



- EXISTING LOAD BEARING WALLS
- WALLS TO BE DEMOLISHED
- BRICK INFILL

FIRST FLOOR
DEMOLITION PLAN

check the latest drawings from the link below
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Client/Site Address
31-34 COMMERCIAL ST,
NEWPORT NP20 1HJ

Project:
1ST, 2ND, 3RD, 4TH, LOFT
FLOOR FLAT CONVERSION
STRUCTURAL DRAWINGS

Title:
DEMOLITION PLAN
FIRST FLOOR



Drawn by:
TL
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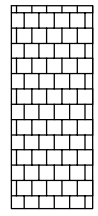
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FIRST FLOOR STRUCTURE (TOP OF GROUND FLOOR STRUCTURE)



EXISTING LOAD BEARING WALLS



BRICK UP THESE SECTIONS TO ALIGN WITH THE NEW FLOOR LEVEL

NEW FLOOR STRUCTURE

Inspect the existing floor structure to determine the size, spacing, and support conditions of the joists and beams. If found to be inadequate, install new C24 47 × 250 mm joists at 300 mm spacing, along with new steel beams as shown above, on top of the existing floor, ensuring proper leveling.

EXISTING FOUNDATIONS

The existing foundations are assumed to be sufficient for the additional loads; however, this is subject to building control approval. A 1 × 1 m trial pit should be excavated at designated points to inspect the foundations. Inform the engineer of the findings for further assessment and any necessary actions

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Title:
FIRST FLOOR JOISTS
ARRANGEMENT



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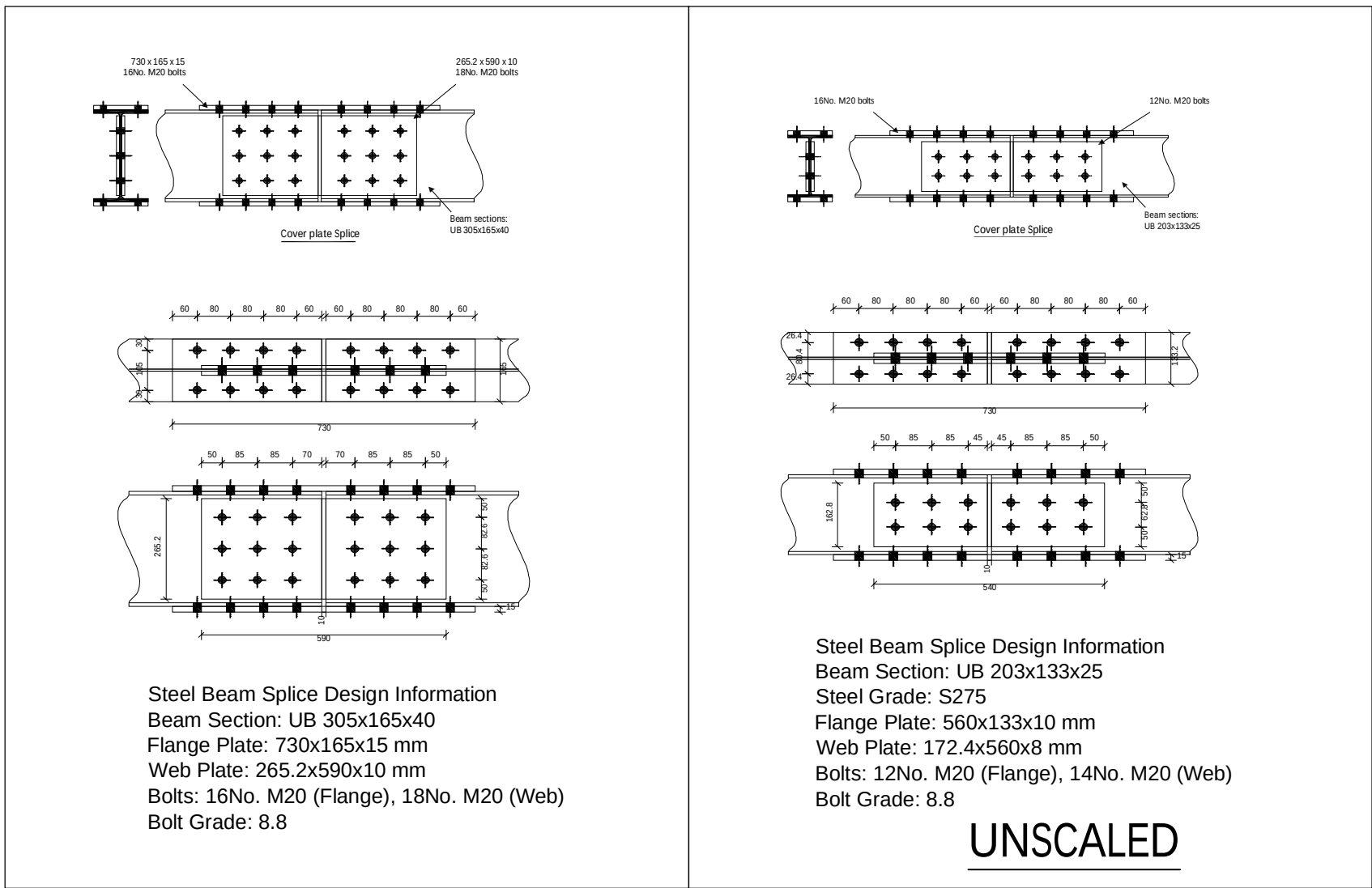
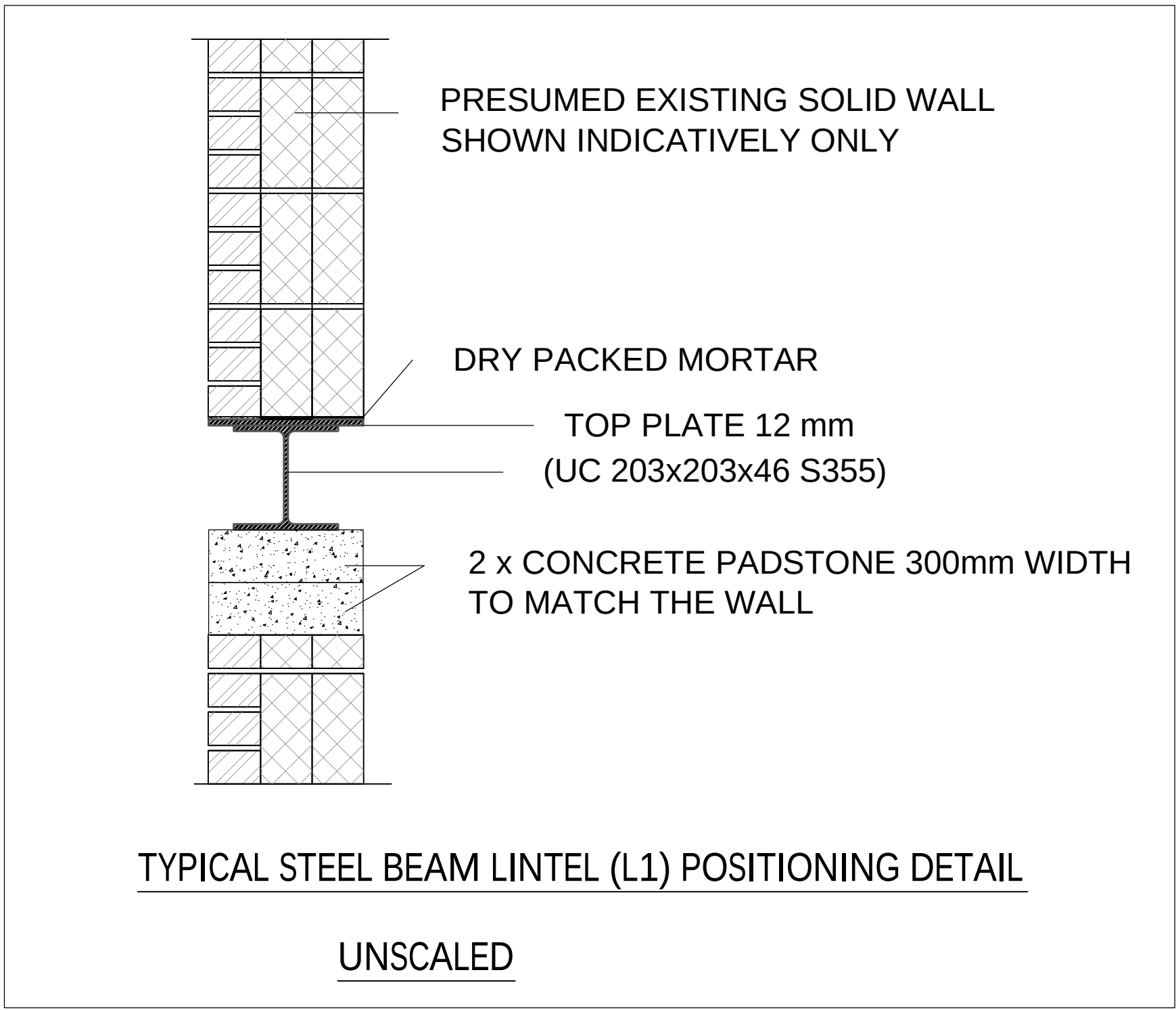
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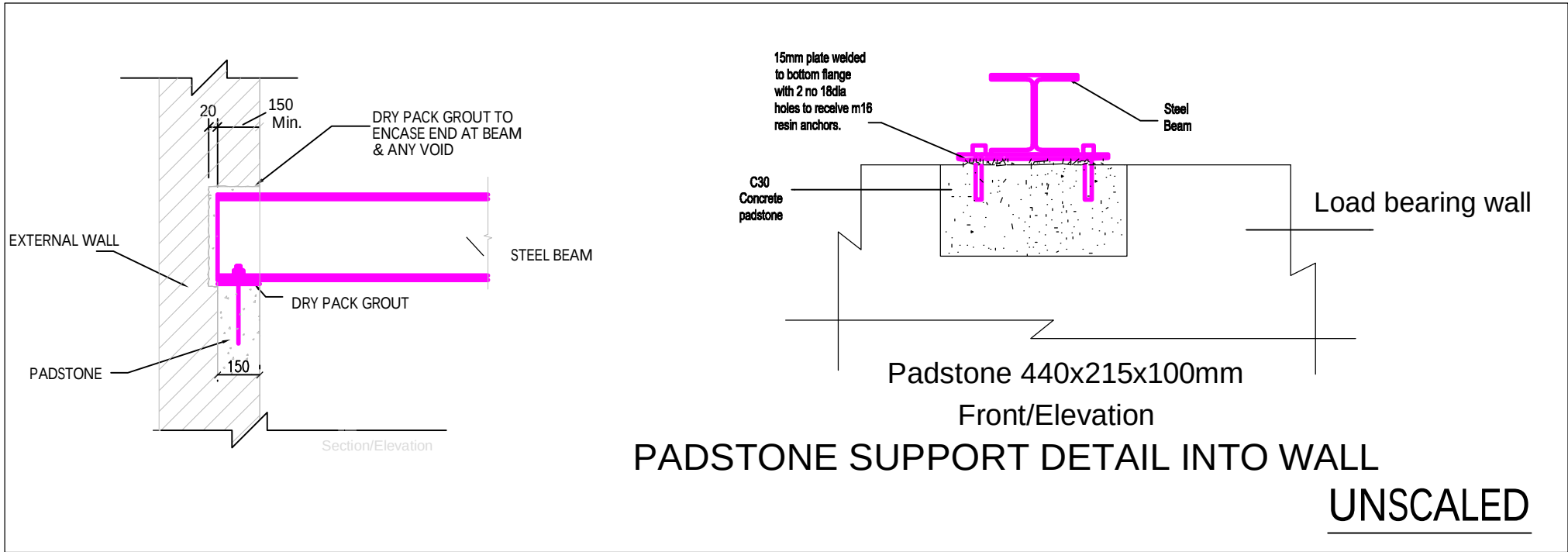
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GENERAL ARRANGEMENT
TOP OF FIRST FLOOR



All steel beams are to be seated on the load-bearing solid wall with a padstone, ensuring a minimum bearing length of 150mm. Refer to the padstone detail for further information



EXISTING JOISTS Existing timber joists, presumed to be sized at C16 47x275, are considered sufficient. The contractor must verify the joist sizes on-site and notify the engineer of any discrepancies. Any undersized joists will be replaced with C24 47x275.	NEW BEAM 1-2-3 In order to support the floor joists above, UB 203X133X25 S355 will be installed as shown	NEW BEAM 6 Following the removal of the load-bearing wall, 2 no UB 305X165X40 S355 beams will be installed to support the floor joists above. Any short or damaged joists will be replaced with C24 timber, size 47x275mm	EXISTING BEAM 3 Contractor to check the existing beam 3. If it is undersized (minimum required size: UB 178x102x19), replace it with a UB 178x102x19
EXISTING BEAM 1 Existing Beam 1 is presumed to be sized as IPE 300 (I shape 150X300mm) and is considered sufficient to support the design loads. The contractor must verify the actual size of the existing beam on-site. If any discrepancies are found, the engineer must be notified immediately. Any undersized existing beams under this category will be considered insufficient and replaced by UB 254x146x31.	NEW BEAM 4-5 To support the existing beam, a UB 305X165X40 S355 will be installed below the existing beams and welded together. Position the new beam directly underneath the existing beam, ensuring proper alignment along the length. Weld the new beam to the existing beam along the entire length. Ensure continuous and strong welds for maximum load transfer.	NEW BEAM 7 Replace the timber lintel with a UB 178x102x19 NEW BEAM 8 Replace the concrete lintel with a UB 178x102x19	L1 UC 203x203x46 S355 + TOP PLATE 12 mm to match the wall width above EXISTING CONCRETE LINTEL

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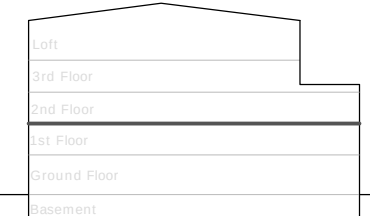
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GENERAL ARRANGEMENT
TOP OF FIRST FLOOR



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TL

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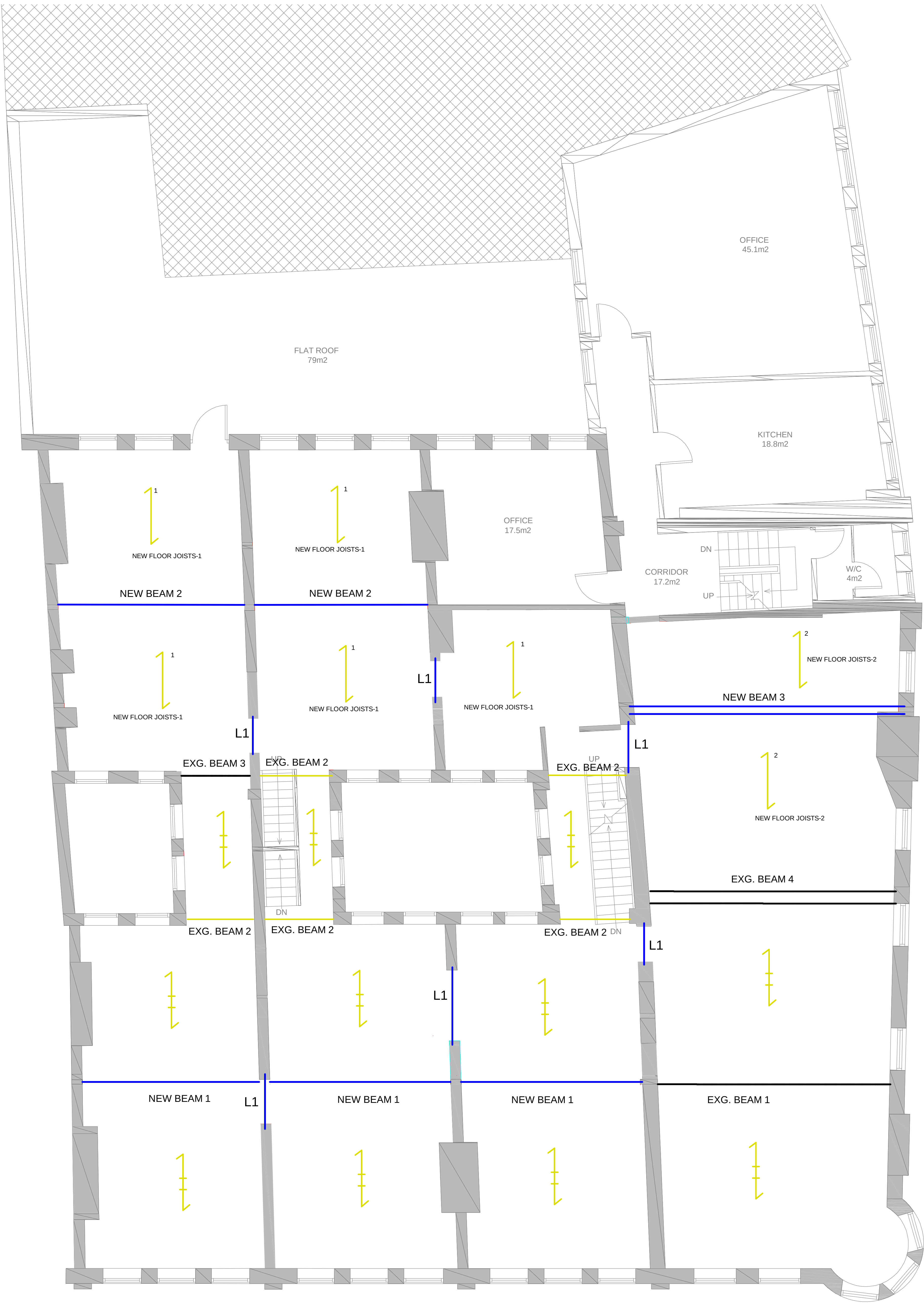
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3



GENERAL ARRANGEMENT
TOP OF SECOND FLOOR

EXISTING BEAM 4

Existing Beam 2 is presumed to be sized as 2 x UB 305x127x37 S275 and is considered sufficient to support the design loads. The contractor must verify the actual size of the existing beam on-site. If any discrepancies are found, the engineer must be notified immediately. Any undersized existing beams under this category will be considered insufficient and replaced by UB 305x127x37 S355.

EXISTING FLOOR JOISTS Existing timber joists, presumed to be sized at C16 47x275, are considered sufficient. The contractor must verify the joist sizes on-site and notify the engineer of any discrepancies. Any undersized joists will be replaced with C24 47x275.	EXISTING BEAM 3 Contractor to check the existing beam 3. If it is undersized (minimum required size: UB 178x102x19), replace it with a UB 178x102x19	NEW FLOOR JOISTS-1 Existing floor joists will be replaced with C24 47x275 spacing 400mm	NEW FLOOR JOISTS-2 Existing floor joists will be replaced with C24 47x275 spacing 300mm
EXISTING BEAM 2 Existing Beam 2 is presumed to be sized as C16+ 100X300 and is considered sufficient to support the design loads. The contractor must verify the actual size of the existing beam on-site. If any discrepancies are found, the engineer must be notified immediately. Any undersized existing beams under this category will be considered insufficient and replaced by C24 100X300 or UB 178x102x19 S355.	EXISTING BEAM 1 Existing Beam 1 is presumed to be sized as UB 356x171x45 S275 and is considered sufficient to support the design loads. The contractor must verify the actual size of the existing beam on-site. If any discrepancies are found, the engineer must be notified immediately. Any undersized existing beams under this category will be considered insufficient and replaced by UB 356x171x45 S355.	NEW BEAM 1 In order to support the floor joists above, UB 254x146x31 S355 will be installed as shown NEW BEAM 2 In order to support the floor joists above, UB 305x165x40 S355 will be installed as shown	NEW BEAM 3 In order to support the floor joists above, 2 no UB 305X165X40 S355 beams will be installed to support the floor joists above. Any short or damaged joists will be replaced with C24 timber, size 47x275mm L1 UC 203x203x46 S355 + TOP PLATE 12 mm to match the wall width above

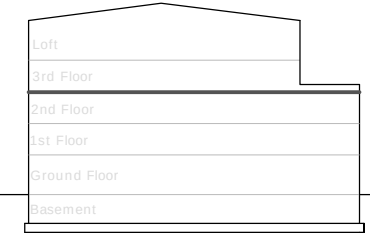
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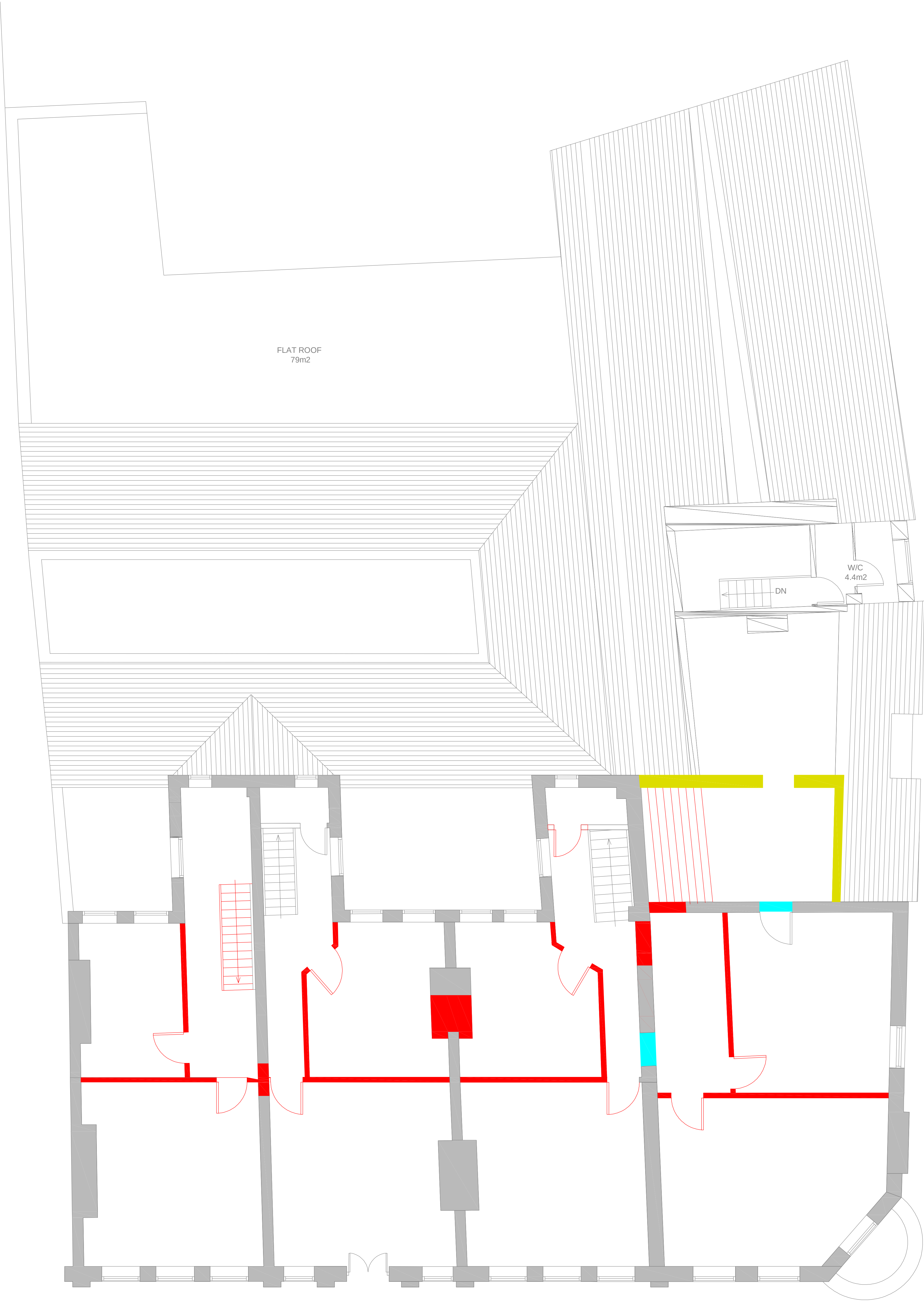
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GENERAL ARRANGEMENT
TOP OF SECOND FLOOR



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Scale: 1/50/A0			



- EXISTING LOAD BEARING WALLS
- WALLS TO BE DEMOLISHED
- BRICK INFILL
- TIMBER WALL

THIRD FLOOR
DEMOLITION PLAN

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THIRD FLOOR

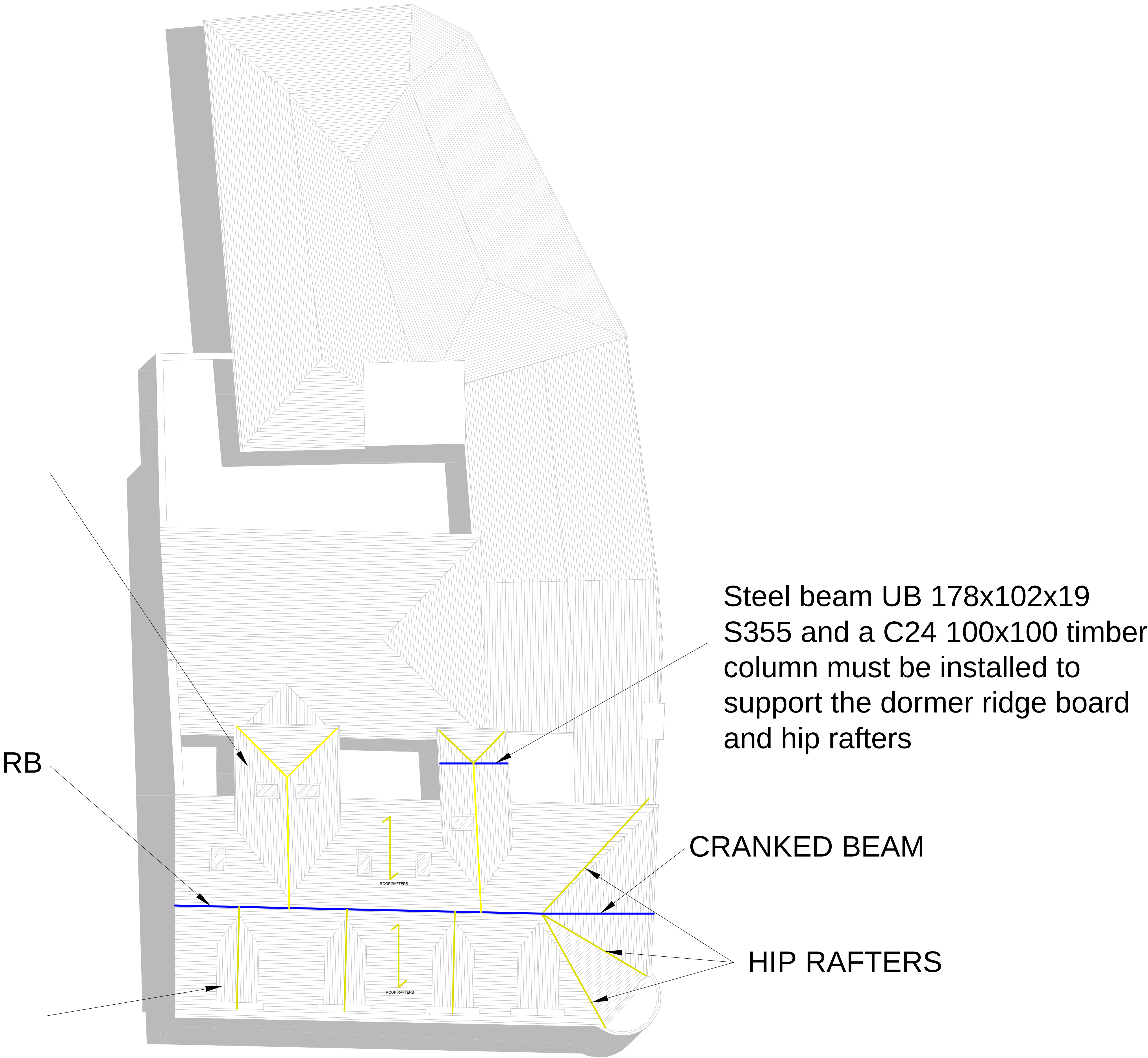


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 **Raisehold**
Structural Engineers

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The rear dormer cheeks and front wall must be positioned on the load-bearing walls for proper support



Front dormer cheeks must be supported by the roof rafters and loft floor joists

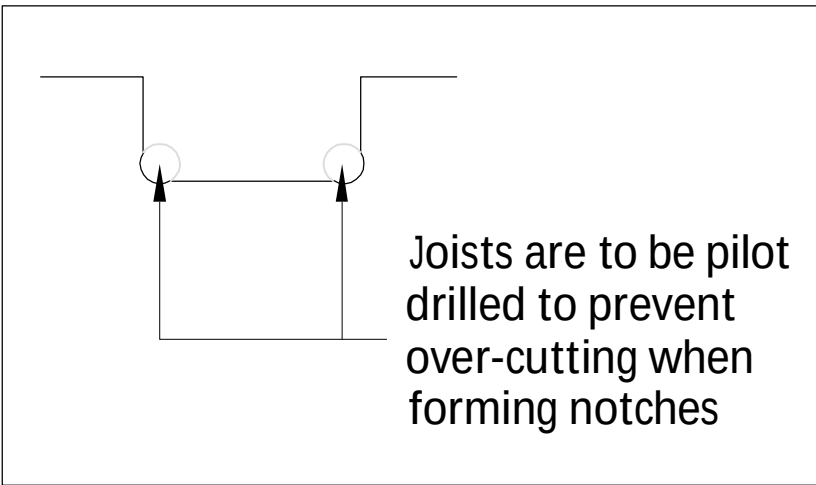
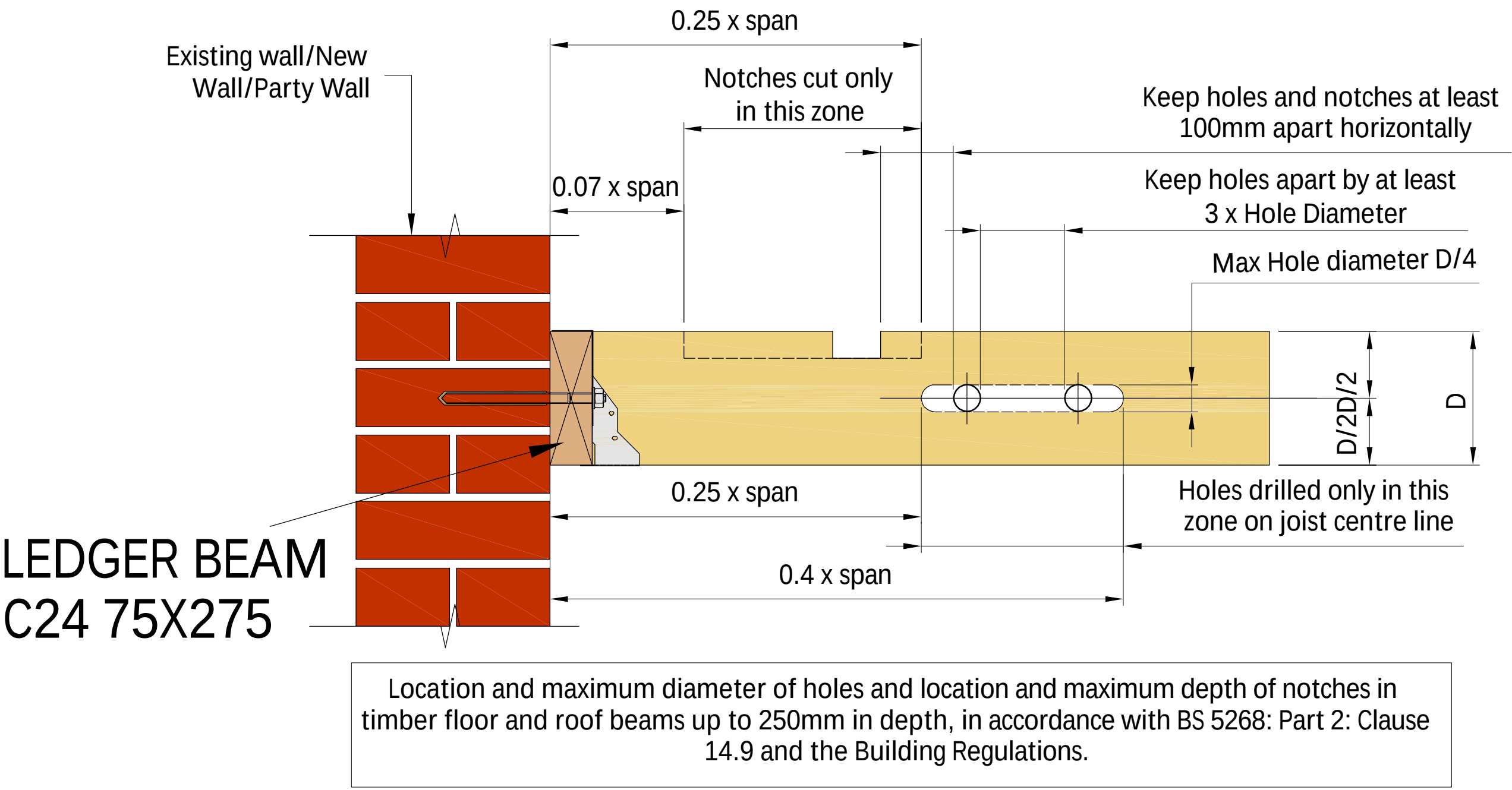
ROOF STUCTURE

RB

INSTALL THE RIDGE BEAM (UB 305X165X40, S355) ENSURING IT IS SUPPORTED AT EVERY LOAD-BEARING WALL; FOR THE FINAL SECTION, CONSTRUCT A CRANKED BEAM THAT RESTS ON THE EXTERNAL WALL TO ACCOMMODATE THE HIP RAFTERS, AND USE THE RIDGE BEAM TO SUPPORT BOTH THE RAFTERS AND DORMER RIDGE BOARDS.

Rafters

FOR ALL RAFTERS, ADOPT C24 75X225 400MM SPACING. USE DOUBLE RAFTERS AS TRIMMERS NEXT TO THE DORMER CHEEKS AND ROOF WINDOWS
INSTALL PURLINS TO PROVIDE ADDITIONAL SUPPORT FOR THE ROOF STRUCTURE



INSTALLATION OF M16 RESIN ANCHORS
FOR FIXING LEDGER BEAM TO 215MM SOLID
BRICK WALL

1. MATERIALS REQUIRED

Resin Anchor System:

- Resin Type: Hilti HIT-HY 270 or Fischer FIS V Plus
- Threaded Studs: M16 x 190 mm (stainless or galvanized steel)
- Washers & Nuts: M16 (matching stud material)

Drilling & Cleaning Equipment:

- Rotary Hammer Drill with 18 mm masonry bit
- Blower & Brush Set (for cleaning holes)
- Resin Dispenser Gun
- Tape Measure & Marker

2. FIXING LAYOUT & SPACING

- Bolt Spacing: 400 mm centers along the beam.
- Staggered Fixing: Alternate "Up-Down" positioning (50-75 mm offset from centerline).
- Minimum Edge Distance: 100 mm from the top of the wall.
- End Fixings: First and last bolts positioned 100 mm from beam ends.

3. DRILLING HOLES

- Mark anchor positions as per the fixing layout.
- Drill 18 mm diameter holes to 125 mm depth into solid brick (avoid mortar joints).
- Ensure holes are perpendicular to the wall (90° angle).

4. CLEANING THE HOLES (CRITICAL STEP!)

- Use a high-pressure air blower to remove dust.
- Insert a steel wire brush, twist inside the hole.
- Blow the hole again to remove loosened dust.
- Repeat if necessary until the hole is completely clean.

5. INJECTING RESIN & INSERTING STUDS

- Prepare the resin cartridge in the dispensing gun.
- Inject resin from the bottom of the hole, slowly withdrawing the nozzle to prevent air gaps. Fill hole approximately 3/4 full.
- Immediately insert M16 stud while twisting to ensure full embedment.
- Ensure stud is centered and protrudes correctly for beam installation. Do not disturb studs during curing time!

6. CURING TIME (BEFORE APPLYING LOAD)

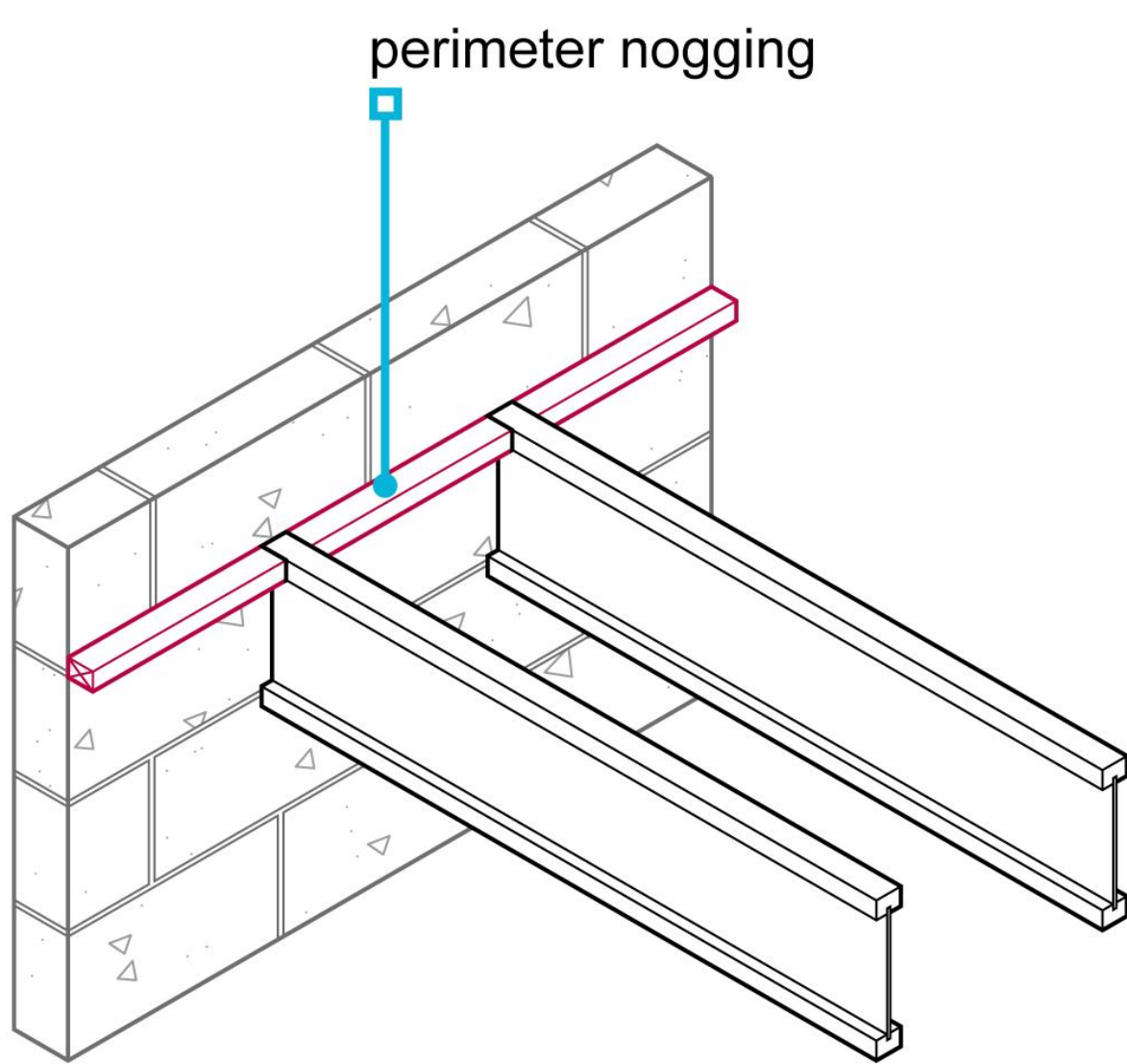
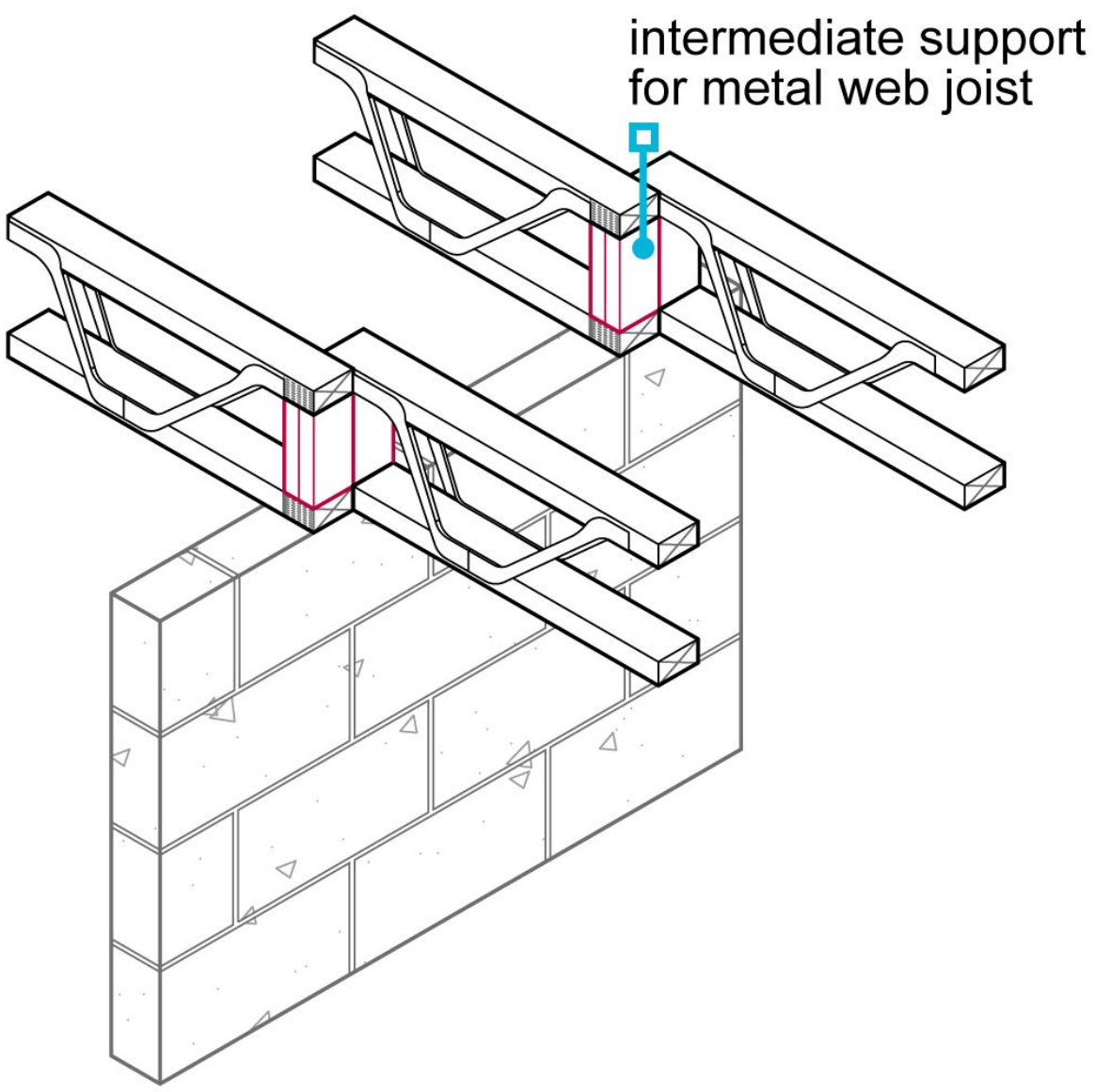
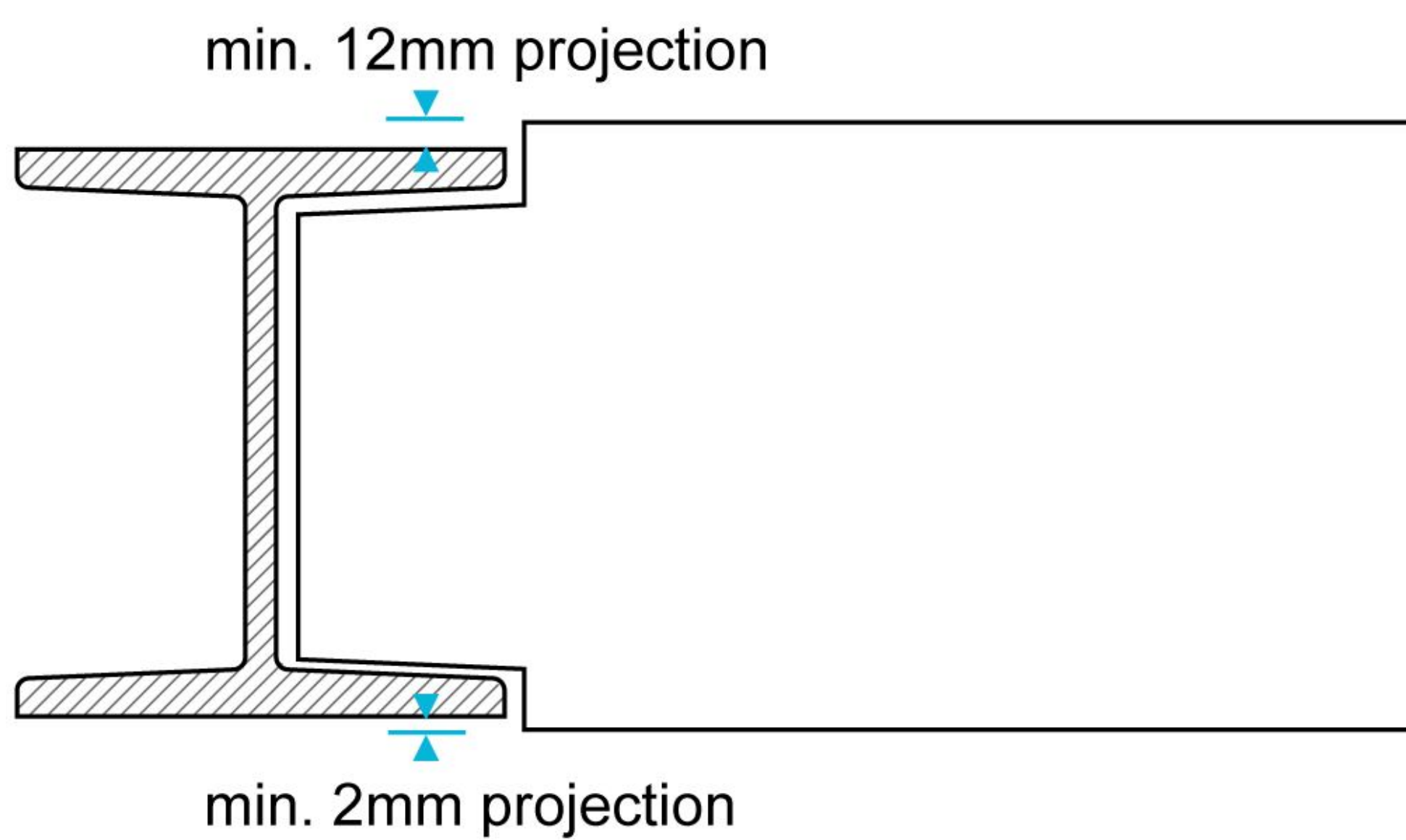
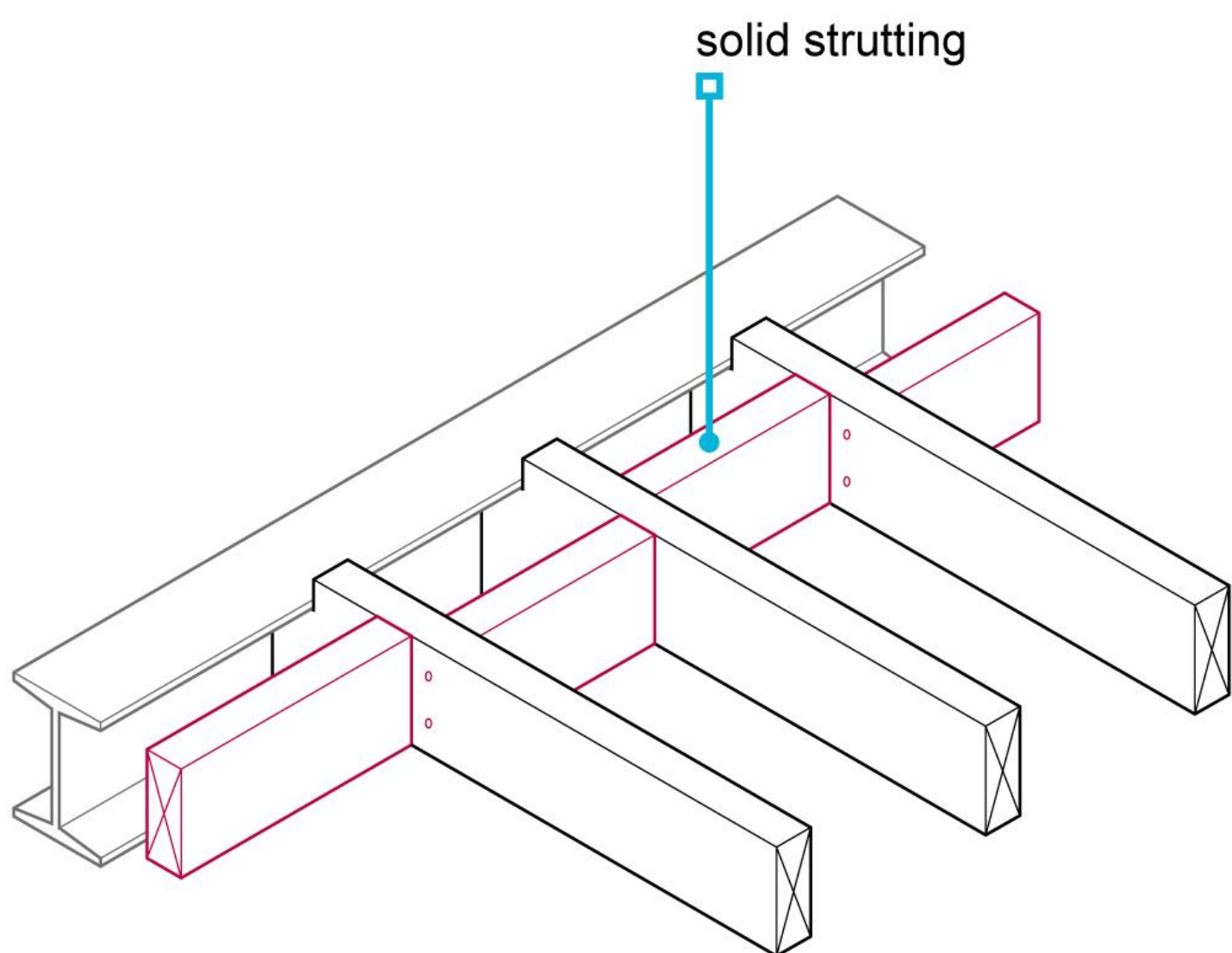
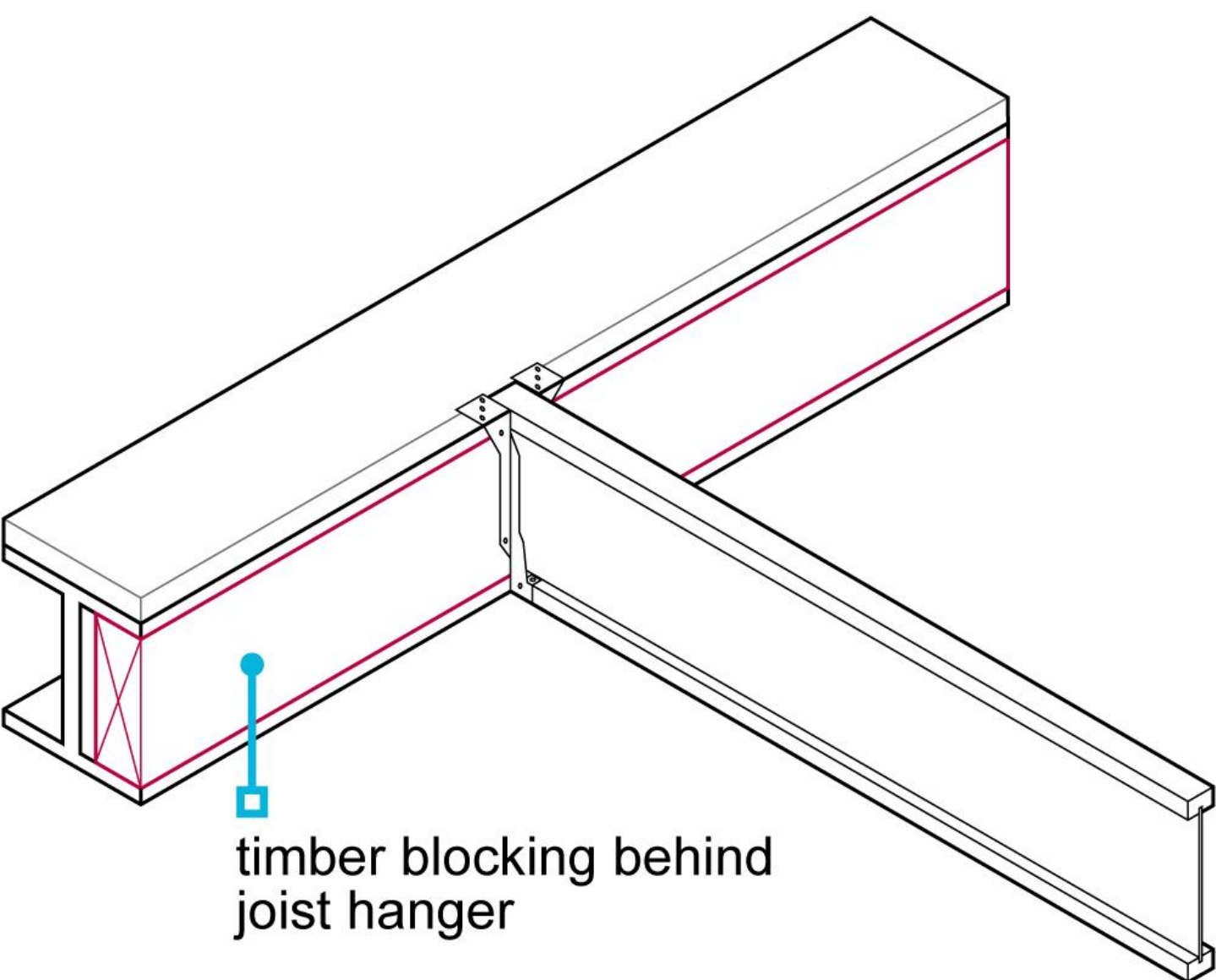
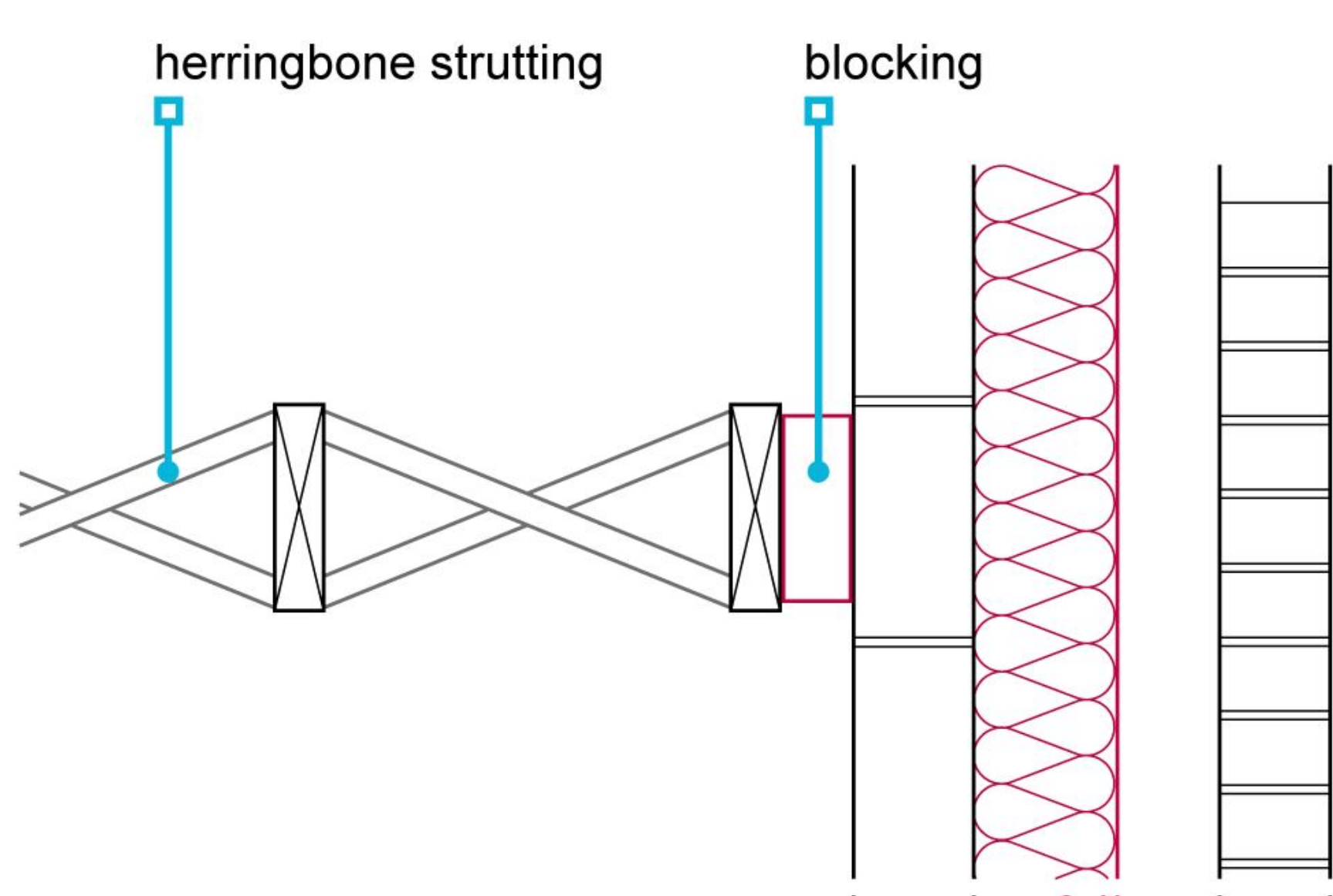
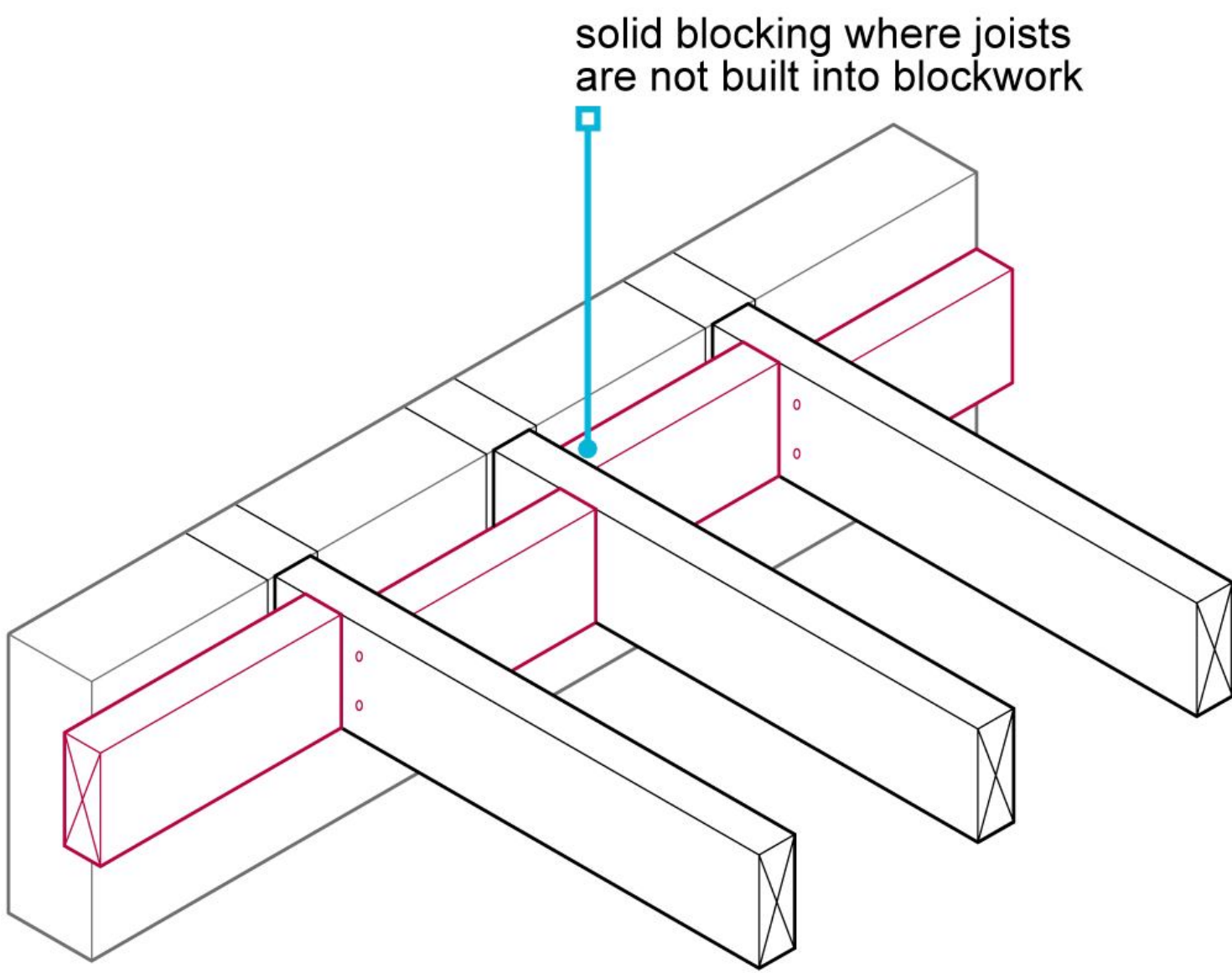
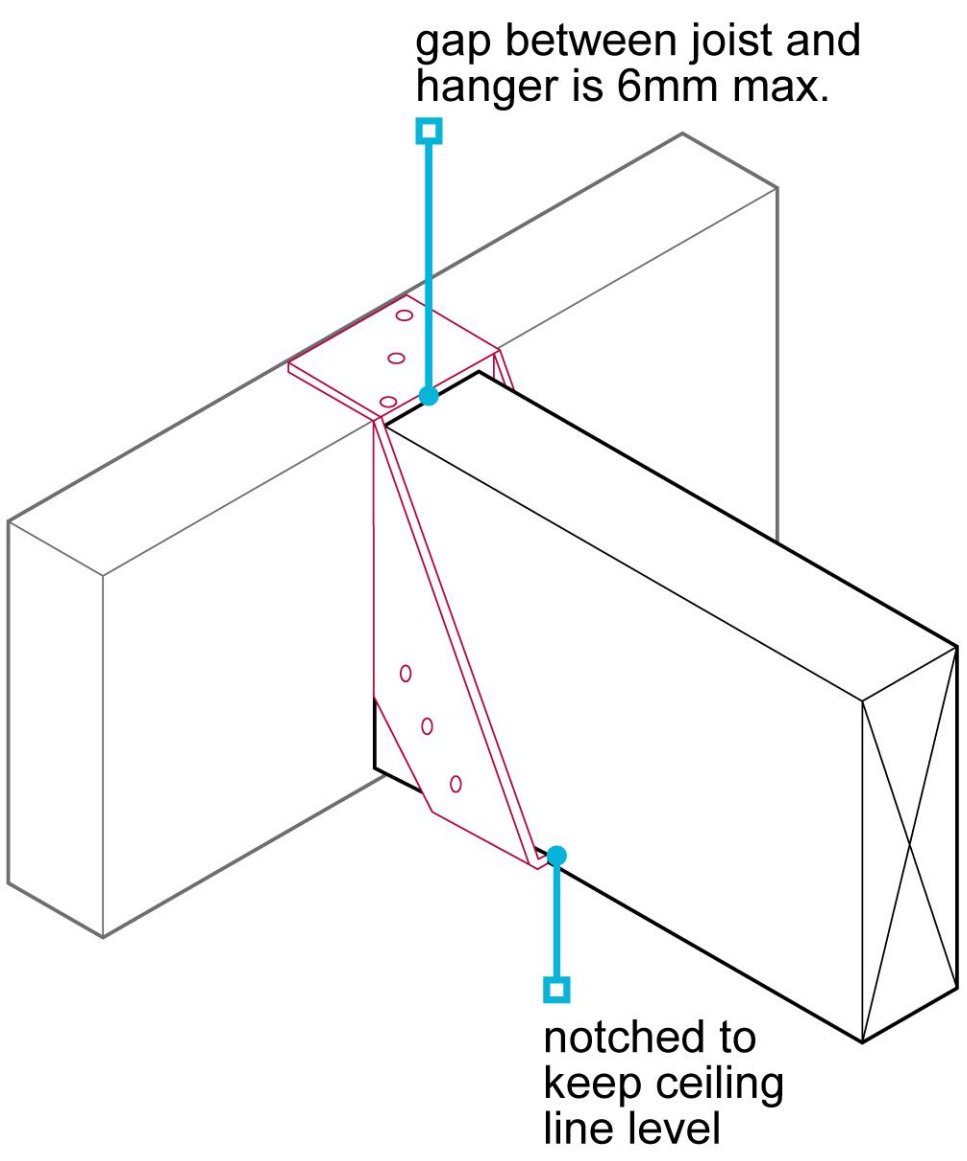
- At 20°C: 30 minutes
 - At 10°C: 90 minutes
 - Below 10°C: Follow manufacturer's guidance (longer curing).
- Do not tighten nuts before full curing.

7. FIXING THE LEDGER BEAM

- Position the beam against the wall ensuring alignment.
 - Place M16 washers and nuts on anchors.
 - Tighten gradually to avoid localized stress.
- Final Check: Ensure the beam is level, bolts are secure, and no over-tightening occurs.

NOTCHES AND HOLES IN TIMBER JOISTS DETAIL

CONSULT ENGINEER FOR ALTERNATIVE MATERIALS BEFORE YOU ORDER



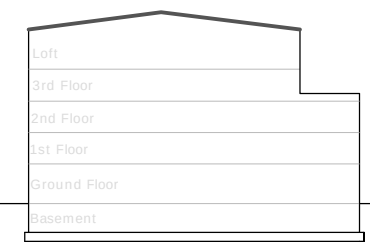
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TIMBER SUPPORTED BY WALLS
DETAILS



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