

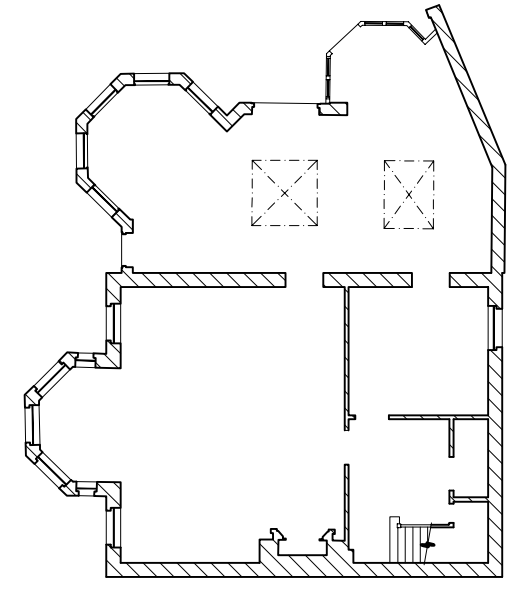
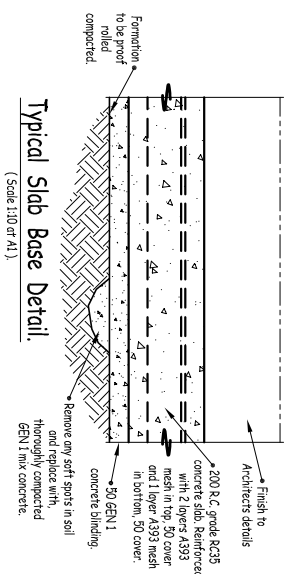
**Proposed Basement Plan Showing Proposed Underpinning Plan.**  
Scale 1:50 (or A1)

**Underpinning Notes**

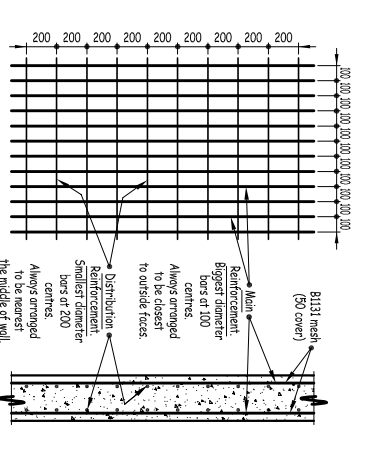
- U1. The underpin numbering is for identification purposes only.
- U2. The sequence of underpinning should follow the method 1, 4, 2, 3 pattern. The Contractor is to provide drawings marked up, to show their proposed sequence for the Engineer to approve, a minimum of 14 days before work is commenced.
- U3. Underpinning to be a maximum length of 1200mm, subject to the Engineer's approval.
- U4. Provide corner bars in underpinning status, to ensure mesh reinforcement is held in place, during concreting.
- U5. All reinforced concrete cast on the ground shall be placed on 50mm GSN1 concrete mix.
- U6. Foundations have been designed to impose a net bearing pressure of 150kN/m<sup>2</sup> on sand and gravel, at depths shown. The bearing stress shall be approved by the Local Authority's Building Inspector, before laying shielding or casting foundations. Any additional economic steel shall be replaced with a GSN1 concrete mix. But in the event of extensive excavation being required, the Engineer must be immediately notified and the necessary measures taken.
- U7. Concrete mix for foundations shall be a RC35/45 mix with a minimum Ordinary Portland cement content of 320kg/m<sup>3</sup> and a maximum water/cement ratio of 0.50 concrete shall be at least 98 hours before dry packing.
- U8. Concrete cover to the reinforcement shall be as detailed on the drawings but never less than 35mm.
- U9. The minimum depth of the underpinning, (measured from the underside of the existing footing, to the underside of the new), shall be 300mm, and shall be formed on a strata, capable of sustaining a permissible net ground pressure of 100kN/m<sup>2</sup>, on sand and gravel.
- U10. The underside of the existing wall or foundation shall be trimmed and cleared of all mud and debris, before dry packing. The dry pack shall be a 1:3 mix and well rammed in horizontal layers, not exceeding 75mm thick. Dry packing shall be left 24 hours before works are commenced on adjacent underpins.
- U11. The central area of excavation shall not be carried out until the perimeter underpinning has been completed.
- U12. If accessory backfilling behind existing walls shall be a 1:20 mix, using Ordinary Portland Cement.
- U13. Services: The Contractor is to carry out a survey of the property and adjacent areas, to establish the location of all services, including gas, water, electricity and drainage. Any obstructions found are to be brought to the attention of the Architect and Engineer. The Contractor is to allow for any temporary support to the services or destruction during the underpinning.
- U14. Excavations: The excavation shall be to the depth and width shown on the drawings. However where these notes are omitted, new underpins are to extend 600mm below the last trace of any root activity. The sides of the excavation, shall be adequately shored and propped to prevent subsidence or slip of the soil faces behind the pile and at formation level shall be undisturbed.

**Reinforcement Note**  
Wall and Foundation reinforcement shall be continuous. If loose bars are used to provide continuity the area of loose bars shall not be less than the area of reinforcement specified. Laps shall be for less than 15 times the gross bar diameter.

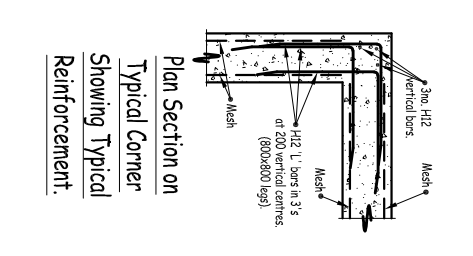
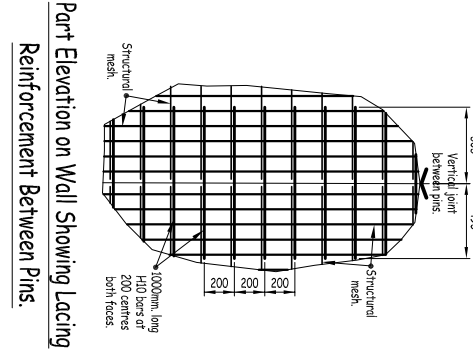
**Tension Lap Lengths for Reinforcement**  
10mm Ø = 450mm  
12mm Ø = 540mm  
16mm Ø = 720mm  
20mm Ø = 950mm



**Existing Ground Floor Plan.** (Scale 1:100 or A1)



**Important Note with Reference to the Fixing of Structural Mesh in Walls: i.e. Mesh Prefixed with the letter 'B', e.g. B131 or B785 etc.**



**Notes**

1. This drawing removes the copyright of Vincent and Rymill and is not to be copied, altered or changed without permission.
2. All dimensions are in millimetres unless otherwise noted.
3. Do not scale off this drawing.
4. Structural Steelwork Notes:
  1. Generally all structural steel shall be grade S355 and shall be in accordance with the National Specification for Structural Steelwork in all necessary aspects.
  2. Steelwork connections shall comprise not less than the M16 grade 8.8 bolts for all other members except where otherwise shown on the drawings. Where connection bolts are provided by the Engineer, the Engineer shall specify the grade and size of bolts to be used.
  3. Steel beam shall at least have the minimum bearings on masonry and as shown on the drawings. Where the minimum bearing is not shown on the drawings, the minimum bearing shall be 100mm minimum or 100mm minimum of the greater.
  4. Steel column bases shall be bolted using steel rods, not less than 75mm square. Allowance shall be made for nominal 25mm thickness of girth between the column baseplates and foundation/masonry supports. Erection shall take the form of 'wet cement slurry with a non-shrink additive and should be left fluid enough to pour.
  5. All structural steelwork shall be blast cleaned to B.S.707 Part A1 preparation grade S4.2 and except where specified as galvanised shall be painted with a suitable good quality high build epoxy zinc phosphate primer. To provide a dry film thickness of not less than 75 microns. A pre-fabrication primer may be used at the fabricator's discretion. The Contractor shall ensure that the primer used is compatible with subsequent coatings specified by others (e.g. intumescent paint).
  6. Steelwork specified as galvanised shall be blast cleaned as above and hot dip galvanised to B.S.1729 Minimum coating thickness 85 microns.
  7. All steelwork below d.p.c. level or built within the masonry wall cavity, shall be site painted with a compatible high build epoxy zinc phosphate primer, to provide a dry film thickness of not less than 125 microns, to achieve an overall primer coating of 200 microns, i.e. 125 microns epoxy zinc phosphate primer substrate or equal. Steelwork below d.p.c. shall be enclosed in an 100mm of brickwork, not weather fixed specified on the drawings.
  8. Steelwork connector to coordinate with the Main Contractor to provide adequate bracing during the Erection of Erection.
  9. Free protection to steel to Architect's details.
- Concrete:
  1. Generally all structural concrete works to be in accordance with the National Specification for Concrete in all necessary aspects.
  2. Concrete mix for foundations shall be a RC35/45 mix with a minimum Ordinary Portland cement content of 320kg/m<sup>3</sup> and a maximum water/cement ratio of 0.50.
  3. All concrete below ground level (slabs, walls and foundations), to be designed for a design sulphate class of DS-1.
  4. Under no circumstances is concrete to be poured, if expected temperature within the following 24 hour period is expected to be 5°C or less.
  5. No admixtures of any form, to be added to the concrete, without the written permission of the Structural Engineer. It is STRICTLY forbidden to add water to premixed concrete on site.
  6. Site batching of concrete to be approved by the Engineer before its use.
- Structural Masonry Notes:
  1. Refer to the Architect's drawings and the specification for masonry requirements, in respect of acoustic, thermal insulation and durability requirements. The Engineer shall be notified immediately if conflicts with the structural requirements.
  2. Blockwork below ground level to have a minimum compressive strength of 7.3N/mm<sup>2</sup> and to be set in 1:3 cement sand mortar. All blockwork to be solid, unless specified otherwise on the drawing and is to comply with B.S.5628 Table 4 requirements for Special Category Manufacture.
  3. Brickwork below ground to have a minimum compressive strength of 30N/mm<sup>2</sup> and is to comply with B.S.5628 requirements for Special Category of Manufacture.
  4. Mortar designation as follows: - Above d.p.c. Mortar Designation III Below d.p.c. Mortar Designation III
  5. Refer to the Architect's drawings for details of d.p.c., 50mm x 50mm x 200mm waterproofing and insulation.
  6. Linings:
    1. External walls: Provide proprietary linings as specified on the drawings or equivalent approved by alternative manufacturer.
    2. Internal Walls: Provide proprietary 150mm thick linings as specified on the drawings or equivalent approved by alternative manufacturer.
    3. Provide proprietary 150mm thick linings to small openings in non loadbearing blockwork walls or equivalent.
    4. All steel linings to be fully galvanized and have a minimum 150mm, bearing to each end unless noted otherwise.

Rev	Details	Date

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Basement Plans Showing Underpinning Layout

Scale at A1: 1:50 1:100  
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Rev: