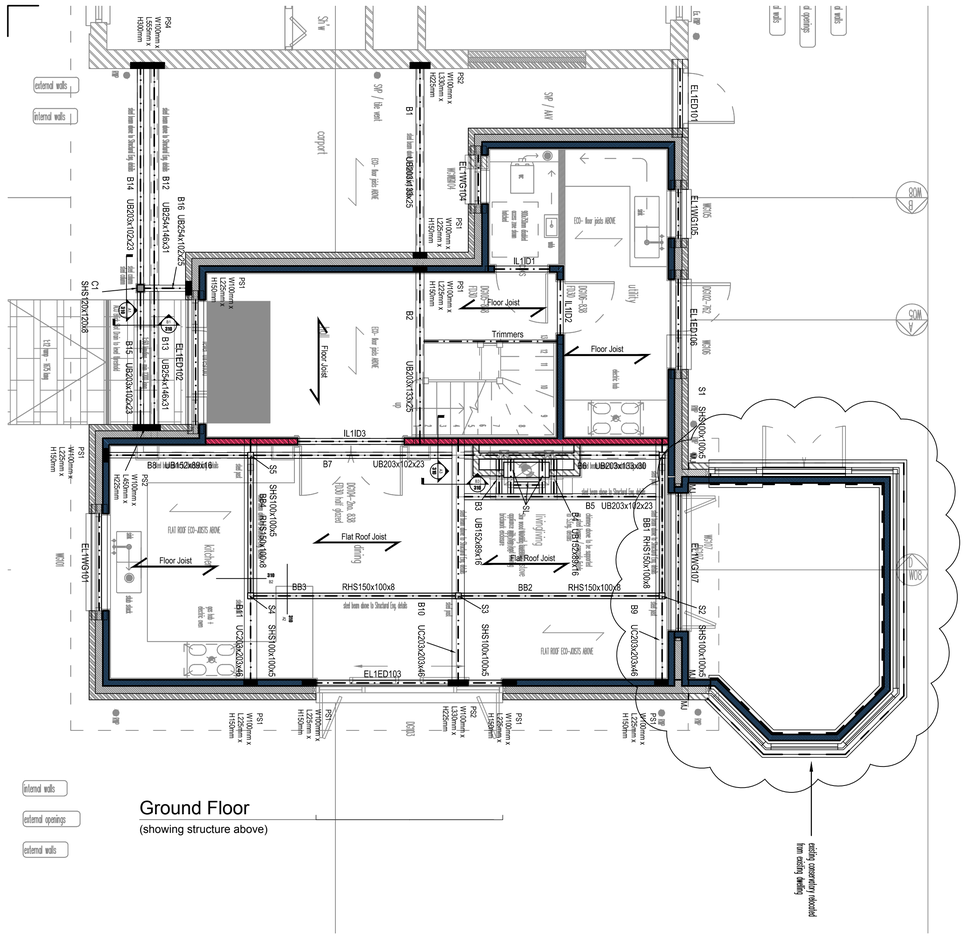



**FOUNDATION NOTES**

1. ALL FOUNDATIONS ARE TO BE 600mm WIDE UNLESS NOTED OTHERWISE.
2. THE NHBC DESCRIBES STRIP FOUNDATIONS AS THOSE WITH AN EFFECTIVE THICKNESS OF CONCRETE BETWEEN 150 AND 500mm. TRENCH FILL FOUNDATIONS ARE THEREFORE CLASSIFIED AS THOSE HAVING A THICKNESS OF CONCRETE IN EXCESS OF 500mm THE MINIMUM THICKNESS OF CONCRETE SHALL BE EQUAL TO THE SPECIFIED WIDTH OF FOUNDATION, MINUS THE WALL THICKNESS, DIVIDED BY TWO; OR 300mm WHICHEVER IS THE GREATER.
3. THE ENGINEER SHALL BE INFORMED OF THE LOCATION AND SPECIES OF ANY NEW TREES TO BE PLANTED AS THEY MAY GENERATE VARIATIONS IN FOUNDATION DEPTH REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE LANDSCAPE ARCHITECT (OR PLANTING SPECIFIER) EITHER TO ENSURE PLANTING DOES NOT AFFECT THE DESIGNED DEPTHS OF FOUNDATIONS, OR TO SPECIFY ACCORDANCE WITH NHBC GUIDELINES.
4. ALL FOUNDATIONS SHALL BE CENTRAL ABOUT THE WALL OVER UNLESS NOTED OTHERWISE. THE SETTING OUT OF THE FOUNDATIONS IN RELATION TO THE MASONRY IS AS SHOWN ON THE RELEVANT PLANS AND SECTIONS. THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS REQUIRED ON SITE TO ALLOW FOR POSSIBLE REVISION OF THE FOUNDATION SETTING OUT DETAILS.
5. THE DEPTHS OF THE FOUNDATIONS SHALL CONFORM TO WHICHEVER OF THE FOLLOWING CRITERIA GENERATES THE GREATER DEPTH:-
   - 5.1. TO THE MINIMUM DEPTHS AS SHOWN ON THE ENGINEER'S DRAWINGS, BELOW EXISTING OR PROPOSED GROUND LEVELS, WHICHEVER IS THE LOWER.
   - 5.2. TO A MINIMUM 1500mm BELOW THE EXISTING GROUND LEVELS.
   - 5.3. TO A MINIMUM 1500mm BELOW THE PROPOSED GROUND LEVELS.
   - 5.4. TO A MINIMUM 500mm BELOW ANY TREE ROOTS EXPOSED DURING EXCAVATIONS, WHERE FOUNDED IN SHRINKABLE MATERIAL.
   - 5.5. A MINIMUM OF 300mm INTO UNDISTURBED NATURAL GROUND.
6. FOUNDATIONS ARE TO BEAR A MINIMUM OF 300mm INTO A SUITABLE FORMATION TO ACHIEVE A MINIMUM BEARING CAPACITY OF 100 kN/m2, AS RECOMMENDED IN THE GROUND INVESTIGATION REPORT, PRODUCED BY GROUND INVESTIGATION SERVICES.
7. FOUNDATIONS ADJACENT TO PIPE RUNS OR MANHOLES ARE TO HAVE THEIR FORMATION LEVEL SET ABOVE THE INVERT LEVEL NO HIGHER THAN THE EQUIVALENT OF THE HORIZONTAL DISTANCE BETWEEN THE PIPE/EXCAVATION TRENCH AND THE FOUNDATION, MINUS 500mm.
8. ANY EXISTING FOUNDATIONS ENCOUNTERED ARE TO BE GRUBBED OUT LOCALLY AT NEW FOUNDATION POSITIIONS, TO 300mm BELOW THE DEPTH OF THE EXISTING FORMATION LEVEL, AND THE NEW FOUNDATION FORMATION LEVEL IS TO BE AT THIS DEPTH, WITH STEPPING TO ADJOINING FOUNDATION ACCORDINGLY (REFER TO NOTE 6).
9. CONSTRUCTION JOINTS AND STEPS IN FOUNDATIONS ARE TO BE IN ACCORDANCE WITH NHBC STANDARDS CHAPTER 4.4
10. ALL FOUNDATIONS SHALL HAVE A COMMON TOP LEVEL UNLESS NOTED OTHERWISE.
11. ALL EXCAVATIONS SHALL BE KEPT FREE FROM WATER, LOOSE MATERIAL AND RUBBISH ETC. THE FORMATION LEVEL SHALL NOT BE EXPOSED UNTIL THE DAY OF THE CONCRETE POUR.
12. CONCRETE IS SPECIFIED IN ACCORDANCE WITH BS8500-1 AND BRE SPECIAL DIGEST No1 ALL CONCRETE TO CONFORM TO BS EN 206-1 AND BS 8500-2
13. CONCRETE STRENGTH/DURABLITIY REQUIREMENTS ARE AS FOLLOWS:-
    - 13.1 CONCRETE GRADE C25 (COMPRESSIVE STRENGTH 25 N/mm2)
    - 13.2 CONCRETE SAMPLING AND TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH BS 1881.
    - 13.3 DESIGN SULPHATE CLASS BS-1 & ACEC CLASS AC-1.
14. THE LAYOUT OF ANY EXISTING DRAINPIPES OR SERVICES IS TO BE CONFIRMED UPON EXCAVATION, AND SPLIT SLEEVE DUCTING IS TO BE USED WHERE THOSE TO REMAIN, AND ANY NEW DRAINPIPES OR SERVICES, PASS THROUGH NEW FOUNDATION CONCRETE. THE DUCTING SHOULD BE SUITABLY SIZED TO PROVIDE A MINIMUM 50mm CLEAR VOID AROUND THE PIPE OR SERVICE. THE VOID MAY BE USING EXPANDED POLYSTYRENE OR SIMILAR MATERIAL.
15. WHERE FOUNDATIONS REQUIRE COMPRESSIBLE MATERIAL (THOSE IN EXCESS OF 1500mm DEEP IN SHRINKABLE MATERIAL), THIS SHALL BE PROVIDED TO THE INNER FACES OF EXTERNAL WALL FOUNDATIONS TO WITHIN 500mm OF THE BASE. COMPRESSIBLE MATERIAL IS NOT REQUIRED TO INTERNAL WALL FOUNDATIONS. THE COMPRESSIBLE MATERIAL SHALL BE CLAYMASTER BY CORDEK LTD. THICKNESS OF COMPRESSIBLE AND SLIP MATERIALS SHALL BE AS SHOWN ON THE RELEVANT SECTIONS ON THE ENGINEERS DRAWINGS. ALL PRODUCTS SHALL BE INSTALLED WITH ADEQUATE TEMPORARY SUPPORT DURING POURING OF CONCRETE TO ENSURE RESTRAINT AGAINST MOVEMENT.
16. ALL STRIP / TRENCH-FILL FOUNDATIONS SHOULD BE REINFORCED THROUGHOUT. IT SHOULD CONSIST OF B785 MESH TOP & BOTTOM, WITH 75mm CONCRETE COVER ALL ROUND. THE MAIN BARS SHOULD RUN PARALLEL TO THE LINE OF THE FOUNDATION. LAPS IN MESH TO BE 500mm MINIMUM.
17. MASONRY TO FOUNDATIONS TO HAVE A COMPRESSIVE STRENGTH AT LEAST EQUAL TO THAT USED ABOVE DPC, OR AS NOTED ON THE FOUNDATION DETAILS, WHICHEVER IS THE GREATER. IN ALL CASES BLOCKWORK BELOW DPC SHOULD HAVE A MINIMUM DENSITY OF 1500kg/m3 OR A MINIMUM COMPRESSIVE STRENGTH OF 7N/mm2, AND BE LAID IN CLASS (i) OR (ii) MORTAR.
18. ALL BLOCKWORK BELOW DPC LEVEL SHALL COMPLY WITH NHBC CHAPTER 5.1 BLOCKWORK STRENGTHS ARE TO BE IN ACCORDANCE WITH THE ENGINEER AND ARCHITECT SKETCHES AND DRAWINGS.
21. ALL SUB-FLOOR VENTILATION (BOTH INTERNAL AND EXTERNAL WALLS) SHALL BE IN ACCORDANCE WITH NHBC GUIDELINES/BUILDING REGULATION REQUIREMENTS, AND AS SPECIFIED BY THE ARCHITECT UNLESS NOTED OTHERWISE.
22. THE BUILDING INSPECTOR AND ENGINEER ARE TO BE AFFORDED THE OPPORTUNITY OF INSPECTING THE FORMATION LEVEL OF ANY FOUNDATIONS PRIOR TO THE PLACING OF THE CONCRETE. ALLOW A MINIMUM 24 HOURS NOTICE FOR INSPECTION.

**SUSPENDED GROUND FLOOR SLABS:**

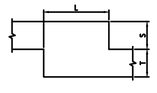
1. SUSPENDED GROUND FLOOR SLABS TO BE BEAM AND BLOCK CONSTRUCTION, OR WIDESPAN HOLLOWCORE PC UNITS, DESIGNED AND SUPPLIED BY AN APPROVED SPECIALIST. THUS SPAN DIRECTION NOTED AS: ⟷
2. FOR SPAN LENGTHS, PLUS POSITIONS AND TYPES OF PARTITION WALLS SUPPORTED BY THE FLOOR, REFER TO ARCHITECTS DRAWINGS. FOR SUB FLOOR VOID VENTILATION DETAILS REFER TO ARCHITECTS DRAWINGS.
3. FLOOR CONSTRUCTION TO BE DESIGNED FOR THE FOLLOWING LOADS:
   DEAD (EXCLUDING SELF WEIGHT OF FLOOR UNITS):
   CHIPBOARD AND INSULATION = 0.15KN/M2
   75MM SAND:CEMENT SCREED = 1.80KN/M2
   100M LIGHTWEIGHT BLOCKWORK PARTITIONS = 3.00KN/M RUN
   75MM LIGHTWEIGHT STUDWORK PARTITIONS = 1.00KN/M RUN
   IMPOSED LOAD (TO BS6399): 1.50 KN/M2

**UPPER FLOORS (FIRST & SECOND FLOORS):**

1. ALL UPPER FLOORS TO BE TIMBER (POSSIBLY POSI JOISTS), DESIGNED AND SUPPLIED BY AN APPROVED SPECIALIST.
2. FLOOR SPANS ARE INDICATED THUS: ⟷ FOR SPAN LENGTHS, PLUS POSITIONS AND TYPES OF PARTITION WALLS SUPPORTED BY THE FLOOR, REFER TO ARCHITECTS DRAWINGS.
3. FIRST FLOOR CONSTRUCTION TO BE DESIGNED FOR THE FOLLOWING LOADS:
   AN IMPOSED LOAD OF 1.5 kN/m2 (TO BS6399).
   STUD PARTITIONS 1.0 kN/m2.

**STEELWORK:**

1. STEEL CONTRACTOR TO CHECK THE RELEVANT DIMENSIONS PRIOR TO FABRICATION , ANY DISCREPANCIES TO BE IMMEDIATELY REPORTED TO THE ENGINEER.
2. ALL STEELWORK TO BE GRADE S275 (FOR PLATES AND ROLLED SECTIONS) TO BS EN10025, UNLESS NOTED OTHERWISE.
3. STEELWORK FABRICATION AND ERECTION ARE TO BE CARRIED OUT IN ACCORDANCE WITH B.S. 5950:PART-2:2000
4. STEELWORK TO HAVE FIRE PROTECTION AS PER ARCHITECT'S DETAIL AND CLIENT'S REQUIREMENT.
5. PRIOR TO FABRICATION THE STEELWORK CONTRACTOR SHALL SUBMIT STEELWORK FABRICATION DRAWINGS TO CISTEC FOR COMMENT.
6. ALL STEEL TO STEEL CONNECTIONS ARE TO BE CARRIED OUT AS PER DETAILS SHOWN,
7. ALL BEAMS CONNECTIONS UNLESS DETAILED SPECIFICALLY ON THE DRAWINGS ARE TO BE DESIGNED TO BS 5950:PART 1:2000 AND ARE TO HAVE MINIMUM 4 BOLT CONNECTIONS AND FULL HEIGHT END-PLATE (IF POSSIBLE).
8. CONNECTIONS GENERALLY: WELDED TO ONE MEMBER AND BOLTED TO ANOTHER (U.N.O.).
9. ALL BOLTS TO BE GRADE 8.8 TO BS4190. M20 MINIMUM SIZE UNO. ALL NUTS TO HAVE FLAT WASHER, OR TAPERED WHERE NECESSARY, PLUS SINGLE COIL SPRING WASHER OR LOCK NUT.
10. ALL WELDING TO BS5135, 6MM FILLET WELDS MIN, AL AROUND, UN.




STEPPED FOUNDATION DETAIL
SCALE N.T.S.

| Health and Safety Notes - General 1 of 2 | |
|---|---|
| These Health & Safety notes identify hazards that were impractical or uneconomical to mitigate at the design stage. The list is not exhaustive and should not be relied upon. The contractor is to carry out risk assessments and prepare method statements in line with current Healrth & Safety legislation. | |
| Hazard | Suggested Solution/Precaution/ Sequence |
| Propping off unsuitable construction | Ensure all props ultimately have a sound foundation. |
| Propping off finishes rather than structural members | Structural members to be exposed prior to installation of props. |
| Buckling of long props | Props should be adequately braced. |
| Lateral instability of the building whilst props/temporary works are in place | No more than 30% of any floor should be supported on props/temporary works at one time. |
| Inadequate information available prior to commencement of works | stucture around area of work should be exposed prior to work commencing, and the Engineer advised of any informatio discrepancies or poor quality structures. |
| Handling of materials | Adequate means for moving and positioning of elements to be available. |
| Demolition (though all demolition works are outside scope of work by CISTEC) | Carry out in accordance with prepared demolition plan and method statement. |
| Deliveries | Restrict access and designate safe area for deliveries. |
| Support and stability of existing structure during demolition and installation of new framing | Contractor to provided all necessary adequate temporary propping and support systems prior to demolition and during constuction. Ensure all props ulitmately have a sound foundation. Locate temporary propping to avoid obstructing new works or through routs. Props should not be removed unil new structural framing is fully installed, with adequate curing time as necessary. Propos to be adeuately braced. |
| Any Scaffolding | Scaffolds to be erected and used in accordance with BS5973. Scaffolds/propping must be inspected and approved before use and at least once a week to ensure they remain fit for use. |
| Clear away rubbish from height/falling debris/dust | All waste materials from height to be deposited via chutes or baskets to ground level skips. Provide building enclosure with adequate tarpaulin/dust sheets. |
| Personnel working at height | Works to be properly supervised and personnel provided with safe working platforms. |
| Delivery of steelwork, precast units or roof trusses | Designate safe area for deliveries. Elements to be either delivered and off-loaded by mechanical means/crane to a place of storage, or immediately placed in position (all prep. works to be finalised before placement). |

| Health and Safety Notes - General 2 of 2 | |
|---|---|
| These Health & Safety notes identify hazards that were impractical or uneconomical to mitigate at the design stage. The list is not exhaustive and should not be relied upon. The contractor is to carry out risk assessments and prepare method statements in line with current Healrth & Safety legislation. | |
| Hazard | Suggested Solution/Precaution/ Sequence |
| Erection of steelwork, pc units or roof trusses | Carry out with extreme care by mechanical means. All elements to be provided with lifting eyes/holes, to the Designer's requirements. |
| Protection of workforce | Personal protective equipment to be worn at all times. No member of workforce to be working under or within the area of crane erection/crane swing path. |
| Damage to steelwork, p.c. units or roof trusses | Any damage to steelwork, pc units or roof trusses during transportation or erection are to be reported to the appropriate specialist manufacturer and the Engineer. |
| Block/brick handling and construction | Handling and construction to be carried out in accordance with current health and safety legislation and British Standards. The Contractor is also to inform workforce regarding block weights and handling requirements. |
| Fixing of steelwork | Site welding and/or site cutting of holes in members is not be carried our without the Engineers permission. The Contractor also to ensure that the correct bolt specification is used. |
| Excavations | Adequate shoring to excavations is to be provided. |
| Fumes form chemical/paint application | Adequate ventilation and protection to be provided with all site applications. New steelwork members to be pre-coated prior to delivery. |
| Asbestos (or unidentified meterial suspected of being hazardous) | Following the discovery of suspect material, the Conctractor is to stop work immediately and report to the Engineer, and await instructions to proceed. |

| Health and Safety Notes - Foundations | |
|---|---|
| These Health & Safety notes identify hazards that were impractical or uneconomical to mitigate at the design stage. The list is not exhaustive and should not be relied upon. The contractor is to carry out risk assessments and prepare method statements in line with current Healrth & Safety legislation. | |
| Hazard | Suggested Solution/Precaution/ Sequence |
| Excavations | Adequate shoring to excavations is to be provided. |
| Undermining of foundations to existing structures | Avoid excavation of trenches parallel to existing foundations unless specifically instructed by the Engineer. |
| Contaminated ground/Weil's Desease | Contractor to provide adequate protective clothing and equipment, and ensure proper working practices are employed to deal with any contaminated material encountered during works. |
| Existing services/plant | Contractor to investigate and adequately mark the location and status of any existing overhead/underground services/plant on or in close proximity to the site. |
| Unattended excavations | Contractor to ensure unattended excavations are adequately protected using warning signs and barriers accordingly. |
| Unstable ground | Suitable support should be provided for any large plant, eg. compacting plant, etc. |

**STRUCTURAL NOTES**

Please refer to all other design drawings by others.

Blockwork strengths to be as follows: -

From top of foundation to u/s of 1st floor - 7.3N/mm²
From 1st floor and above - 3.5 or 5N/mm²

**STRUCTURAL KEY**

- Span direction of infill members.
- MJ — Movement joint in brickwork only (movement joints in blockwork by supplier).
- PS — Padstone
- IL — Internal box lintels.
- EL — External cavity lintels.
- C3 — Ceiling Joint 63x200 Deep C24@ 400mm c/c
- CR — Cat Rafters 47x150 Deep C16@ 600mm c/c
- * — Starter Wall System
- Engineering brickwork
- 7.3N/mm² strength blockwork.
- 3.5N/mm² or 5.0N/mm² strength blockwork.

All lintels to be IG lintels of similar approved. Lintel sizes now confirmed.

| Rev | Amendment | By | Date |
|---|---|---|---|
| P1 | First issue. | SWF | 05.09.12 |
| P2 | Foundation proposals amended to include conservatory in accordance with architects revised drawings. | WM | 20.11.12 |




NOTE
All foundation to be 600mm min. unless noted otherwise.

Foundations

## Steel Beams Schedule

| Number | Style | Length | Notes |
|---|---|---|---|
| B1 | UB203x133x25 | 3200mm | TBC |
| B2 | UB203x133x25 | 2950mm | TBC |
| B3 | UB152x89x16 | 600mm | TBC |
| B4 | UB152x89x16 | 600mm | TBC |
| B5 | UB203x102x23 | 3150mm | TBC |
| B6 | UB203x133x30 | 3200mm | TBC |
| B7 | UB203x102x23 | 3250mm | TBC |
| B8 | UB152x89x16 | 2400mm | TBC |
| B9 | UC203x203x46 | 4050mm | TBC |
| B10 | UC203x203x46 | 4050mm | TBC |
| B11 | UC203x203x46 | 4050mm | TBC |
| B12 | UB254x146x31 | 3700mm | TBC |
| B13 | UB254x146x31 | 2250mm | TBC |
| B14 | UB203x102x23 | 3650mm | TBC |
| B15 | UB203x102x23 | 2200mm | TBC |
| B16 | UB254x102x25 | 800mm | TBC |

## External Door Lintel Schedule

| Number | Structural Opening | Length | Member Type | Notes |
|---|---|---|---|---|
| EL1ED101 | 972mm | 1350mm | IG L1/S 110 or similar approved. | TBC |
| EL1ED102 | 2035mm | 2400mm | IG L1/S 110 or similar approved. | TBC |
| EL1ED103 | 3048mm | 3450mm | RHS200x100x10 | 300x12mm thk MS plate to bottom flange - full length |
| EL1ED106 | 1473mm | 1800mm | IG L1/S 110 or similar approved. | TBC |

## External Window Lintel Schedule

| Number | Structural Opening | Length | Member Type |
|---|---|---|---|
| EL1WG101 | 1585mm | 1950mm | IG L1/S 100 or similar approved. |
| EL1WG104 | 798mm | 1200mm | IG L1/S 100 or similar approved. |
| EL1WG105 | 798mm | 1200mm | IG L1/S 100 or similar approved. |
| EL1WG107 | 2260mm | 2700mm | IG L1/S 100 or similar approved. |

## Internal Lintel Schedule

| Number | Structural Opening | Length | Member Type |
|---|---|---|---|
| IL1ID1 | 902mm | 1350mm | IG Box 100 or similar approved. |
| IL1ID2 | 902mm | 1200mm | IG Box 100 or similar approved. |
| IL1ID3 | 1740mm | 2100mm | IG HD Box 100 or similar approved. |

## Steel Column Schedule

| Number | Style | Length | Notes |
|---|---|---|---|
| C1 | SHS120x120x8 | (t.b.c.) | with MS Baseplate & 4xM16 holding down bolts |

## Balcony Steelwork - beams

| Number | Style | Length | Notes |
|---|---|---|---|
| BB1 | RHS150x100x8 | 2194.3mm | All external steel to be Grade S275 JO |
| BB2 | RHS150x100x8 | 3227.8mm | All external steel to be Grade S275 JO |
| BB3 | RHS150x100x8 | 3287.9mm | All external steel to be Grade S275 JO |
| BB4 | RHS150x100x8 | 2193.7mm | All external steel to be Grade S275 JO |

## Balcony Steelwork - stub columns

| Number | Style | Length | Notes |
|---|---|---|---|
| S1 | SHS100x100x5 | 500mm | All external steel to be Grade S275 JO |
| S2 | SHS100x100x5 | 500mm | All external steel to be Grade S275 JO |
| S3 | SHS100x100x5 | 500mm | All external steel to be Grade S275 JO |
| S4 | SHS100x100x5 | 500mm | All external steel to be Grade S275 JO |
| S5 | SHS100x100x5 | 500mm | All external steel to be Grade S275 JO |

Schedules




TYPICAL EXTERNAL WALL FOUNDATION DETAIL
SCALE 1:20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Client

Mr & Mrs Baker-Rawle

Drawing
STRUCTURAL ENGINEERING
Proposed Structures
Foundations & Ground Floor

Project
9 Thurston Close, Abingdon

Scale 1:50 @ A1 | Date 05.09.12 | Approved

Drawing no. 1181/301 P2

STATUS: PRELIMINARY


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