

EXISTING ELEVATION & FLOOR PLANS



FRONT ELEVATION



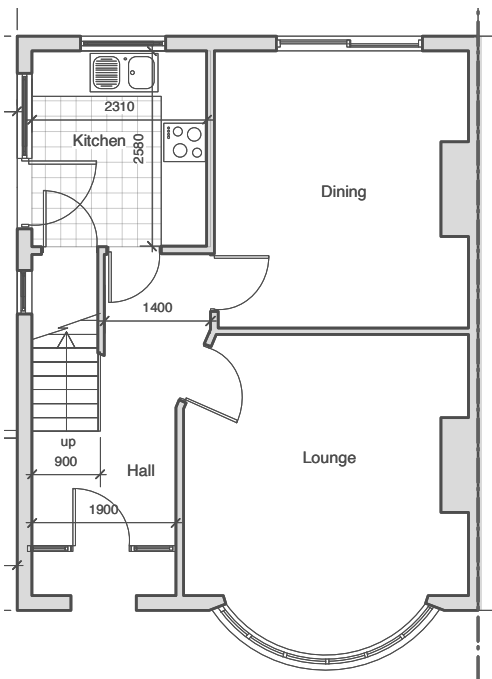
REAR ELEVATION



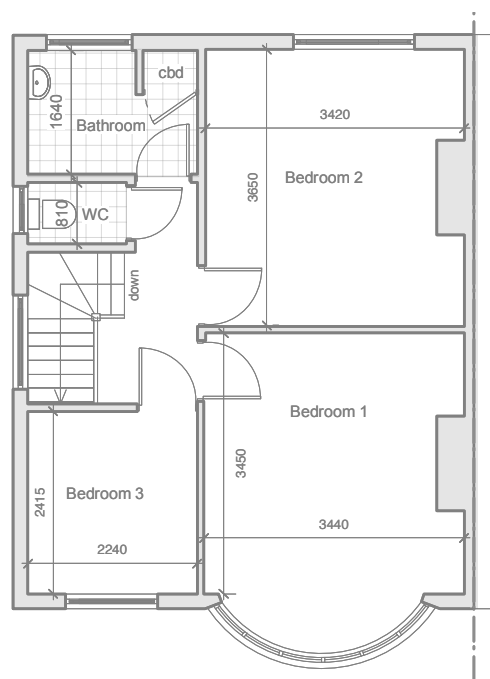
SIDE ELEVATION



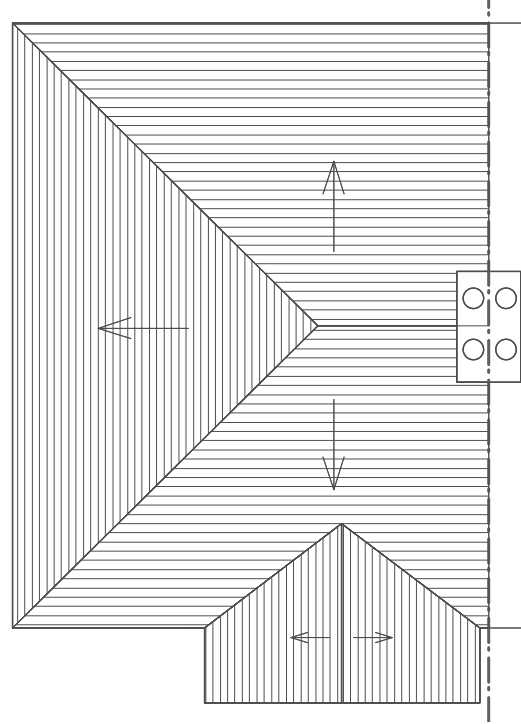
SIDE ELEVATION



GROUND FLOOR PLAN



FIRST FLOOR PLAN



ROOF PLAN

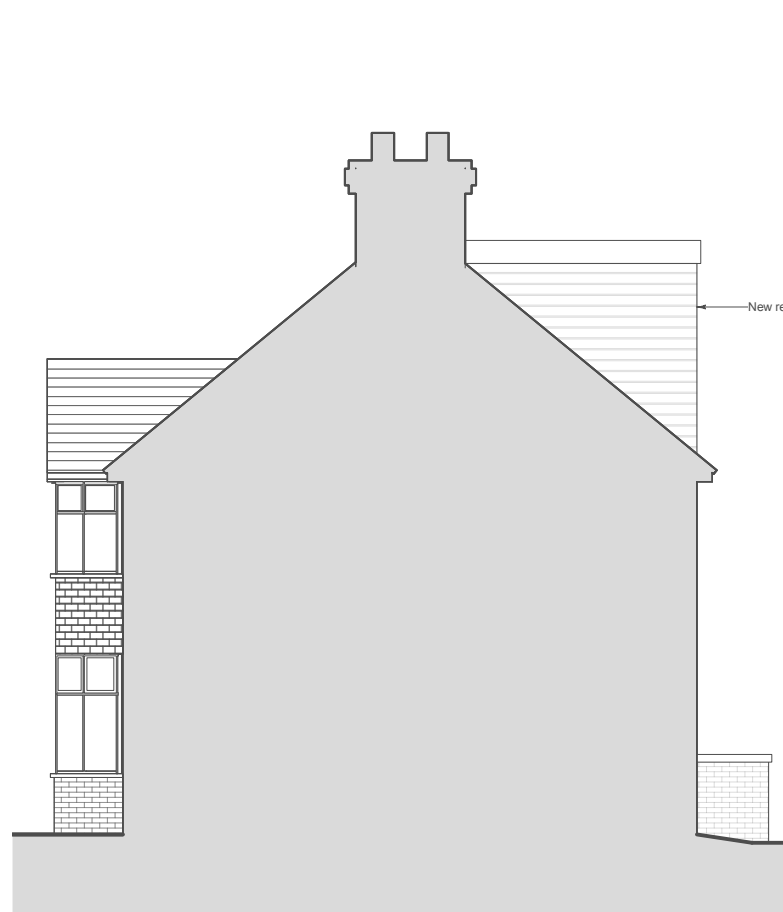
PROPOSED ELEVATIONS & FLOOR PLANS



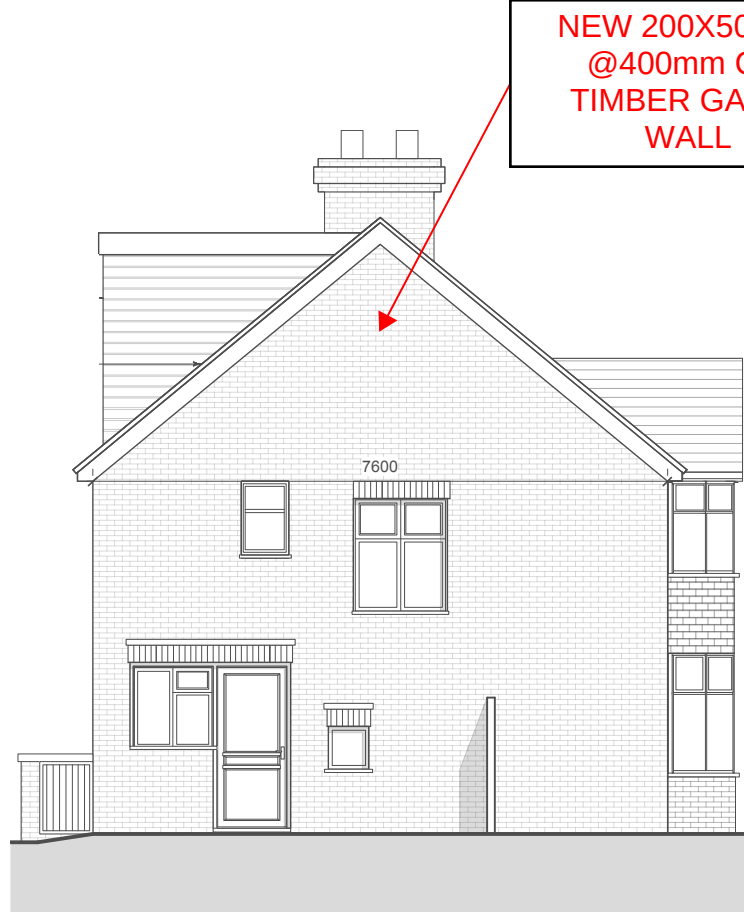
FRONT ELEVATION



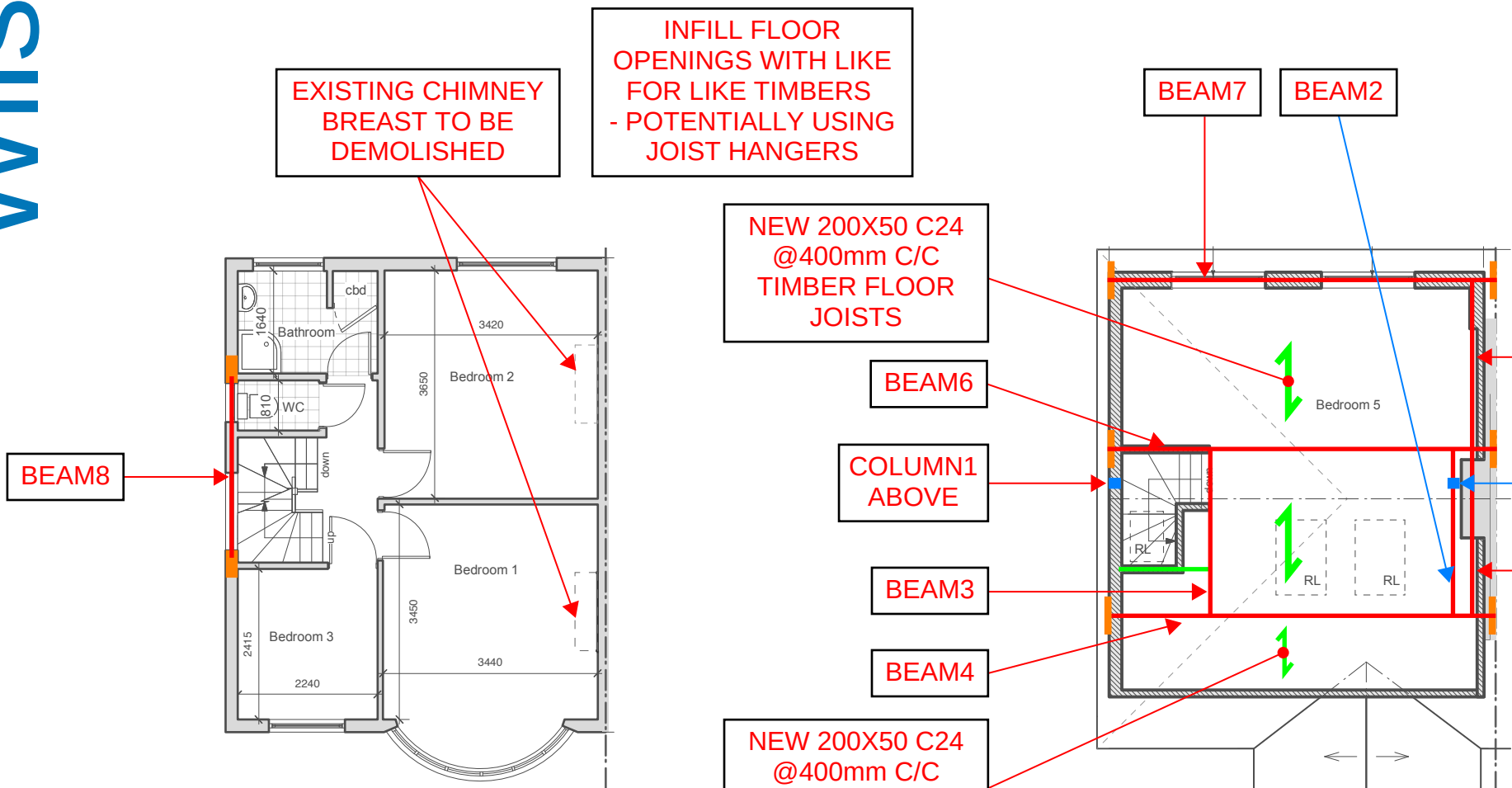
REAR ELEVATION



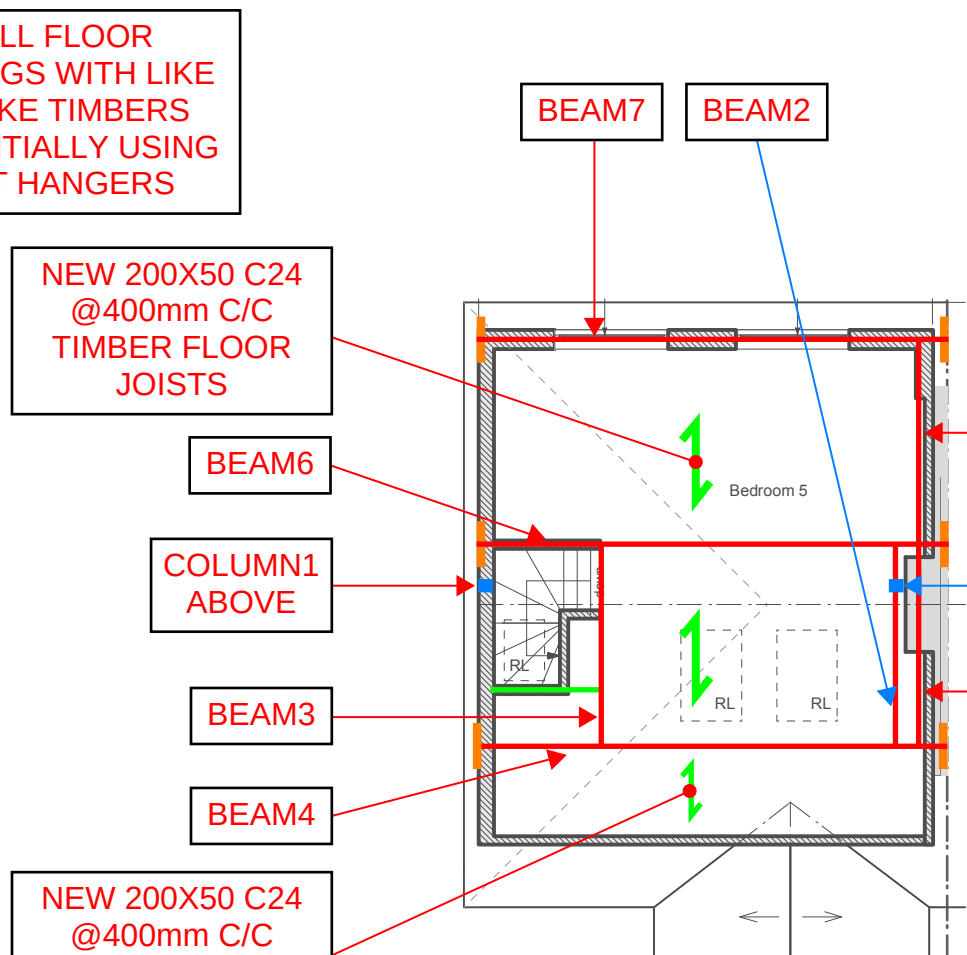
SIDE ELEVATION



SIDE ELEVATION

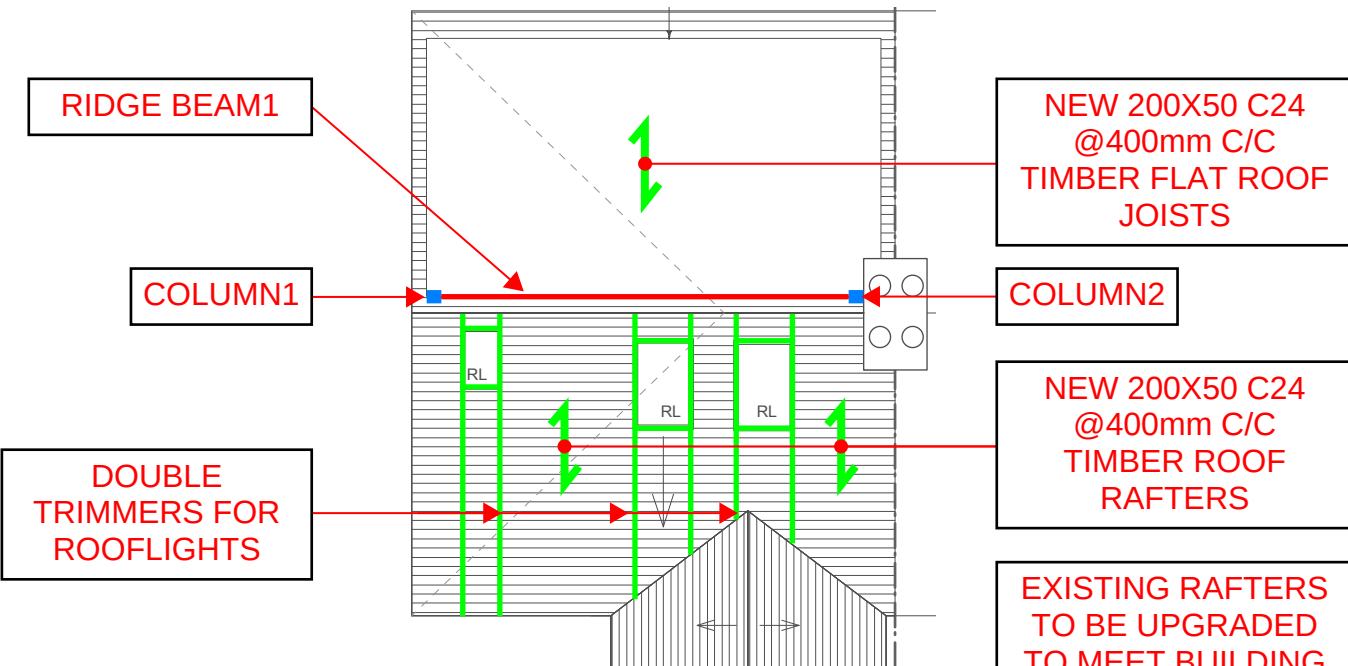


FIRST FLOOR PLAN



LOFT FLOOR PLAN

POTENTIALLY ADD COURSES OF BRICKWORK ON GABLE WALL IF NECESSARY - TO BE CONFIRMED WITH WILSON ENGINEERING



ROOF PLAN

BEAMS SCHEDULE:

STEEL RIDGE BEAM1: 152X152 UC 30kg/m (MAX SPAN 5.8M - FITTED AT RIDGE LEVEL)

STEEL BEAM2: 152X152 UC 23kg/m (MAX SPAN 2.8M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM3: 152X152 UC 23kg/m (MAX SPAN 2.8M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM4: 203X203 UC 60kg/m (MAX SPAN 6.3M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM5: 203X203 UC 46kg/m + 10mm STEEL TOP PLATE WELDED (MAX SPAN 2.8M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM6: 203X203 UC 46kg/m (MAX SPAN 6.3M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM7: 203X203 UC 60kg/m (MAX SPAN 6.3M - FITTED AT LOFT FLOOR AREA)

STEEL BEAM8: 152X152 UC 23kg/m + 10mm STEEL BOTTOM PLATE WELDED (MAX SPAN 5.8M - FITTED ABOVE EXISTING OPENINGS)

STEEL BEAM9: 203X203 UC 46kg/m + 10mm STEEL TOP PLATE WELDED (MAX SPAN 2.8M - FITTED AT LOFT FLOOR AREA)

STEEL COLUMNS SCHEDULE:

COLUMN1: 100X100X10 SHS + 200X150X20mm THK. STEEL BASEPLATE

COLUMN2: 100X100X10 SHS + 200X150X20mm THK. STEEL BASEPLATE

STEEL SPREADER PLATES SCHEDULE:

BEAM4 SPREADER PLATES: 600X100X20mm THK. (MIN 100mm END BEARINGS)

BEAM6 SPREADER PLATES: 600X100X20mm THK. (MIN 100mm END BEARINGS)

BEAM7 SPREADER PLATES: 600X100X20mm THK. (MIN 100mm END BEARINGS)

BEAM8 SPREADER PLATES: 440X290X20mm THK. (MIN 150mm END BEARINGS)

The Institution of
StructuralEngineers



GENERAL NOTES -

MUST BE READ - MUST BE READ - MUST BE READ - MUST BE READ - MUST BE READ

1. Design is in accordance with the Architect's or Client's provided drawings and British Standards. The existing structure/property must be surveyed/inspected by the building contractor/fabricator prior project start date and prior to fabrication order of any structural members. This will confirm our proposals and potentially identify any variations that may be required before work commences and arises during the build. Potentially saving the client delays and cost. The building contractor is responsible for the ultimate fit of the structure on site and its temporary stability during construction. End bearing calculations are based on there being no cracked, loose or damaged masonry at the support locations and any such defects should be reported to the engineer prior to fabrication of any structural members. Any work carried out on site prior to Full Building Regulation Approval is at the Contractor's & Client's own risk. Any changes of design without the Architect and Structural engineer approval is at the Contractor's & Client's own risk.

2. All beams/lintels to have a minimum load bearing of 150mm (when parallel to supporting wall) or greater if stated otherwise and consider minimum bearing of 215 long 2 Course Eng. Brick work Padstone if not stated otherwise. Load bearings to be checked by building control.

3. Provide minimum 30 min fire protection (fireboard or coating). If steel is to be installed in damp environment, steel fabricator is to advise on corrosion protection based on guides to good practice in corrosion control. To be checked by building control.

4. Note that any assumptions made in this paper are only to contribute to easier calculations of the loads on the structure and are not in any way to compromise the safety of the structural design.

5. All timbers to be grade C24 unless stated otherwise.

6. Consideration should be made and discussed with building control regarding if concerns are raised when trees are near foundations.

7. Consider foundation depth on shrinkable clays and to avoid future problems, increase the depth above standard requirements if there is a risk.

8. Contractor must expose existing foundation and seek building inspector advice if local mass concrete underpinning is required.

9. Structural calculations are for Building Notice submission only, not for ordering materials due to approx. on site dimensions. Principal Architect or Principal Contractor is responsible for taking measurements on site. Wilson Architectural Engineering is not responsible for site supervision.

10. Our proposed designs can be altered depending on existing site conditions. We welcome other proposed designs by others if seen as more cost effective to client.

11. Building control to confirm proposed designs before building work starts. This will reduce delays and potential additional cost to client.

12. If the building contractor has any concerns or questions with our proposals or wishes to change or deviate from what we have proposed, the building contractor must inform Wilson Engineering prior to any ordering or installation of items, as time spent rectifying the building contractor's work will be chargeable to the building contractor. We strongly advise the building contractor to speak with Wilson Engineering at the point where he or she has any concerns or questions.

13. IF IN DOUBT - PLEASE CONTACT WILSON ARCHITECTURAL ENGINEERING

Date: 01/10/25 Rev: 02

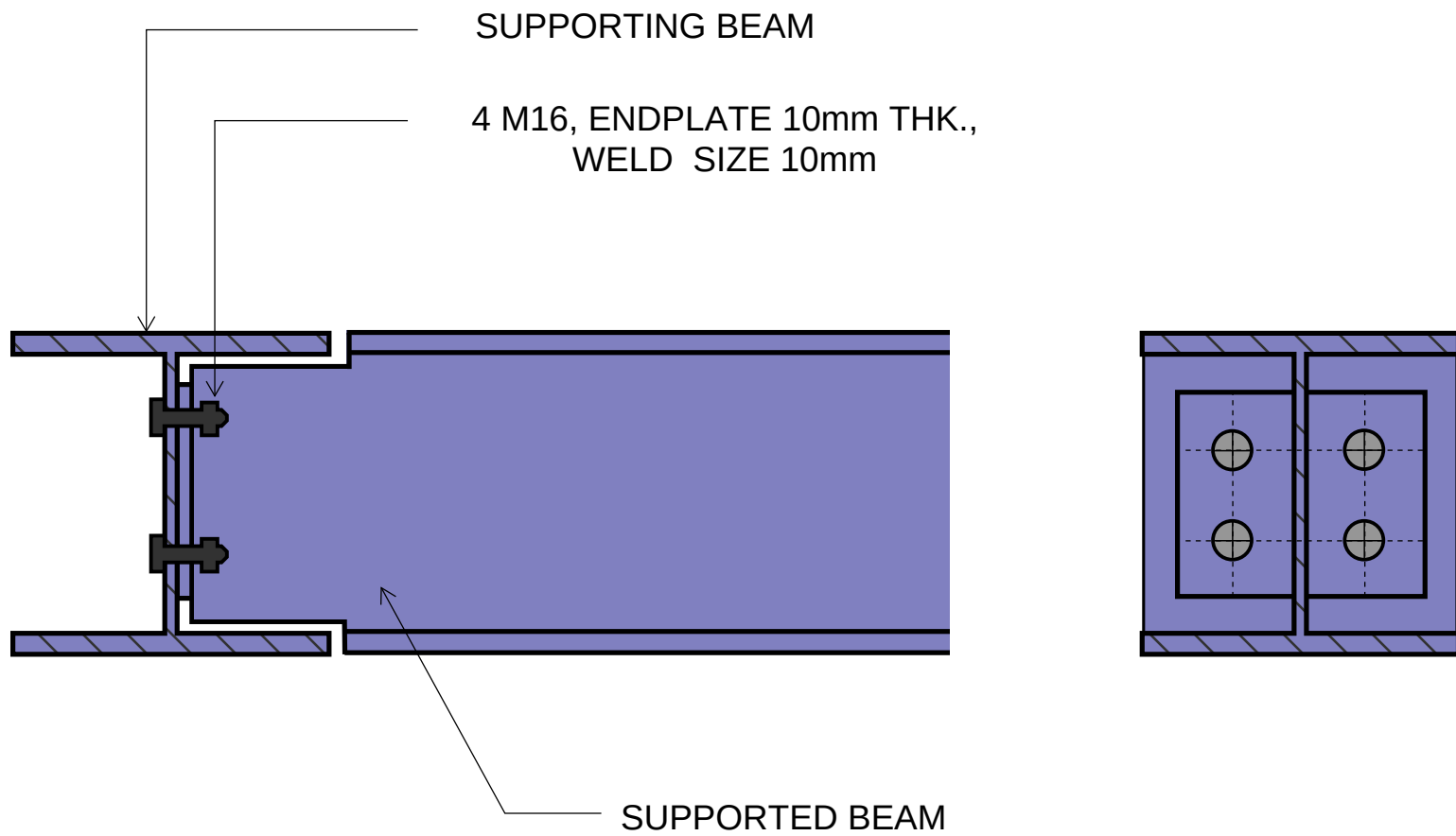
Site Address:
15 LITTLECOTE DRIVE, READING
RG1 6JD

Project Description:
CHIMNEY BREAST REMOVAL
&
HIP TO GABLE LOFT CONVERSION

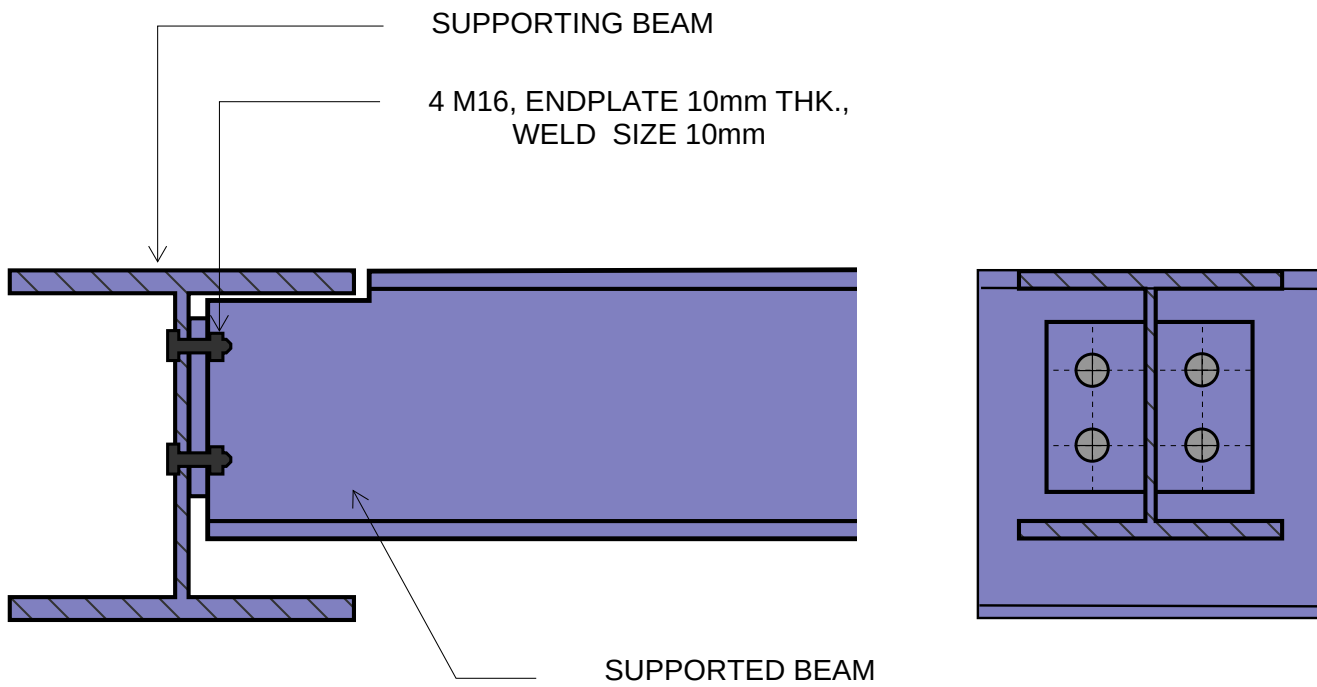


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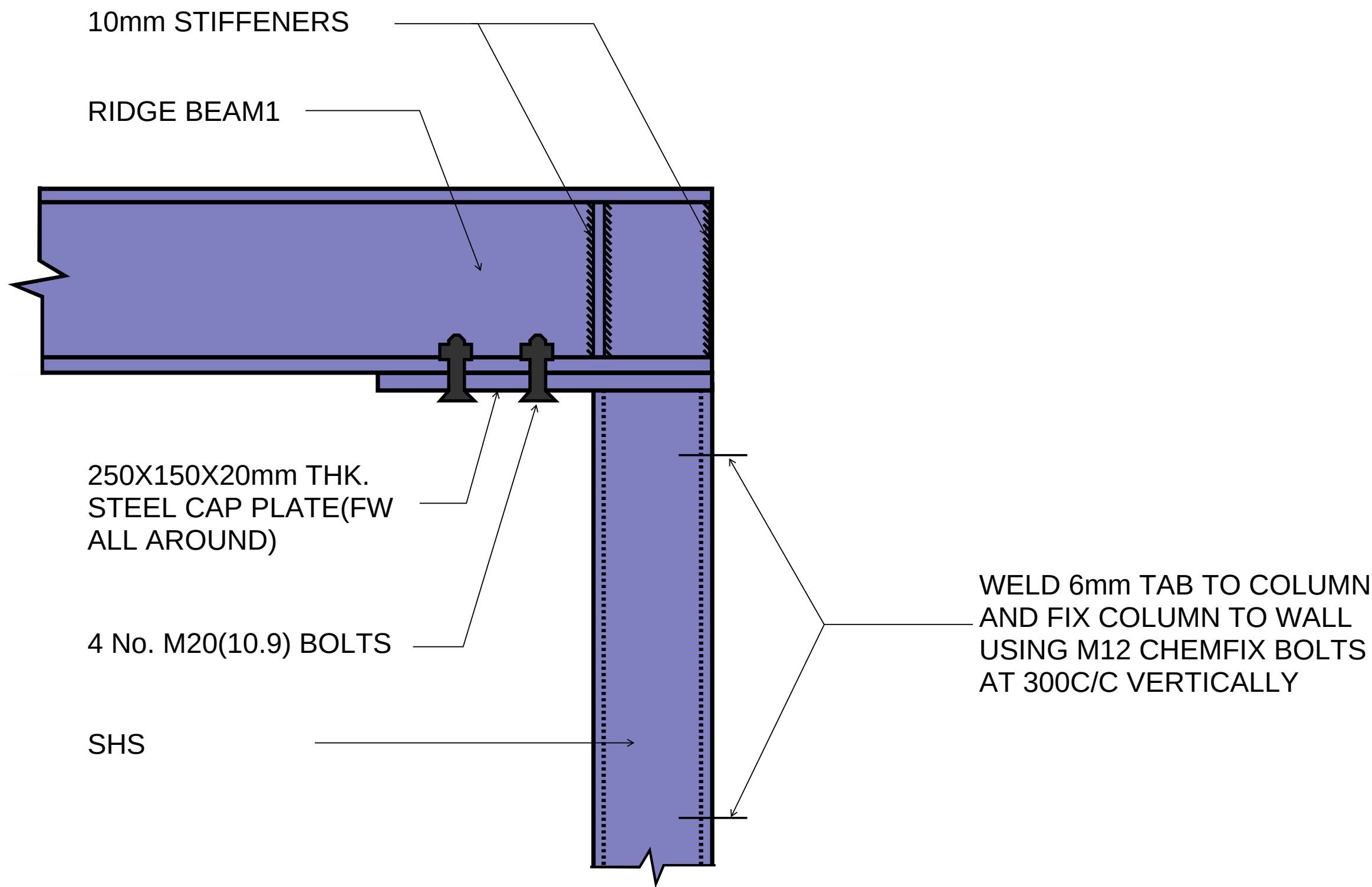
BEAM-TO-BEAM CONNECTION DETAIL



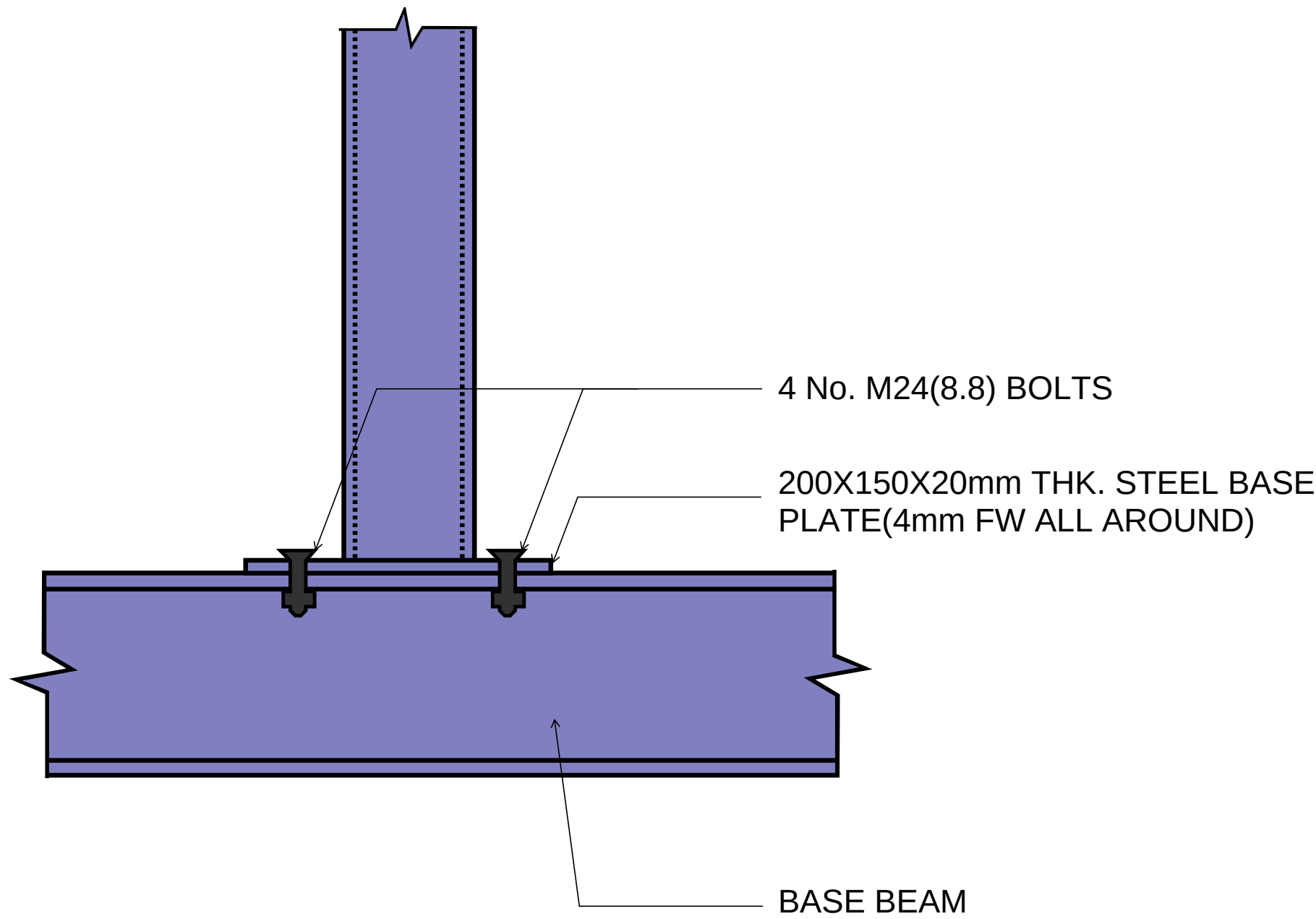
152UC BEAM - TO - 203UC BEAM CONNECTION DETAIL



RIDGE BEAM1 TO COLUMN1, 2 CONNECTION DETAIL



COLUMN2 TO BASE BEAM CONNECTION DETAIL

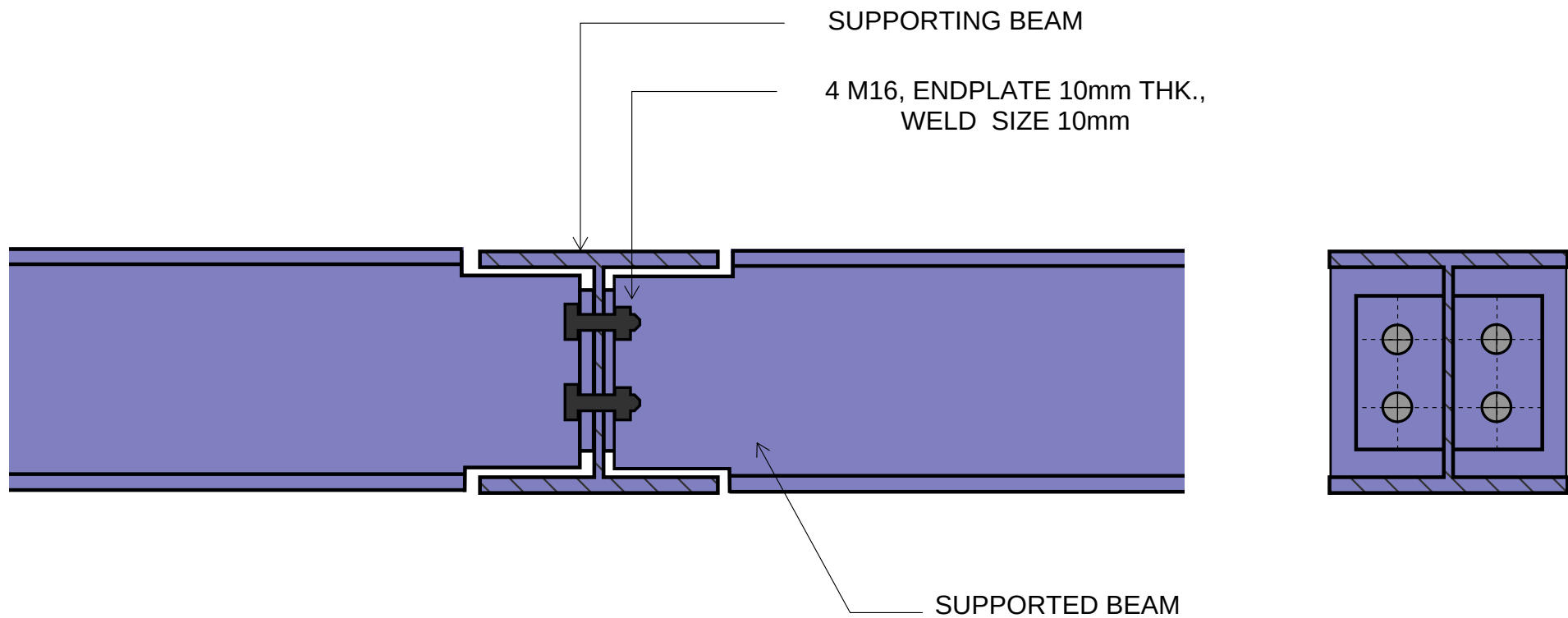


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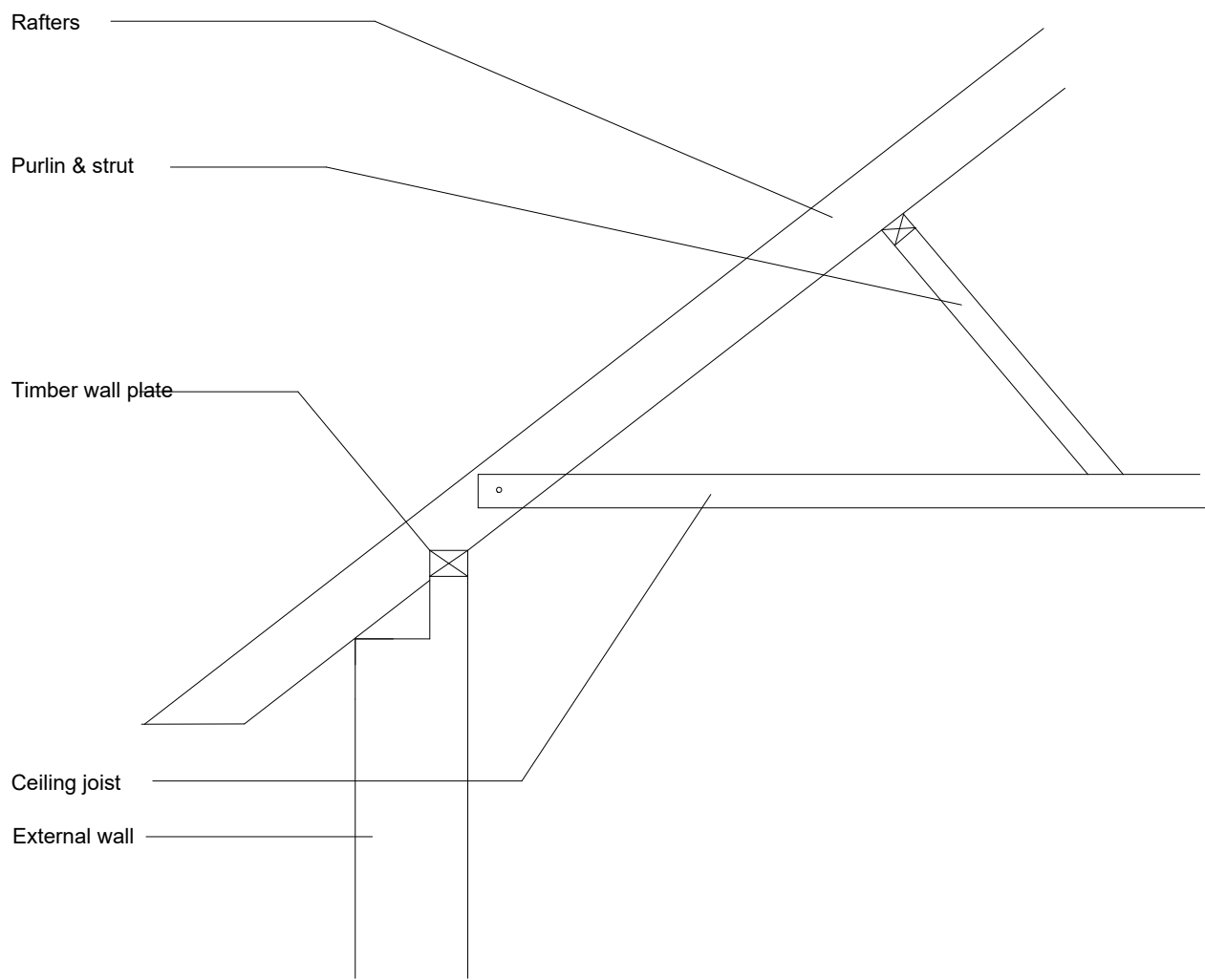
Date: 01/10/25	Rev: 02
Site Address: 15 LITTLECOTE DRIVE, READING RG1 6JD	
Project Description: CHIMNEY BREAST REMOVAL & HIP TO GABLE LOFT CONVERSION	

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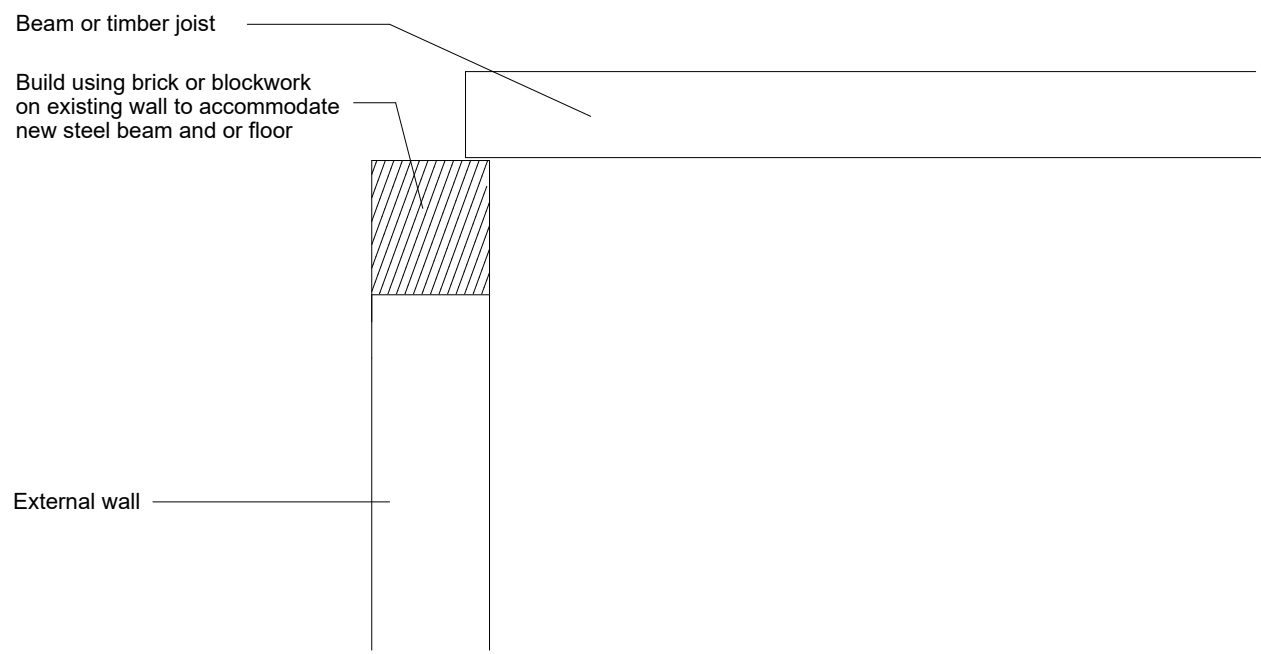
TWO SIDED BEAM CONNECTION DETAIL



Typical - Clipped Ceiling Detail



Build up on existing cut purlin wall



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GENERAL NOTES

1. The drawings, design and all information contained therein are the sole copyright of Wilson Architectural Engineering Ltd and reproduction in any form is forbidden unless permission is obtained in writing.

2. All drawings shall be read in conjunction with the Structural Preliminaries, all relevant Specifications, the Architects, Building Services Engineers, Structural Engineers, Civil Engineers, Landscape Architects and specialists drawings including approved builders work drawings, Contractor or Sub-contractor specialist designs, drawings, specifications and project documents.

3. Any discrepancies between the information given by the Engineer and that provided by Others, must be referred to the Engineer before the affected works proceed or elements of work proceed/ordered or fabricated.

4. Before Tendering, the Contractor shall at his own expense, visit and inspect the Site and acquaint/familiarise themselves with the Site conditions, the nature and condition of any existing premises, including all adjoining sites and boundary conditions, the accessibility of the Site, the nature of the ground, the position and extent of all services, including hidden services and mains, local conditions, the full extent and character of the works covered by the Contract, the supply of and condition affecting labour, materials and the conditions under which works is required to be procured and executed.

5. Refer to the Tender/Contract documents for details of overhead and underground services and below ground obstructions. Unless shown on the Project drawings, we have no knowledge of existing overhead and underground services or below ground obstructions. It is the Contractor's responsibility to carry out any further investigations or tests required to ascertain the location of existing overhead and underground services prior to implementing the works.

6. The Contractor is to take all necessary precautions to ensure the safety of all persons and works including erecting additional information if required and investigative surveys by competent persons prior to commencement of works. The Contractor must trace, locate and identify existing buried services prior to commencement of any excavations, etc.

7. The Engineer's drawings are based on original drawings produced by Others with no verification.

8. All dimensions are in millimetres unless noted otherwise. All levels are in metres and are related either to OS datum, Site datum or an arbitrary datum. Refer to the Architect's drawings for the level system to use.

9. Use only figured dimensions, do not scale from the Engineer's drawings or from the computer digital data.

10. All dimensions are given to structural surfaces unless noted otherwise. The structural slab (TOS) level is the top of the slab immediately adjacent to a vertical support. The top of slab (TOS) level is the top of the member immediately adjacent to a vertical support.

11. All beams are referenced by depth x breadth unless noted otherwise

12. Dimensions marked * highlight specific dimensions subject to confirmation by site measurement before construction proceeds and given for guidance only.

13. Refer to the Architect's drawings for dimensions not shown on the structural drawings.

14. Common abbreviations used:
mm Millimetres m Metres
CRS Concrete RC Reinforced concrete
FTL Finished Floor Level SGP Setting out point
TOS Top of steel SSI Structural slab level
Top of concrete BOS Bottom of steel
TOF Top of foundation BOC Bottom of concrete
ESL Existing ground level BOF Bottom of foundation
BSL Below ground level IL Invert level
UNO Underside TBC To be confirmed
UNO Unchecked otherwise DIA Diameter
MAX Maximum MIN Minimum
TYP Typical DPM Damp proof membrane
DPC Damp proof course MU Movement joint

15. For all setting out information refer to Architect's details. Refer to the Architect's drawings for the locations of the setting out stations and for details of how to set-out the building grid system.

16. The Contractor shall verify all site and setting out dimensions before commencing work or prior to ordering or fabricating any set items. Where dimensions are shown on the Engineer's drawings, any discrepancies shall be reported to the Engineer.

17. For responsibilities relating to BM Projects refer to the Project BM Execution Plan (BEP) and BM Protocol under the guidance of the Project's Information Manager (IM). If no IM is appointed, guidance should be sought from the Lead Designer or Project Lead.

18. Unless a drawing is noted as Construction Issue the drawing is suitable for pricing purposes only and subject to design development changes. No construction, fabrication or setting out should be commenced on drawings not labelled as Construction.

19. The locations, dimensions and details of retained structures are shown approximately on drawings and all dimensions, etc. shall be confirmed by site survey. Any discrepancies between the drawings and the actual arrangement on Site shall be brought to the attention of the Project Manager/Contract Administrator.

20. Where there are related existing structures and relevant information on the existing structure is not provided in the Tender, the Contractor is to survey all existing structures and structural elements to establish relevant information including: position, sizes, details and general arrangement and provide this information to the design team. The Contractor is responsible for establishing on Site conditions and dimensions relating to installation including tolerances to be allowed before manufacture. All dimensions of existing elements/construction and spatial dimensions are to be checked on Site by the Contractor prior to ordering or fabricating any set items. The Contractor shall allow necessary variation to the permanent and temporary works as a consequence of changes necessary to incorporate actual existing structure and revised scheme as necessary.

21. Inspections made by the Local Authority, Building Control, warranty provider or other statutory bodies, shall be arranged by the Contractor to suit their programme. Any costs arising out of failing to carry out the work to the satisfaction of the Checking Authority will be the sole responsibility of the Contractor.

22. Where materials are stored on slabs, these shall be spread out such that the permanent works design loading allowance is not exceeded. If in doubt consult the Engineer.

23. All proprietary products are to be used, erected and constructed strictly in accordance with the manufacturer's instructions.

24. Before prefabricated works commence the Contractor shall submit a full and detailed method statement and sequence of work (and where appropriate details of temporary works) to the Lead Consultant, Principal Designer and Engineer (A.S) for each area of work.

25. The Contractor is responsible for the design, fabrication, erection and removal of all temporary works including all temporary bracing, earthworks and back propping necessary to maintain structural stability during construction. The permanent works structure is designed for the final design loads. No allowance is made for construction loads or temporary loads arising from construction and the construction sequence unless specifically indicated/stated. Where temporary works (for example: falsework, scaffolds, hoists, lifting beams, access platforms, cranes, etc.) apply loads to the permanent works that exceed the design load allowances, the Contractor will carry out any calculations that are required to demonstrate that the permanent works will not be adversely affected or alternatively providing all necessary temporary works to support construction loading. The Contractor shall demonstrate that temporary works/propping/support systems proposed will not adversely affect the permanent works.

26. Specific construction sequence requirements, which are necessary to achieve structural performance are noted on the Engineer's structural drawings and specifications. The Contractor shall submit detailed method statements, which fully describe the erection strategy/sequence to be adopted, temporary works systems required and how stability is maintained during construction.

27. The Structural Engineer will examine/review specific structural elements designed by Specialists/Contractors/Others that relate to their Services, e.g. piles, preparatory roof trusses, precast elements (stairs, slabs, etc.) for the sole purpose of compliance with the design intent and engineering design philosophy/principles, in respect of configuration and general arrangement only. Only in accordance with Wilson Architectural engineering details and performance specification. Wilson Architectural Engineering do not check setting-out or dimensions. All setting out dimensions and locations of holes are subject to approval by Others. Any comments made do not absolve the Designer/Contractor from errors, omissions and inconsistencies in the documents or for establishing all of Site conditions and dimensions relating to installation, including tolerances to be allowed before manufacture. Comments or lack of comments, on the Designer's/Contractor's proposals shall in no way relieve them (the Contractor/Designer) of their design liability and obligation to comply with the Contract documents and with the terms of any separate Agreement with the Employer/Main Contractor (and their agreement with the Employer). The documents are also subject to comments which might be raised by Others.

28. Refer to approved builders work drawings for the location of service holes. Generally, only major holes or openings, which affect the concrete reinforcement detailing are shown on the structural drawings. 'Major' structural penetrations are defined as penetrations greater than 250mm x 250mm in slabs or structural walls, and any penetration in beams or columns. All known (when advised by the Building Services Engineer and Architect) major structural penetrations are shown on the Structural Engineer's drawings. 'Minor' structural penetrations are penetrations 250mm square or less in slabs or structural walls, and are not necessarily shown on the Structural Engineer's drawings, and are treated as Builder's work. The Architect is responsible for co-ordinating the sizes, locations and setting out of all major structural penetrations.

GENERAL NOTES (CONTINUED)

29. No holes, chases, cut-outs, existing or proposed services or the like may be formed in or pass through any beam, column, or load bearing wall unless written permission is obtained from the Engineer.

30. For size and location of all services refer to the Building Service Engineers and Architects drawings.

31. The Contractor is responsible for the design and drawing of builders' work. Apart from major penetrations, builder's work is not shown on the Structural Engineer's drawings. The Contractor must submit all builders' work details to the Structural Engineer for review, as these items may have a significant impact on the design of the permanent structure.

32. Refer to the Architects drawings for the location of movement joints in masonry walls. Movement joints including cladding, waterproofing, services, partitions, etc. are to be designed by the designers of these other items.

33. For D.P.M.s, D.P.C and waterproofing details refer to the Architect's drawings and details. Where D.P.M.s, D.P.C and waterproofing is shown on the Structural Engineer's drawings this is only as an aide memoir.

34. Fire resistance periods and fire protection details for all elements are shown on the Architect's drawings. The fire protection of steel framed structural elements is assumed to comprise fire boarding or intumescent paint specified by the Architect /Specialist Contractor.

35. The design of protective barriers is by the Architect and specialist supplier/Sub-contractor. Where the barrier forms an integral part of the [primary] structural frame it will be designed and shown on the Structural Engineer's drawings. In other cases, design will be by specialist designers/Sub-contractors (default position) or the Structural Engineer will provide advice to the Architect on structural requirements, and the barriers will be designed and drawn by the Architect or by a specialist supplier to the Architect's specification.

36. The Structural Engineer is responsible for the design of all primary structural steelwork, which is defined as 'steelwork essential to the strength, integrity and robustness of the structural frame'. Secondary steelwork items such as handrails, stair balustrades, balcony barriers, lift guides, plant supports, partition frames, etc. are the responsibility of the designer of the item, i.e. the Architect, Contractor or specialist supplier.

37. The Contractor's specialist sub-contractor/Designer is responsible for the structural design of the stairs (default position), whether they are in timber, precast, grout or cast-in-situ concrete, unless specifically noted on the drawings. Where the Structural Engineer undertakes the design, the drawings show the structural member sizes, including landing and waist thickness, but do not set out the risers and goings.

38. The design of fixing mechanisms for items is the responsibility of the designer of the item and is to be accommodated with boundary fences using gravel boards. Dwarf masonry retaining walls between plots exceeding 450mm in height to say 1m maximum retained height are designed by the Architect with advice on structural adequacy of simple constructions from the Structural Engineer when required. For larger masonry retaining walls the Structural Engineer will detail typical cross sections. In both cases, the Engineer will specify the masonry in terms of appearance and durability. For concrete retaining walls and other forms of retaining structure, the Structural Engineer will detail fully, based on geometry defined by the Architect.

39. All lightning connections to be fixed in accordance with specialist details. Internal earthing rods/terminals where they affect the structure require the involvement of the Structural Engineer.

40. Where external concrete slabs are indicated, the Structural Engineer's drawings show typical joint layouts to be adopted and joint details for the Contractor to develop the detail design and produce a working slab joint layout.

41. Minor retaining walls between plots, retaining a height of up to 450mm are assumed to be cast-in-situ concrete retaining walls using gravel boards. Dwarf masonry retaining walls between plots exceeding 450mm in height to say 1m maximum retained height are designed by the Architect with advice on structural adequacy of simple constructions from the Structural Engineer when required. For larger masonry retaining walls the Structural Engineer will detail typical cross sections. In both cases, the Engineer will specify the masonry in terms of appearance and durability. For concrete retaining walls and other forms of retaining structure, the Structural Engineer will detail fully, based on geometry defined by the Architect.

42. Refer to the Architect's drawings for:
Setting out dimensions not shown on structural drawings
Details of all D.P.M. and D.P.C.
Details of all damp-proofing, waterproofing systems and sealants
Details of required retaining walls, stairs, chime/vents, etc. in the concrete profiles
Details and setting out of cast-in items such as channels, fixings, etc.
Fire protection systems
All screeds, sealants and other non-structural applied finishes
Balustrade systems and other non-structural metalwork
Support for cladding systems

43. Refer to the building services engineer's drawings for:
Details of the lighting protection system for the building including earthing pits
Details of the drainage system in and around the substructure including gullies, gulps, etc.
Details of all plinths, upstands, bases and the like for planters. These details must be on the builders' work drawings

44. Refer to lift manufacturers drawings for the following information:
All secondary lift steelwork, including lift support beams and lifting beams
All brackets, inserts and fixings required around lift shaft walls

45. Health & Safety. Wilson Architectural Engineering Ltd are engaged as a Designer and will perform their statutory duties as a Designer relating to Construction (Design and Management) Regulations 2015 (CDM Regulations) to the extent that they apply to this work. Reference should be made to the Designer's Risk Assessments, H&S CDM notes included on the drawings, the Pre-construction Information and the Construction Plan.

FOUNDATIONS IN GENERAL
1. Unless noted otherwise, foundations are to be centred under columns and walls.
2. Concrete grades in foundations to be shown in the concrete notes section.
3. Retaining walls and pits are to be propped and braced until permanent support has attained full design strength.
4. Services passing through structure to be isolated and protected in accordance with the Service Engineer's specification.

STRUCTURAL STEELWORK
All materials, fabrication, workmanship and erection of steelwork shall be in accordance with the latest edition of the National Steelwork Specification for Building Construction (NSSS) as published by the British Constructional Steelwork Association.

The Execution Class for the structure is EXC2 to BS EN 1090-2. All fabricated structural steelwork shall be CE marked in accordance with BS EN 1090-1.

Unless specified otherwise, Grade S355 steelwork shall be used throughout. Where RHS, SHS or CHS members are specified, use Grade S355NH steelwork to BS EN 10025 (UNO).

The steelwork contractor shall design and detail all connections for the minimum loads and moments provided on the drawings or beam schedules in accordance with relevant design code adopted for the element design (BS/EC - ask the Designer), which will be subject to comment and review by the Engineer

Where connection loads are provided by the Engineer, the steelwork contractor shall design connections which will be subject to comment by the Engineer.
Factored design loads in excess of the minimum design loads are indicated on the drawings. End reaction forces are shown with their definitions in parentheses.

V Vertical shear kN
M Max axis bending moment kNm
A Axial force kN
T Torsion kNm
H Horizontal shear kN

Unless noted otherwise, all connections to be designed for a minimum load of 75kN in Shear /75kN in Tension.
All bolt welds are to be properly prepared and to be full strength and penetration. All fillet welds to be min. 6mm full profile UNO. All welds to be tested in accordance with BS EN 288.

The contractor is to ensure around foundation bolts under column base plates. Minimum thickness at any point is to be 25 mm. Grout is to have a minimum characteristic strength of 30N/mm² at 28 days and with shrinkage compensation capability. Grout to be Cobiastra Expandite or 5-Star or equivalent approved and placed in accordance with the manufacturer's instructions.

Holes through steelwork shall be drilled. The burning or punching of holes is not acceptable.

Steel beams shall at least have the minimum bearings on masonry walls as shown on the drawings. Where no point bearings are shown provide bearings to the full width of the supporting leg or 150 mm whichever is greater.

GENERAL NOTES (CONTINUED)

The Engineer is not responsible for dimensional information.
All setting out information, dimensional etc. shall be obtained from the Architects drawings. All steelwork levels, even those shown on the Engineers drawings must be confirmed or obtained from the Architects drawings.

The Steelwork Contractor is to provide adequate temporary bracing and propping during the sequence of erection.

All Steelwork is to be fire protected to the Architects details.
The expected minimal requirement for internal steelwork is: clad with 2 layers of 12.5mm plasterboard, with 16-gauge wire bindings at 100 mm centres and plaster skimmed to a minimum thickness of 5 mm.

The Steelwork Contractor is to co-ordinate with the Main Contractor and cladding Contractor to provide all necessary secondary steelwork, trimming etc. as required around all doors, windows and the like.
Steel beams supported by masonry walls should bear onto steel bearing plate or concrete padstone.

1. Refer to the Architect's specification and drawings for intumescent and finishes coatings requirements for fire protection.

2. All corrosion protection systems must be compatible with fire protection and finish coat with agreed RAL colour as specified by the Architect.

3. All coatings to any individual element shall be from a single manufacturer, checked for compatibility and applied in accordance with the manufacturer's instructions.

4. All structural steelwork shall be blast cleaned to BS EN ISO 8501-1, preparation grade SA 2 1/2, and except where specified as galvanised, shall be painted with a suitable good quality high build epoxy primer in accordance with CIRIA 174 Guide New paint systems for the protection of construction materials. Unless otherwise specified on the drawings, internal steel work shall be specification I5 and external steelwork (not hot dipped galvanised) specification E2. 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).

5. All lintel beams shall be hot dipped galvanised.

6. Steelwork specified as galvanised shall be blast cleaned as above & hot dip galvanised to BS EN ISO 1461 minimum coating thickness 85 microns. Corrosion category to be C3 BS EN ISO 12944-2.

7. All steelwork below DPC level or built within the masonry wall cavity shall additionally 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. LEIGHES PAINTS EPIGRIP G40 zinc phosphate primer/buldox or equal.

8. Steelwork below DPC and adjacent to soil shall be encased in concrete with cover of not less than 100 mm. A reduced cover of 50 mm will be permitted when cast against masonry or additional protection is provided. Concrete to be not weaker than C20/25N/mm² at 28 days to BS EN 206-1, BS 8500-1 and BS 8500-2.

9. Where steelwork has any form of paint finish specified, fasteners connecting that steelwork shall be corrosion protected as follows, except where indicated otherwise:
1. Strengths up to and including Grade 8.8 - S35 including Grade 8.8 EN 10010
2. Higher strengths than Grade 8.8 - Class 1 sheradised to BS 4921 (minimum thickness 30 microns)

10. Fasteners, which connect to steelwork requiring fire protection shall receive the paint system(s) applicable to the connecting steel work in addition to the system specified on the fasteners.

11. Fasteners that are galvanised and which are to receive any form of paint finish shall be etch primed.

12. The steelwork contractor shall repair any damage to the coatings to the same standard as the original specification.

LINTELS
1. All lintels to internal block work to have minimum end bearing of 150mm.
2. All lintels to be precast concrete lintels or stainless steel type with capacities as follows:
For clear spans up to 1200mm use 100 x 65mm dp lintels with capacity of 1.2kNm, 140 mm dp lintels with capacity of 1.7 kNm & 215 x 65mm dp lintels with capacity of 2.5 kNm.
For clear spans up to 1800mm use 100 x 140mm dp lintels with capacity of 1.2 kNm, 140 x 140mm dp lintels with capacity of 1.7 kNm & 215 x 140mm dp lintels with capacity of 2.5 kNm.

3. Alterations required to both solid brick walls and cavity walls, the following lintels are to be used for different width and thickness of walls:
CORROSION PROTECTION FOR STRUCTURAL STEELWORK
Solid Walls
4" thick walls up to 1m wide opening Precast lintel 65x100
300mm thick walls up to 1.5m wide opening Precast lintel 100x100
4" thick walls up to 2.5m wide opening Precast lintel 215x100
300mm thick walls up to 1.5m wide opening Precast lintel 100x100
6" thick walls up to 1.5m wide opening Precast lintel 2no. 100x100
6" thick walls up to 2.5m wide opening Precast lintel 2no. 215x100
12" thick walls up to 1m wide opening Precast lintel 2no. 65x100
12" thick walls up to 1.5m wide opening Precast lintel 3no. 100x100
15" thick walls up to 2.5m wide opening Precast lintel 3no. 215x100

Cavity Walls
300mm thick walls up to 1m wide opening Catic lintel CG 90/100
300mm thick walls up to 1.5m wide opening Catic lintel CG 90/100
300mm thick walls up to 2.5m wide opening Catic lintel CG 90/100

4. Lintels are not to be used over openings which are created under point loads from existing or proposed beams. Only timber floor can be supported within the zone of influence by these lintels. Engineer is to be informed for lintel design in these cases.

TRENCH FILL FOUNDATIONS IN CLAY
1. Read in conjunction with the Notes shown in the Spread Foundations General and Concrete section.

2. Concrete grades shall be as shown in concrete section notes and shall be in accordance with BS EN 206-1, BS 8500-1 and BS 8500-2.

3. The foundation design is based on the assumption that strata capable of providing a suitable design bearing capacity will be found at the depths indicated. Foundations should be founded at the indicated depths and should penetrate all soft soils, made up, or disturbed ground by a minimum of 150mm into the undisturbed founding strata. The discovery of conditions not in accordance with this assumption shall be reported to the Engineer before proceeding with the construction of the foundations. Should the additional depth of foundation required to penetrate the founding strata exceed 500mm, the Engineer should be consulted before proceeding.

4. Foundation depths are based on the greater of:
Depth to suit trees to remain as shown on the drawings.
Depth to suit trees to be removed as shown on the drawings.
Depth to suit new tree and shrub planting as shown on the drawings.
Depth shown are to be measured from existing or final ground levels, whichever gives the lowest level, unless otherwise shown on the drawings.
5. Foundation depths shall be increased as required to penetrate a minimum of 500mm below any root activity. Depths determined by this requirement shall not be less than those shown on the drawings.

6. To ensure compliance by the Contractor with note 4, an Engineer shall be employed to inspect excavated soil during the final 500mm of any excavation. The Engineer should break open clumps of soil excavated to examine the soil for roots. If in doubt, the Engineer should be consulted before proceeding further with construction of the foundations.

7. All foundations shall be constructed with a vertical face without the presence of any over break or concrete overspill. The Engineer is to be informed if such criteria are not met to agree appropriate remedial action.

8. Foundation depths shown apply only to the location of buildings accounting for the presence of trees & shrubs shown on the drawings. Report to the Engineer if site conditions or details of trees/shrubs vary from information shown.

The Contractor is to ensure, so far as reasonably practical, that the Client has obtained all necessary Building Regulations and/or similar approval before Commencing work on Site.

The Contractor is responsible and liable for ensuring the stability of the works and services at all stages of construction. Unless shown on the Project drawings, we have no knowledge of existing underground services or obstructions.

Heavy protection measures shall be provided to the inside face of perimeter trench fill foundations when deeper than 1500mm to a depth of 500mm above founding level when the heave potential is HIGH or MEDIUM. See typical sections drawing for details.

GENERAL NOTES (CONTINUED)

CONCRETE

1. All concrete is to comply with the National Structural Concrete Specification for Building Construction, latest edition, and these drawings.
2. Dimensions of concrete beams are given as depth overall (including slab) x breadth UNO.
3. Upstands are dimensioned as height above the slab x breadth.
4. All concrete works should comply with the geometric tolerances stipulated in the National Structural Concrete Specification for Building Construction Section 10.
5. Unless noted otherwise, the concrete grades are:

Location	Concrete Grade	Consistency Class	Special Requirements	sulphate Class	ACCE Class
Blinding	GEN1	S3	DS-X	AC-X	
Mass Concrete Foundations	GEN3	S3	DS-X	AC-X	
Piling	*	*	*	*	*
Pilecaps	C32/40	S3	DS-X	AC-X	
Ground Beams	C32/40	S3	DS-X	AC-X	
Slabs	C32/40	S3	DS-X	AC-X	
Beams	C32/40	S3	DS-X	AC-X	
Columns	C32/40	S3	DS-X	AC-X	
Walls	C32/40	S3	DS-X	AC-X	
Retaining Walls	C32/40	S3	DS-X	AC-X	

NOTE: * Piling Contractor design element

6. All Reinforcement shall be from an 'CARES' approved supply/fabricator and shall comply with deformed bars type 2, strength $f_y = 500$ N/mm².

7. The type and grade of steel reinforcement is indicated in below:

Type of Steel Reinforcement	Notation
For diameters < 12mm, Grade B500A, Grade B500B or Grade B500C conforming to BS 4449:2005	H
For diameters > 12mm, Grade B500B or Grade B500C conforming to BS 4449:2005	A
Grade B500A conforming to BS 4449:2005	B
Grade B500B conforming to BS 4449:2005	C
Grade B500C conforming to BS 4449:2005	S
A specified grade and type of ribbed stainless steel conforming to BS EN 10210-2: 2001	X

Reinforcement of a type not included in the above list having material properties that are defined in the contract or contract specification.
NOTE 1: In the Grade description B500A, etc. "H" indicates reinforcing steel.
NOTE 2: On this project, steel designation "H" means Grade B500B

8. Fabric reinforcement shall be to BS 4483:2005.

9. Welding of reinforcement is not permitted without the prior approval of the Engineer.

10. Cover to reinforcement depends upon the fire rating and the exposure classification of the element in consideration.

Σ Fire ratings are as follows: 60 Minutes TBC by Architect

11. Cover to reinforcement to be as shown on the reinforcement drawings.

Refer to the table below for typical cover to reinforcement elements for each individual element. Assumes 5mm fixing tolerance:

Table of Concrete Cover to Reinforcement (mm)		
Element	Concrete Grade	
Internal Elements	Slabs	35
	Beams	35
	Columns	35
	Walls	35
	Stairs	50 Bottom, 35 Top
External Elements	Beams	50 *
	Columns	35
	Walls	35
	Lift Pit Walls	50
	Retaining Walls	50
Elements in contact with the Ground	With Blinding	50
	Without blinding	75
* Bottom cover to underside of pile group beams 75mm		

12. The Contractor is responsible for providing adequate support to the top reinforcement during fixing of reinforcement prior to and during placement of concrete.

13. The Contractor shall check the compatibility of the reinforcement bar bending schedules with the drawings and report any discrepancies to the Engineer and obtain instructions before ordering the reinforcement.

14. Unless noted otherwise, the concrete finishes shall be in accordance with The National Structural Concrete Specification C1 8.6

For formed concrete the default finish for R/C frame construction not exposed when the building is finished is ordinary finish. For unformed concrete the default position is basic finish. For the location of concrete finishes of higher quality, refer to the Architect's drawings.

Unformed (ref National Structural Concrete Specification c 8.6)
Σ Below ground: Basic
Σ Above ground not exposed surfaces: Basic
Σ All exposed surfaces: Ordinary
Σ Above ground surfaces to receive waterproofing: Plain (or in accordance with the Waterproofing System)

Formed (ref National Structural Concrete Specification c 8.6)
Σ Ordinary
Σ Surfaces to receive waterproofing: Plain

15. All exposed concrete edges to have a 25 x 25mm chamfer UNO. All concrete surfaces to receive waterproofing/membrane/supplies to have on internal corners, 25 x 25 fillet and on external edges 25 x 25 chamfer.

16. For the Waterproofing Strategy and for the full extent of waterproofing and water tight concrete construction refer to Architects drawings.

17. Where Type B structural integral protection, as defined in BS 8102, using water resistant concrete is proposed, admixture's must comply with BS EN 934-2:2009.

18. Concrete to the following areas to be of waterproof/resistant construction as specified:
Σ Lift pit base slable cap and walls (TBC by Architect)

19. Permitted concrete waterproofing admixture
Σ Contractor proposal/design complying with BS EN 934-2:2009

20. Type B waterproofing concrete to be installed by suitably experienced and trained concrete operatives who are fully aware of the requirements for placing concrete used in Type B systems. Particular attention is needed at construction joints and care is required to avoid honeycombing through lack of compaction, contamination and cold joints.

21. In watertight construction 'chequer board' and 'hit and miss' type construction is prohibited, see Structural Specification. Where infill panels are unavoidable panels must be positioned at reinforcement lap locations and extend no more than 200mm either side of the lap joint.

22. The use of proprietary permanent expanded metal formwork shuttering system/slop-ends is prohibited in construction joints in areas where waterproof concrete is required.

23. In waterproof concrete or basement construction, all construction joints in concrete cast against the ground (or void forms) shall be fitted with continuous hydrophobic strips at the centre of the section or as indicated on the drawings. Includes lift pit walls at the junction of base and slab.

GENERAL NOTES (CONTINUED)

CONCRETE (CONTINUED)

24. Concrete to receive waterproofing system (membrane/spray/renderers/etc.)
Σ Concrete edges to have a 25x25 chamfer.
Σ Concrete internal corners to have a 25x25 fillet.
Σ Concrete finish to be compatible with proposed waterproofing system.
25. Reinforced concrete shall be compacted by means of a mechanical vibrating poker and the workability shall be such that, when compacted, a dense concrete, free from voids shall be produced.

26. Openings (BIMC) in concrete elements shown on Wilson Architectural Engineering Ltd structural drawings are to be checked by the Contractor against relevant service builder's work drawings and Architects drawings prior to construction. Any discrepancies must be drawn to the attention of the Architect/Project Manager/Contract Administrator. Only openings greater than 200mm DIA. or square are generally shown on drawings.
Openings less than 200mm DIA. or square are generally not shown or shown indicatively as an side memoir and are not set out.

27. All holes in reinforced concrete are to be formed.

28. No cutting or removal of placed concrete is permitted without prior approval of the Structural Engineer.

29. Unless noted otherwise slab openings are to be trimmed with additional reinforcement not shown on the drawings as follows:

Opening	Reinforcement/Trimming Requirements
Isolated openings of 200mm x 200mm, 200mm diameter or smaller	Displace all bars around the opening. No additional trimming reinforcement is required UNO.
Larger isolated openings with sides 500mm or less	Additional trimmers and U-bars are required. Cut or side slab affected bars to face of hole. Provide compensating bars of equal area to trim all slabs. Trimmers should extend 40 x bar dia. beyond the hole. Ensure required cover is maintained.
Groups of holes within a boundary of 500mm or less	Trim as a single hole using method described above for opening with sides 500mm or less
Openings greater than 500mm	Consult the Structural Engineer

30. The Contractor shall determine the positions of construction joints not shown on the Engineers drawings to meet the requirements of the concrete specification. All construction joints (position and details) and pour sequences to be agreed with the Engineer prior to construction. Construction joints shall be formed against a vertical grout tight shutter and shall be located in the middle third of any beam between supports, subject to being a minimum of 1.5m from any junction with other beams.

31. Starter kickers to all walls, columns etc. to be 100mm high unless otherwise noted. Starter sections in water resisting concrete construction to be 150 mm high and cast integral with the floor slab.

32. All slabs shall be cured in accordance with the specification for not less than 7 days using an approved sprayed curing membrane in accordance with the national Structural Concrete Specification c 8.3.

33. Falsework and formwork shall be struck at a time to comply with the specification. The periods given in CIRIA Report 136, BS 8110-1 Table 6.1 or BS EN 13670 may be taken as a general guide for the removal of formwork. The time periods will vary depending on the cement type.

34. All slabs and beams shall be propped and back-propped for a time period and extent in accordance with the specification and have no damaging effect on the permanent works.

35. For details of the lightning protection requirements to be incorporated into concrete works, refer to the Building Services Engineer/MEP Consultant services drawings.

36. Where large or deep concrete pours are required, control of the heat of hydration is of paramount importance. The Contractor is to submit a method statement in accordance with the CIRIA Report R135 'Concrete Deep Lifts and Large Volume Pours' including control of heat of hydration and temperature monitoring proposals for approval four weeks prior to construction.

37. Pre-cast stair units are to be Contractor designed to the loads shown on the loading plans.

38. The Engineer's reinforcement quantities give only the reinforcement required to satisfy the requirements of the structural design. The Contractor shall add to this any reinforcement continued to facilitate construction including, but not limited to, spacers, anchorages, chairs, bars for holding cast-in items in place and wastage.

39. Concreting works shall not be carried out if the air temperature is lower than 2 degrees or if frost is expected.

40. All reinforcement to be inspected and approved by Building Control prior to pouring of concrete.

41. Sudden irregularities in concrete finish are not permitted. The variation in surface finish is to be not more than 5mm under a 3m straight edge and/or 2mm under a 1m straightedge.

ROOF STRAPPING

1. STRAPPING FOR PITCHED ROOF
Gable walls to be 50mm C16 grade timber strapped to roofs at 2m centres. All external walls running parallel to roof to be 100mm x 30mm x 5mm galvanised mild steel horizontal straps or other approved to BS EN 845-1, straps to be screw fixed, built into walls at max 2000mm centres, and taken across a minimum of 3 rafters. Provide solid roggies between rafters at design positions. All wall plates to be 100 x 50mm fixed to inner skin of cavity wall using 30mm x 5mm x 1200mm galvanised metal straps or other approved to BS EN 845-1 at maximum 2m centres.

2. FLAT ROOF RESTRAINT
Section 5.50mm C16 grade timber wall plates to be strapped to walls using 1200mm x 30mm x 5mm galvanised mild steel straps at maximum 2.0m centres, straps to be fixed to internal wall faces.

SPAN TABLES

Span tables can be used to determine the size of a timber member of a particular strength class required for a given span. They also tell you what the maximum spacing should be between each section or timber member

FLOOR JOISTS		
SIZE OF JOISTS (mm)	CLEAR SPAN C16 JOIST (M)	CLEAR SPAN C24 JOIST (M)
47 X 95	1.77	2.05
47 X 120	2.40	2.67
47 X 145	2.89	3.22
47 X 170	3.38	3.77
47 X 195	3.87	4.21
47 X 220	4.36	4.85

Assumptions at 400mm Centers
- Supporting permanent load (excluding self-weight of joists) up to 50kg/m².
- Supporting imposed load up to 150kg/m².
- Joist breadth 47mm.
- Span is clear span between supports.
- At least 40mm bearing on supports.
- If supporting lightweight partition running perpendicular to joists, reduce span by 10%.
- If supporting lightweight partitions running parallel to joist, provide two additional joists under each partition.

FLAT ROOF JOISTS		
SIZE OF JOISTS (mm)	CLEAR SPAN C16 JOIST (M)	CLEAR SPAN C24 JOIST (M)
47 X 95	1.77	2.04
47 X 120	2.40	2.75
47 X 145	2.89	3.47
47 X 170	3.38	4.20
47 X 195	3.87	4.93
47 X 220	4.36	5.66

Assumptions at 400mm Centers
- Supporting permanent load (excluding self-weight of joists) up to 50kg/m².
- Supporting imposed load for access and repair only.
- Maximum spans 10 deg.
- Joist breadth 47mm.
- Span is clear span between supports.
- At least 40mm bearing on supports.

The Institution of StructuralEngineers



GENERAL NOTES -
MUST BE READ - MUST BE READ - MUST BE READ - MUST BE READ - MUST BE READ

1. Design is in accordance with the Architects or Client's provided drawings and British Standards. The existing structure/property must be surveyed/inspected by the building contractor/fabricator prior project start date and prior to fabrication order of any structural members. This will confirm our proposals and potentially identify any variations that may be required before work commences and arises during the build. Potentially saving the client delays and cost. The building contractor is responsible for the location of existing services on site and its temporary stability during construction. End bearing calculations are based on there being no cracked, loose or damaged masonry at the support locations and such defects should be reported to the engineer prior to fabrication of any structural members. Any work carried out on site prior to Full Building Regulation Approval is at the Contractor's & Client's own risk. Any change of design without the Architect and Structural engineer approval is at the Contractor's & Client's own risk.
2. All beams/lintels to have a minimum load bearing of 150mm (when parallel to supporting wall) or greater if stated otherwise and consider minimum bearing of 215 long 2 Course Eng. Brick work Padstone if not stated otherwise. Load bearings to be checked by building control.
3. Provide minimum 30 min fire protection (fireboard or coating). If steel is to be installed in damp environment, steel fabricator is to advise on corrosion protection based on guides to good practice in corrosion control. To be checked by building control.
4. Note that any assumptions made in this paper are only to contribute to easier calculations of the loads on the structure and are not in any way to compromise the safety of the structural design.
5. All timbers to be grade C24 unless stated otherwise.
6. Consideration should be made and discussed with building control regarding if concerns are raised when trees are near foundations.
7. Consider foundation depth on shrinkable clays and to avoid future problems, increase the depth above standard requirements if there is a risk.
8. Contractor must expose existing foundation and seek building inspector advice if local mass concrete underpinning is required.
9. Structural calculations are for Building Notice submission only, not for ordering materials due to approx. on site dimensions. Principal Architect or Principal Contractor is responsible for taking measurements on site. Wilson Architectural Engineering is not responsible for site measurements.
10. Our proposed designs can be altered depending on existing site conditions. We welcome other proposed designs by others if seen as more cost effective to client.
11. Building control to confirm proposed designs before building work starts. This will reduce delays and potential additional cost to client.
12. If the building contractor has any concerns or questions with our proposals or wishes to change or deviate from what we have proposed, the building contractor must inform Wilson Engineering prior to any ordering or installation of items, as time spent rectifying the building contractor's work will be chargeable to the building contractor. We strongly advise the building contractor to speak with Wilson Engineering at the point where he or she has any concerns or questions.
13. IF IN DOUBT - PLEASE CONTACT WILSON ARCHITECTURAL ENGINEERING

Date: 01/10/25 Rev: 02

Site Address:
15 LITTLECOTE DRIVE, READING RG1 6JD

Project Description:
CHIMNEY BREAST REMOVAL
&
HIP TO GABLE LOFT CONVERSION

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