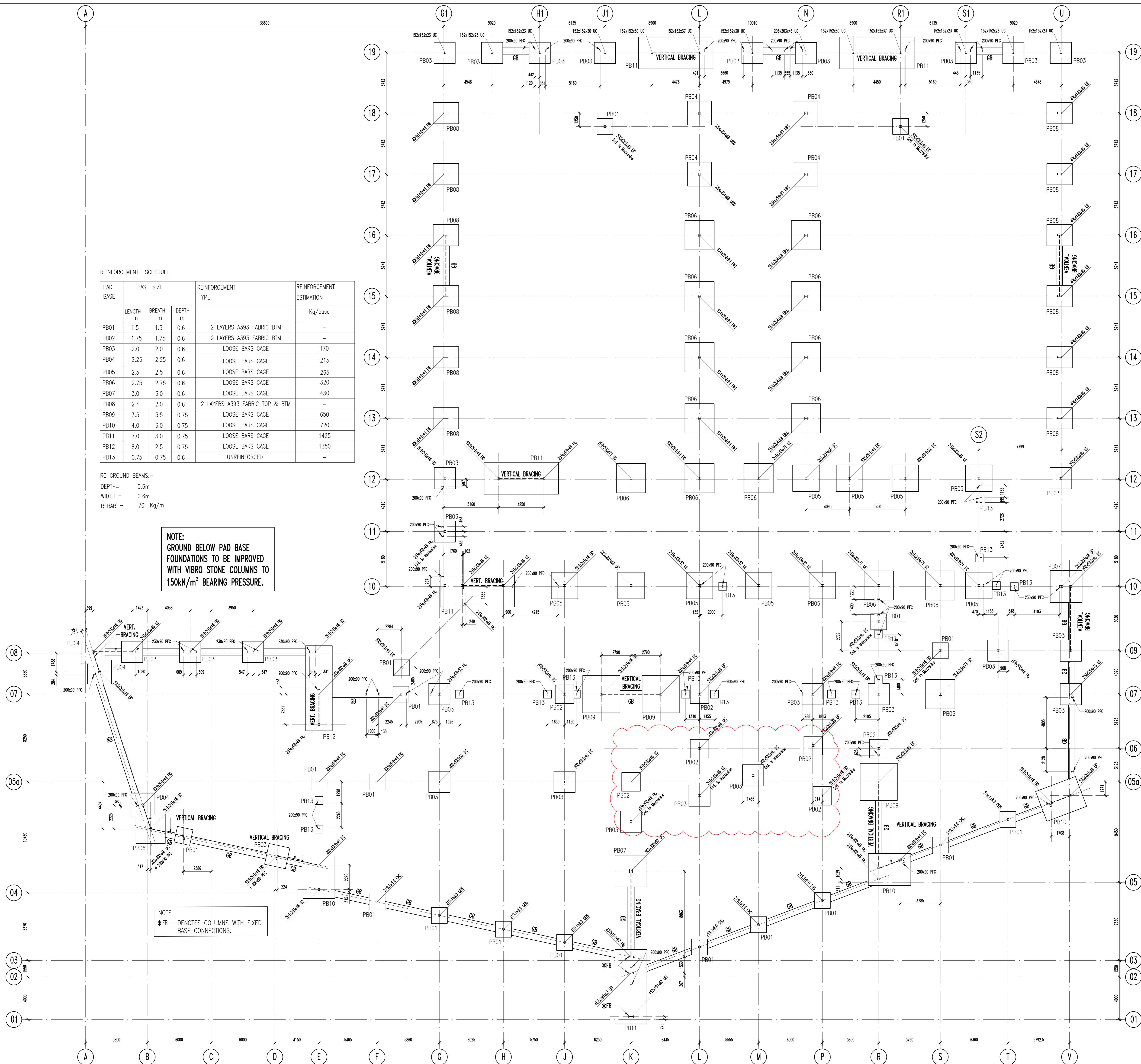
REINFORCEMENT SCHEDULE

PAD BASE	BASE SIZE			REINFORCEMENT TYPE	REINFORCEMENT ESTIMATION Kg/base
	LENGTH m	BREATH m	DEPTH m		
PB01	1.5	1.5	0.6	2 LAYERS A393 FABRIC BTM	-
PB02	1.75	1.75	0.6	2 LAYERS A393 FABRIC BTM	-
PB03	2.0	2.0	0.6	LOOSE BARS CAGE	170
PB04	2.25	2.25	0.6	LOOSE BARS CAGE	215
PB05	2.5	2.5	0.6	LOOSE BARS CAGE	265
PB06	2.75	2.75	0.6	LOOSE BARS CAGE	320
PB07	3.0	3.0	0.6	LOOSE BARS CAGE	430
PB08	2.4	2.0	0.6	2 LAYERS A393 FABRIC TOP & BTM	-
PB09	3.5	3.5	0.75	LOOSE BARS CAGE	650
PB10	4.0	3.0	0.75	LOOSE BARS CAGE	720
PB11	7.0	3.0	0.75	LOOSE BARS CAGE	1425
PB12	8.0	2.5	0.75	LOOSE BARS CAGE	1350
PB13	0.75	0.75	0.6	UNREINFORCED	-

RC GROUND BEAMS:-
 DEPTH = 0.6m
 WIDTH = 0.6m
 REBAR = 70 Kg/m

NOTE:
 GROUND BELOW PAD BASE FOUNDATIONS TO BE IMPROVED WITH VIBRO STONE COLUMNS TO 150kN/m² BEARING PRESSURE.

NOTE:
 *FB - DENOTES COLUMNS WITH FIXED BASE CONNECTIONS.



CONCEPT
 THE STRUCTURAL SCHEME IS CONCEPT ONLY
 AND IS SUBJECT TO DESIGN DEVELOPMENT

TENDER

Rev	Date	Description	By	Chkd By
4	08.12.20	COLUMNS REVISED TO REFLECT LATEST ARCHITECTS DRAWINGS.	PRJ	MP
3	08.04.20	REVISED TO REFLECT VE SCHEME & LATEST ARCHITECTS DRAWINGS.	LS	MP
2	29.11.19	Updated to suit latest Architect's drawings.	PE	MP
1	22.11.19	First Issue.	PE	MP

Revision Schedule

Project Title
PLOT 5000A - HATFIELD BUSINESS PARK
EAST SHOWROOM - UNITS A & B AND WORKSHOP

Drawing Title
FOUNDATION LAYOUT

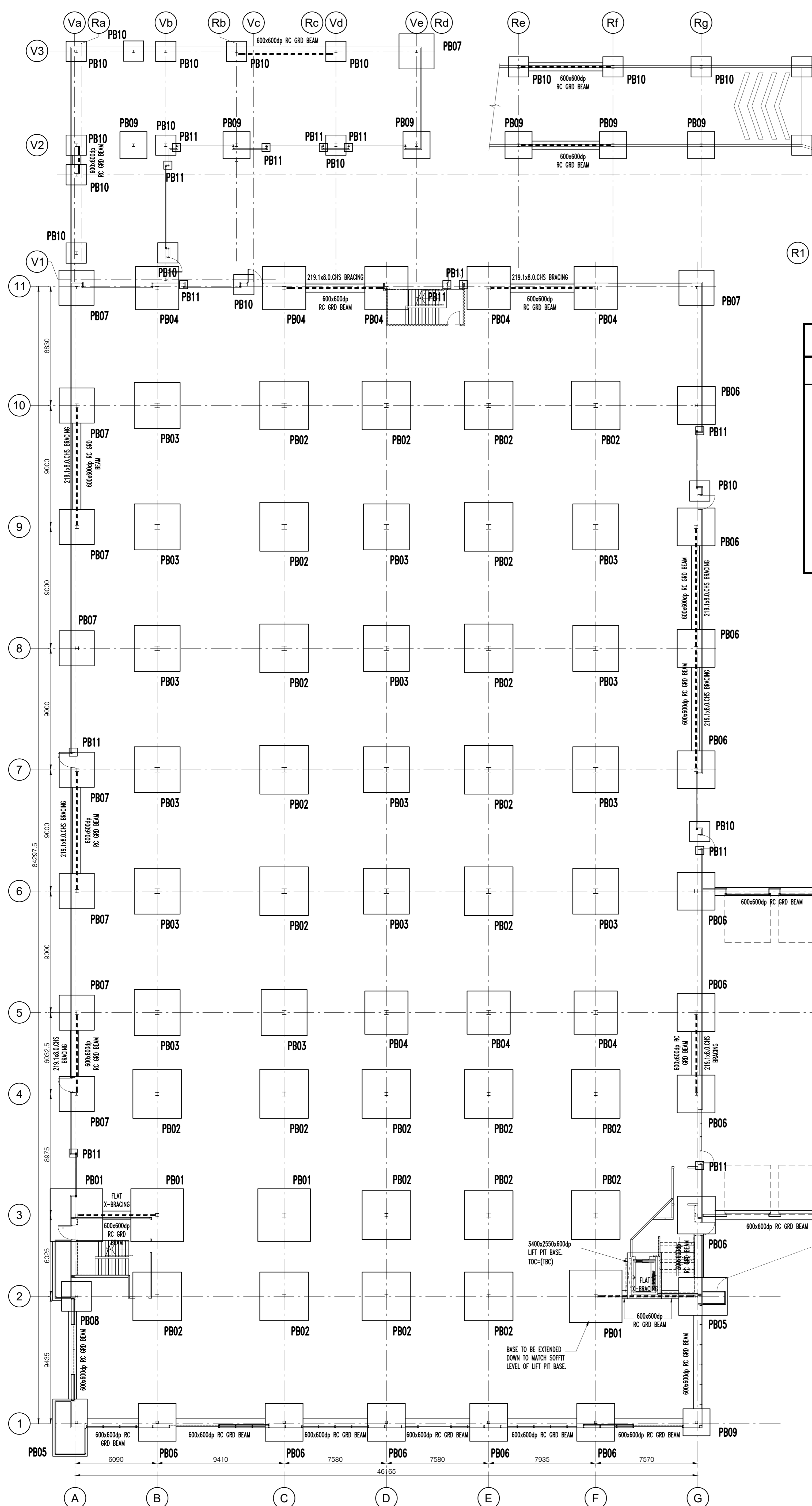
Drawn by	PE	Checked by	MP	Project Engineer	MP
Date	Nov. 2019	Scale	1:125	Project No	12690
				Drawing No	051
				Rev	4

BAYNHAM MEIKLE
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1. This drawing is to be read in conjunction with BAYNHAM MEIKLE specifications and also with all other relevant Architect's, Engineer's and Specialist's drawings (plus any specifications). Any discrepancies found between these drawings must be reported immediately, prior to the initiation of any affected work on site.
2. Foundation design based on allowable bearing pressure of 150 Kn/sq.m after vibrocompaction treatment of the ground.
3. Top of foundations to be 350mm below FFL.
4. Pad bases to be reinforced in accordance with Foundation Schedule.
5. Concrete to foundations and ground beams to be concrete grade RC40, consisting of 320kg/m³ cement content, with 20mm aggregate size and 0.55 maximum free-water/cement ratio.
6. Minimum concrete cover to rebar to be as follows:-
 Bottom Cover = 50mm
 Top & Side Cover = 40mm

Schedule of Bases		
Ref	Base Dimensions	Reinforcement
PB01	3900 x 3900 x 600dp	LOOSE BARS (CAGE)
PB02	3600 x 3600 x 600dp	LOOSE BARS (CAGE)
PB03	3400 x 3400 x 600dp	LOOSE BARS (CAGE)
PB04	3200 x 3200 x 600dp	LOOSE BARS (CAGE)
PB05	4200 x 2500 x 600dp	2No LAYERS A.393 MESH BOTTOM
PB06	2800 x 2800 x 600dp	LOOSE BARS (CAGE)
PB07	2600 x 2600 x 600dp	LOOSE BARS (CAGE)
PB08	2200 x 2200 x 600dp	LOOSE BARS (CAGE)
PB09	2000 x 2000 x 600dp	2No LAYERS A.393 MESH BOTTOM
PB10	1500 x 1500 x 600dp	2No LAYERS A.393 MESH BOTTOM
PB11	600 x 600 x 600dp	2No LAYERS A.393 MESH BOTTOM



Rev	Date	Description	By	Chkd By
4	09.04.20	TENDER ISSUE - REVISED TO REFLECT VE SCHEME AND LATEST ARCHITECTS DRAWINGS.	DRB	MP
3	06.12.19	Lift pit removed. Top of pilecap level lowered by 100mm. As clouded	MP	MP
2	29.11.19	General overall updates	PRJ	MP
1	20.11.19	First Issue	SH	MP

Revision Schedule				
Project Title				
PLOT 5000A HATFIELD BUSINESS PARK - BUILDING C				
Drawing Title				
FOUNDATION PLAN				
Drawn by	S. HARRISON	Checked by	MP	Project Engineer
Date	04.11.19	Scale	1:150, 20.	Project No
				12690
			Drawing No	001
			Rev	4

CONCEPT
 THE STRUCTURAL SCHEME IS CONCEPT ONLY
 AND IS SUBJECT TO DESIGN DEVELOPMENT

Building C
Foundation Plan
 (Scale 1:150)

TENDER