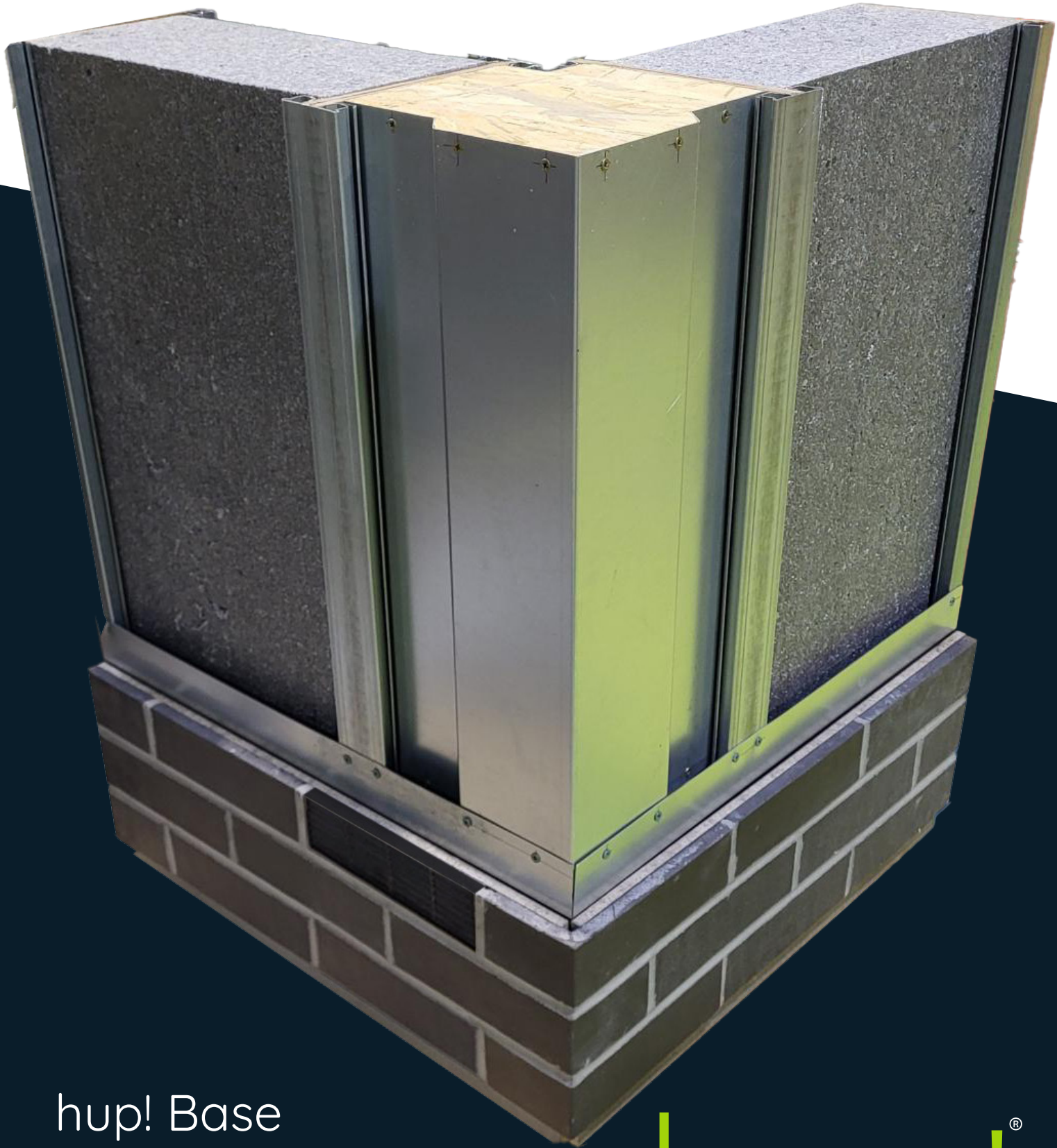




hup! Base Installation Guide

(Ground Screws)

Version 8 | 08.26

hup! - A Building Revolution from Ultraframe

hup![®]
The better way to build

Introduction

Thank you for choosing hup!. This guide is designed to make building as straightforward as possible. Before you commence the hup! build, please take a moment to read the guide. This guide is written on the basis that a qualified surveyor has undertaken correct checks for the capability / structural performance of any existing framework / walls / foundations to verify they are fit for purpose. Any feedback - positive or negative - is welcomed so we can make our systems even better.

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Read ALL the instructions completely BEFORE commencing any work. Understanding these instructions and familiarity with procedures will make the build process much easier and an enjoyable project to undertake. **Not reading the instructions could lead to problems later on in the build process.**

Health and Safety

Site safety is paramount. The Construction (Design & Management) Regulations 2015 apply to the whole construction process, on all construction projects from concept through to completion. Compliance is required to ensure construction projects are carried out in a way that secures health and safety. The installation company shall be responsible for the safety of all of the fitting team, the customer and members of the public.

The Surveyor should have carried out a risk assessment to reduce risk on site and this should have been discussed with you prior to starting.

Always use equipment in line with manufacturers recommendations. Personal Protective Equipment - such as goggles, gloves, mask and ear defenders – should be used when appropriate.

Careful consideration should be given to the safe disposal of all packaging - packaging is predominantly made from recycled materials and can be readily recycled.

For technical support, please contact us on **01200 414607** or email **hupbase@ultraframe.co.uk**.

For everything you need to know about hup!, including guides and explainer videos, visit **www.trade-hup.co.uk**

What's in the box?

The kit is supplied with a location plan, a quality control checklist for the box in which this guide arrives and, of course, this installation guide. The location plan is used to match individual components to their respective positions.

Base Support Parts



Ground Screw Attachment
Base to ground screw



Jacking Leg & Plate
Levelling the base

Supplied Fixings



(a) 10 x 110 Hex Head Anchor
Back cill to host wall



(b) 10 x 50mm Hex Head Bolt
Base to ground screw



(c) 10 x 110 Hex Nut & Bolt
Splitter beam to edge beam



(d) M6 x 60 Nut & Bolt
Floor joist to hanger



(e) 4.8 x 32mm Csunk Self-drilling Screw
Skirt to edge beam



(f) 4.8 x 100mm Csunk Self-drilling Screw
Base tray to floor joist



(g) 10 x 19mm Hex Head Self-drilling Screw
Base tray to edge beam

Ancillary Materials



Damp Proof Course (DPC)



Weed Suppressing Membrane



Brick Slips Corners / Inline



Brick Slip Adhesive



Brick Slip Mortar



Foil Tape

Setting Out from the Host Wall

Setting the base out

This section explains how to establish the correct base position relative to the host wall. Before assembly, check the wall alignment and identify any deviations that may affect the base location. Any discrepancies shall be accounted for during setting out.

Setting Out Point (SP)

To ensure the conservatory or extension is installed square and plumb, the alignment of the host wall(s) must be checked before setting out the base.

Wall leaning outwards

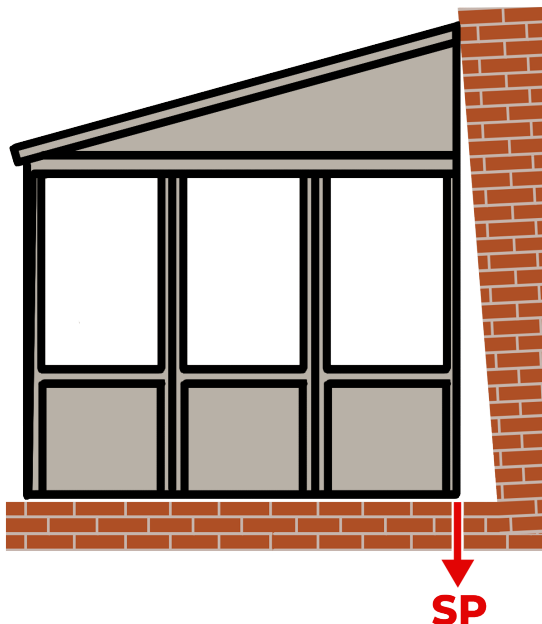
If the host wall leans outwards, suspend a plumb line from the highest point where the roof will meet the wall. The point at which the plumb line meets the ground establishes the Setting Out Point (SP). Set out the base from this point. Any resulting gap between the base and wall shall be made good using suitable packers (not supplied).

Wall leaning inwards

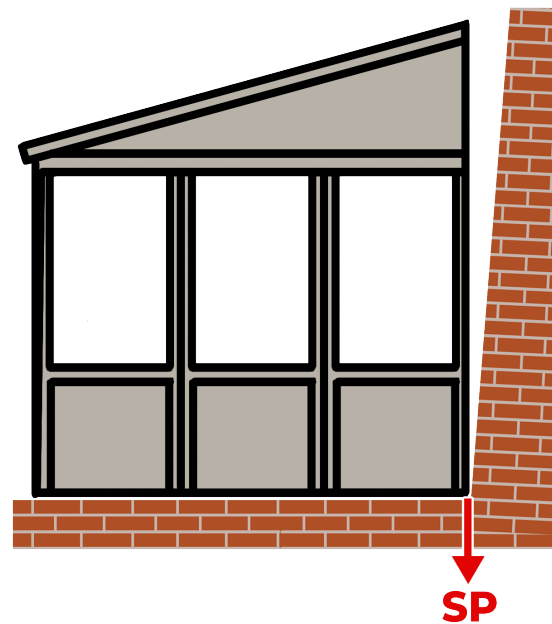
If the host wall leans inwards, set out the base directly from the base of the wall. This location becomes the Setting Out Point (SP). Any gap at the top of the wall shall be accommodated using suitable packers (not supplied) to ensure the wall is installed plumb and correctly aligned.

Note Any additional trims to cover large gaps are not included with the base or conservatory/extension and should be purchased separately. If house is leaning outwards, you may need to specify extra skirting when you order.

House wall leaning outwards

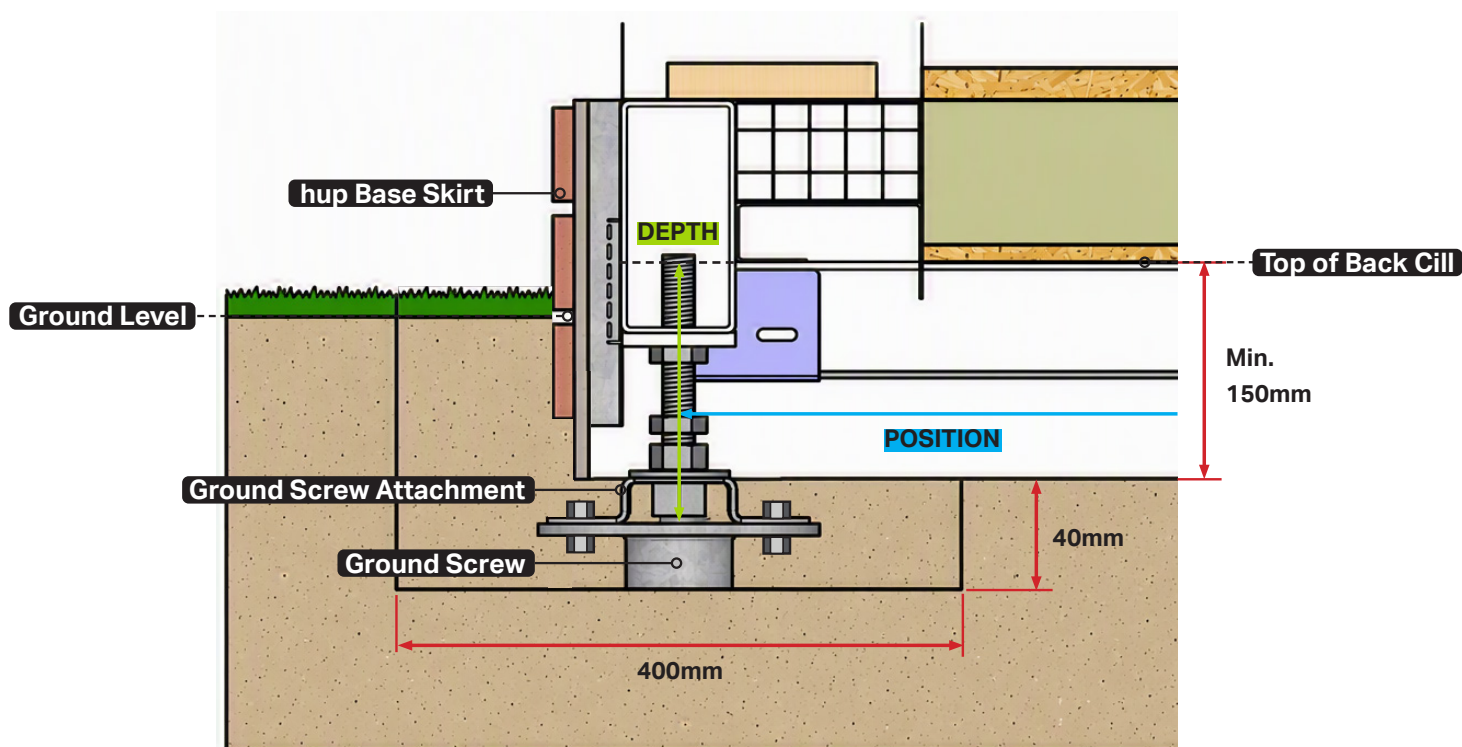


House wall leaning inwards



Preparing the Site: Ground Screws

This page provides the site preparation and installation requirements for a hup! Base on ground screws.



Installation Requirements

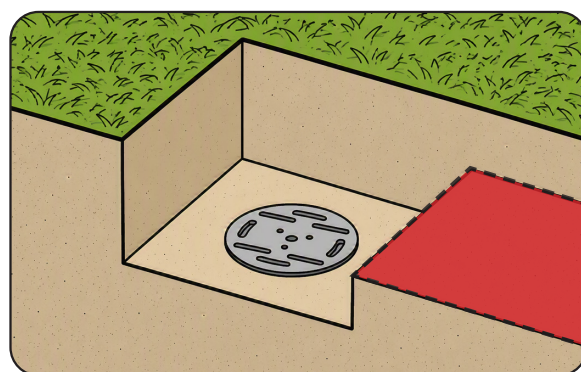
- Install ground screws at the positions shown on the screw plan.
- Position tolerance: ± 50 mm.
- Depth tolerance: ± 25 mm.
- Excavate a minimum 400 mm $\times$ 400 mm area around each ground screw.
- Maintain a minimum 40 mm clearance beneath the ground screw head for bolt installation and tightening.
- Min. 150mm excavation for airflow / ventilation
- Ground screws must finish below ground level to avoid obstructing the hup! Base Skirt.

Positional Variations

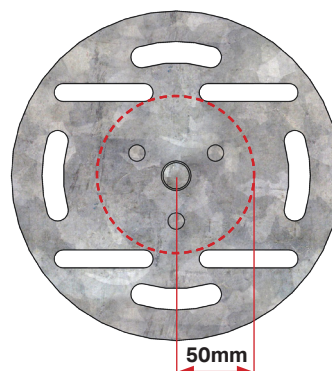
Any ground screw moved more than 50 mm from the position shown on the screw plan must be corrected by the ground screw supplier. Deviations greater than 50 mm are not permitted without approval.

Structural Compliance

The ground screw supplier shall provide structural calculations and certification demonstrating compliance with the applicable design loads and Building Control requirements.



IMPORTANT Cover all disturbed ground beneath the building footprint with the supplied weed suppressant membrane.



England & Wales Ground Screw



1. Initial Quotation

2. Site Visit

3. Order Confirmation

4. Installation

Installer

Provide the following information

- Ground depth: Internal unfinished house floor and the ground. (every 1m for sloping ground)
- Base setout of the finished external wall in relation to host wall
- Skirt type
- Identify drains, manholes
- Photos of site

- Fill in the Ground Screw Company site request form
- Arrange a date for site visit
- Inform homeowner of date

- Send order details to hup! as outlined in Initial Quotation
- Check order confirmation details
- Sign and return order confirmation
- Order confirmations will not be accepted without base setout datums on the host wall
- Send ground screw plan to ground screw company

- Mark the unfinished house floor level (datum) on the back wall
- Excavate c.300mm down from this level
- Mark the edge of the finished external walls on to the host wall
- Build the steel base and insulated floor

hup!

Provide the following

- A price for your hup! base
- An indicative ground screw count

- Final design checks
- Send order confirmation
- Liaise with Ground Screw Company to make any changes to the base design
- Design a screw plan within 7 days
- Send screw plan to GBGS (if applicable) and installer
- Inform all parties of the delivery date

- Deliver the base to site on the agreed date

Ground Screw Company

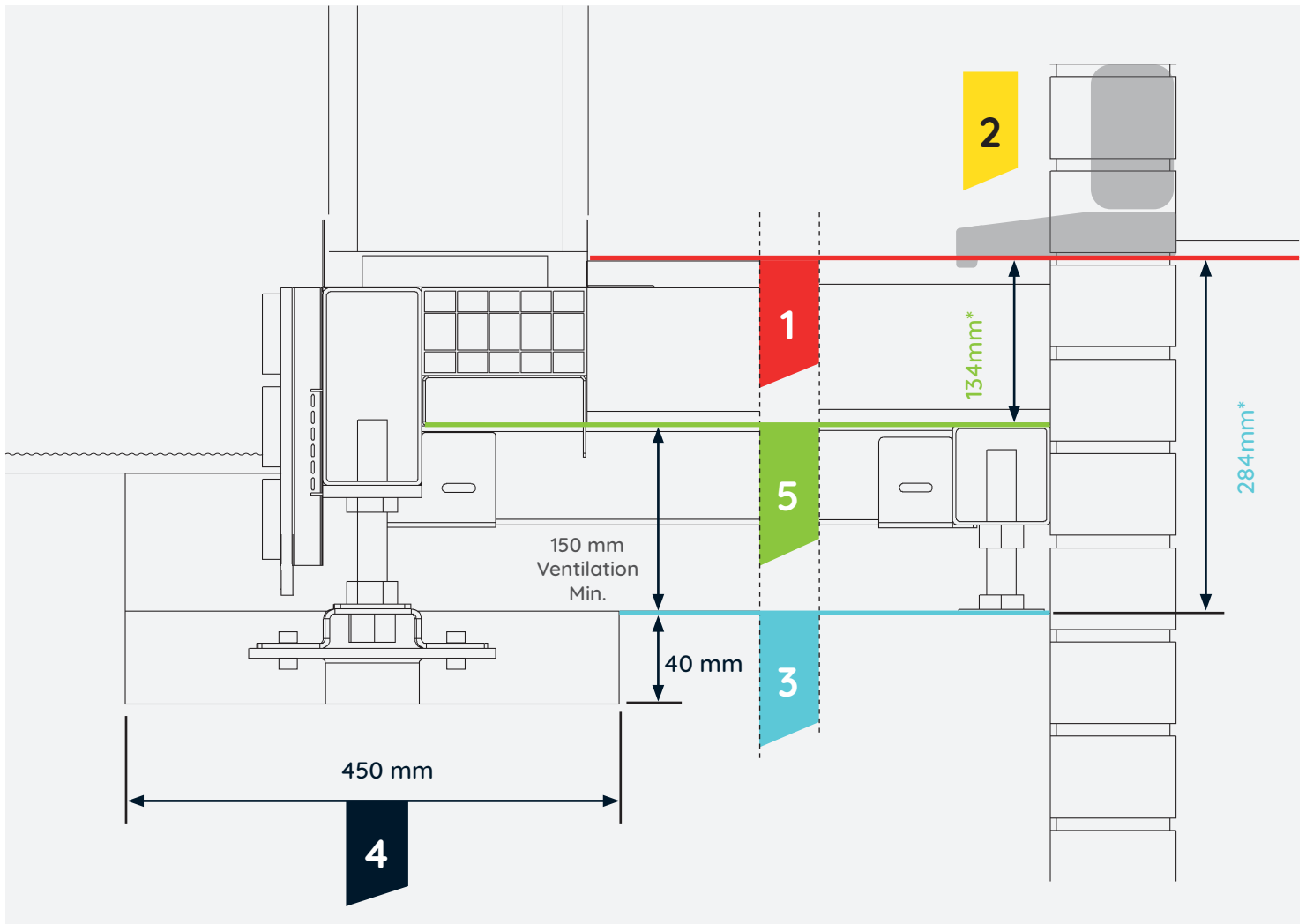
Provide a quote for your ground screw installation and site visit based on indicate screw count.

- Provide a pull-out test report for Building Regs application
- Inform you of any potential issues and additional costs
- Provide a quote for excavation and base installation if required. Please note Ground Screw Company will NOT provide skips if they are needed

- Book the ground screw installation
- Assess ground screw plan
- Liase with Ultraframe over ground screw plan

- Fit the ground screws
- Dig pocket holes 40mm deep around the ground screws for fixing later

Ground Screw Installation



1

SET THE DATUM

Mark the unfinished house floor datum on the exterior of the house wall.

This is the level of the house floor without any floor tiles etc i.e the top of the screed. This can be done in chalk or using tape (top of tape is datum).

2

SETOUT

Mark the edge of the finished wall datum onto the host wall.

This can be done in chalk. All walls that project from the house wall must be marked. If this is not marked out on the house wall - Ground Screw Company will abandon the visit and you will be charged.

3

EXCAVATION

Excavate c.300mm below the datum.

The top soil may be distributed around the site or removed. This step may not be needed if ground is already 300mm below finished floor level, or as ground slopes away.

*Dimension shown is indicative and will vary depending on the specified floor build-up and finished floor level.

4

GROUND SCREWS

Install the ground screws with pocket holes.

The ground screw plan indicates the precise location.

Pocket holes must be at least 40mm deep and allow for access to connect the steel base plates.

5

BASE

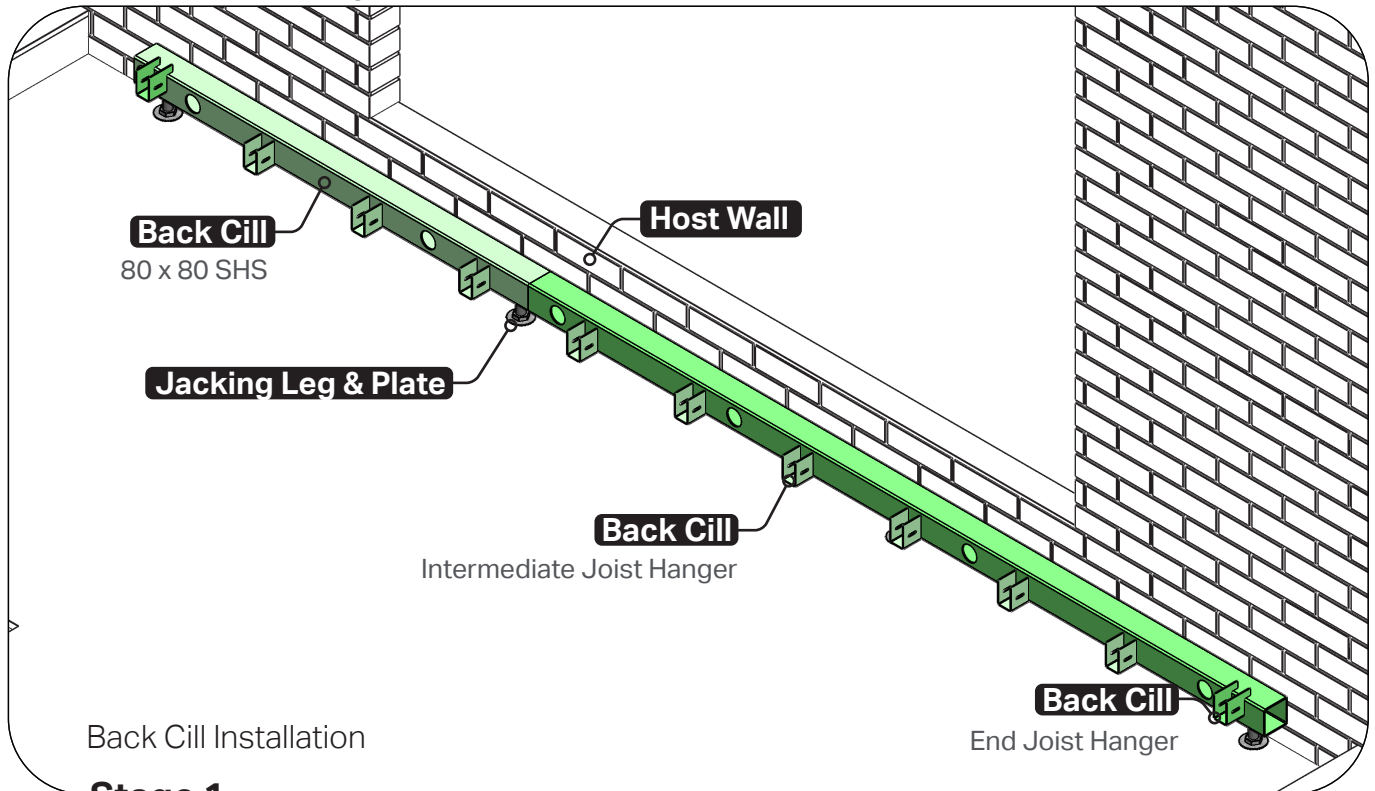
Install the steel base, insulation and chipboard floor.

Position the back cill 134mm* below the unfinished house floor. The steel frame sits 22mm below to allow for the chipboard floor.

*Dimension shown is indicative and will vary depending on the specified floor build-up and finished floor level.

hup! Base: Installation Sequence

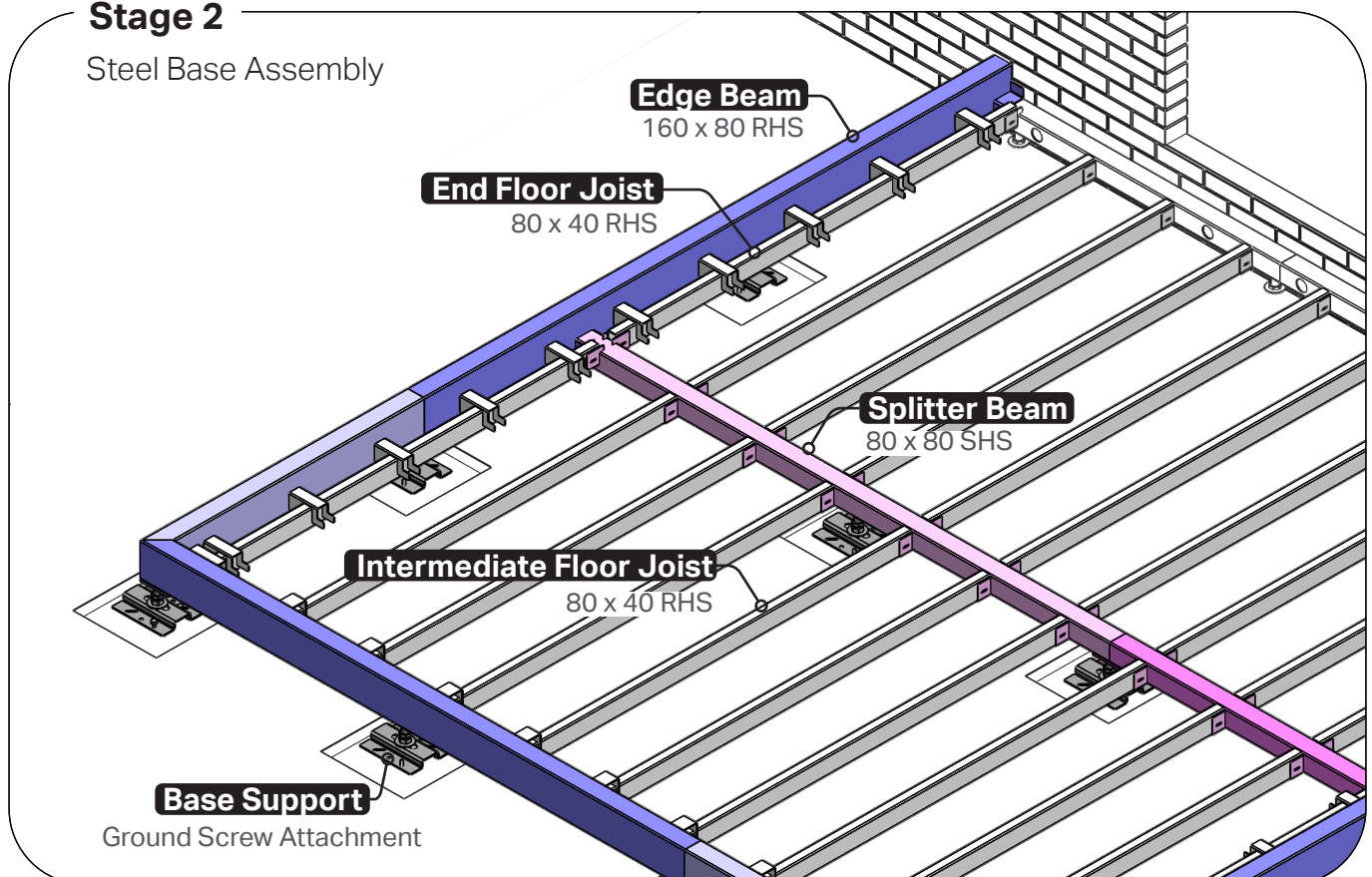
Base assembly

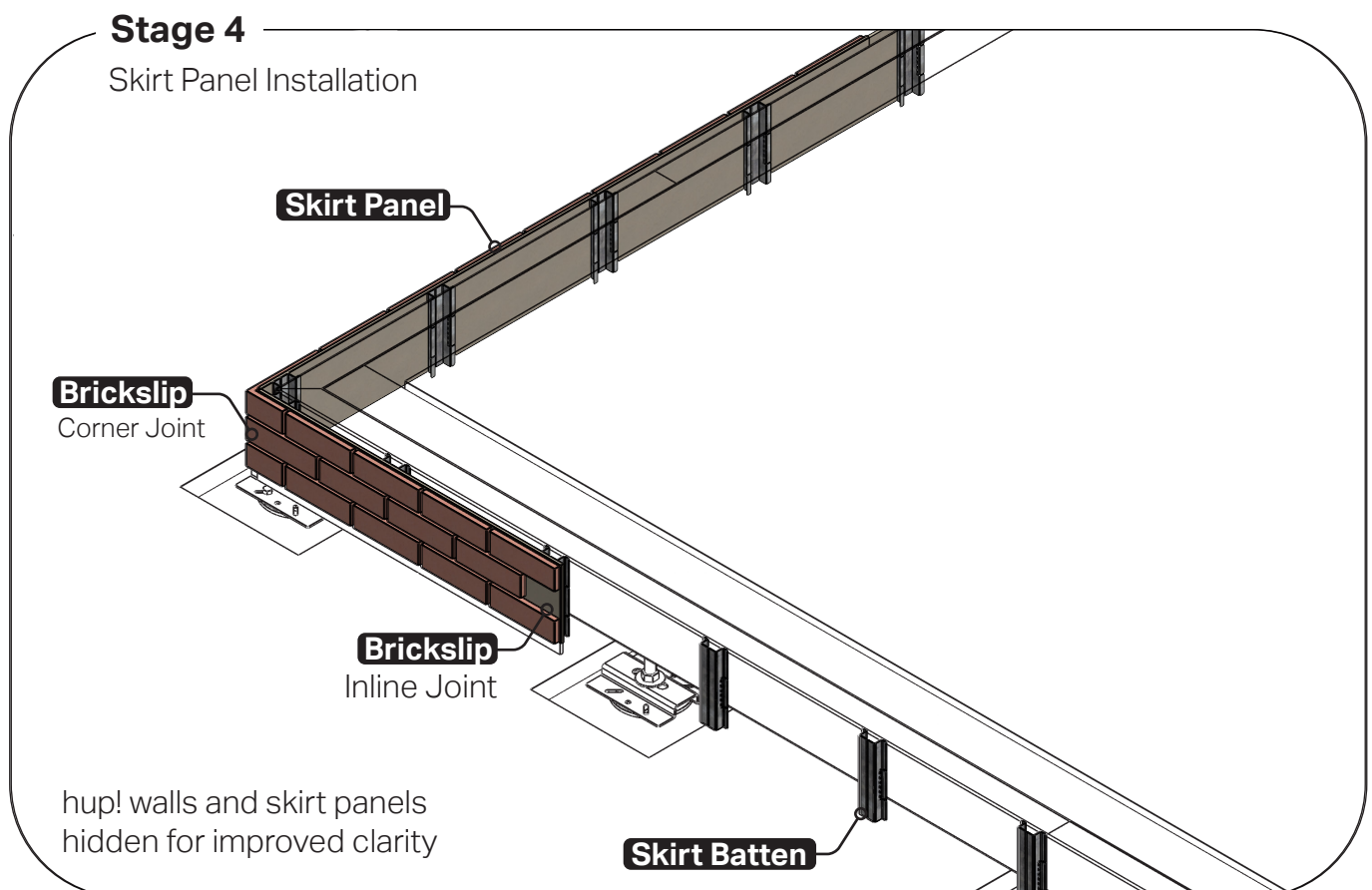
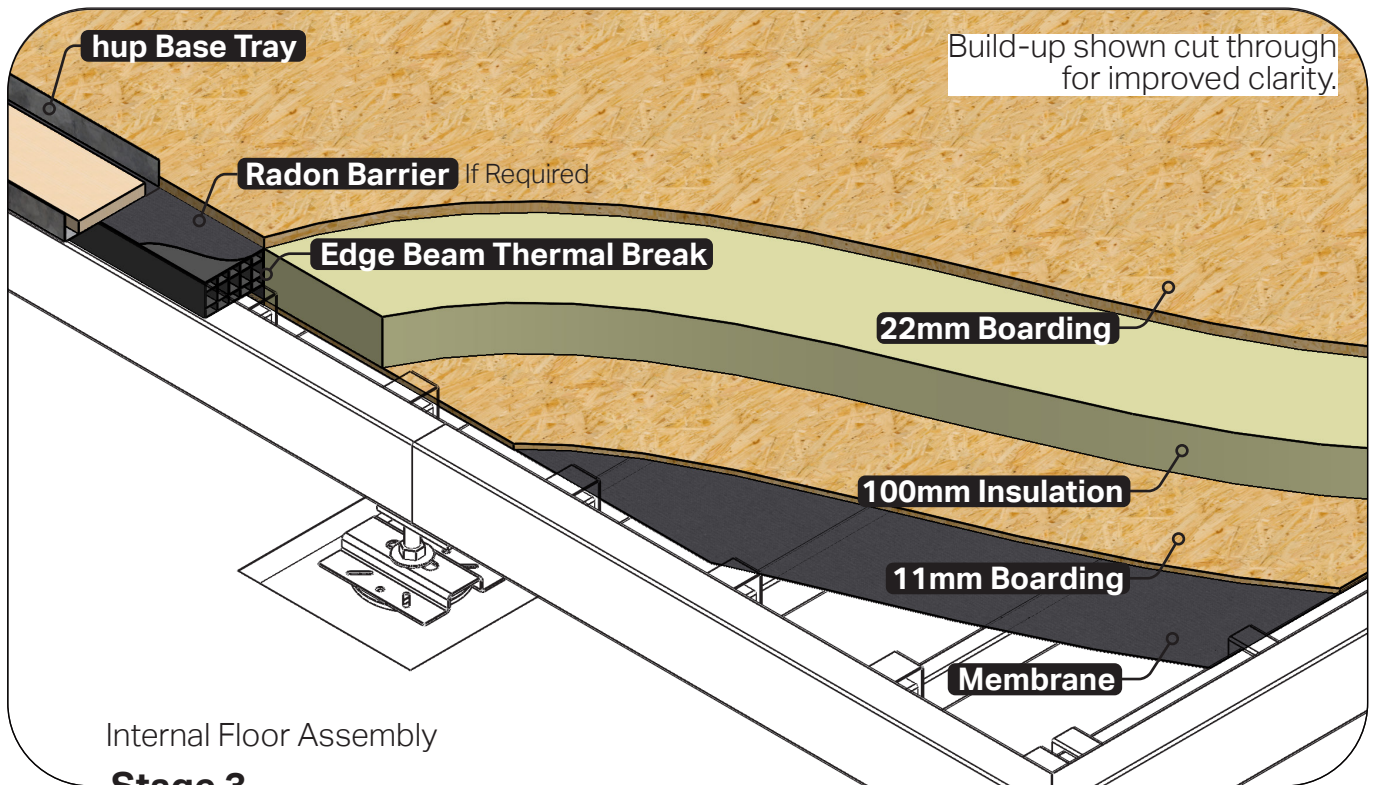


Stage 1

Stage 2

Steel Base Assembly





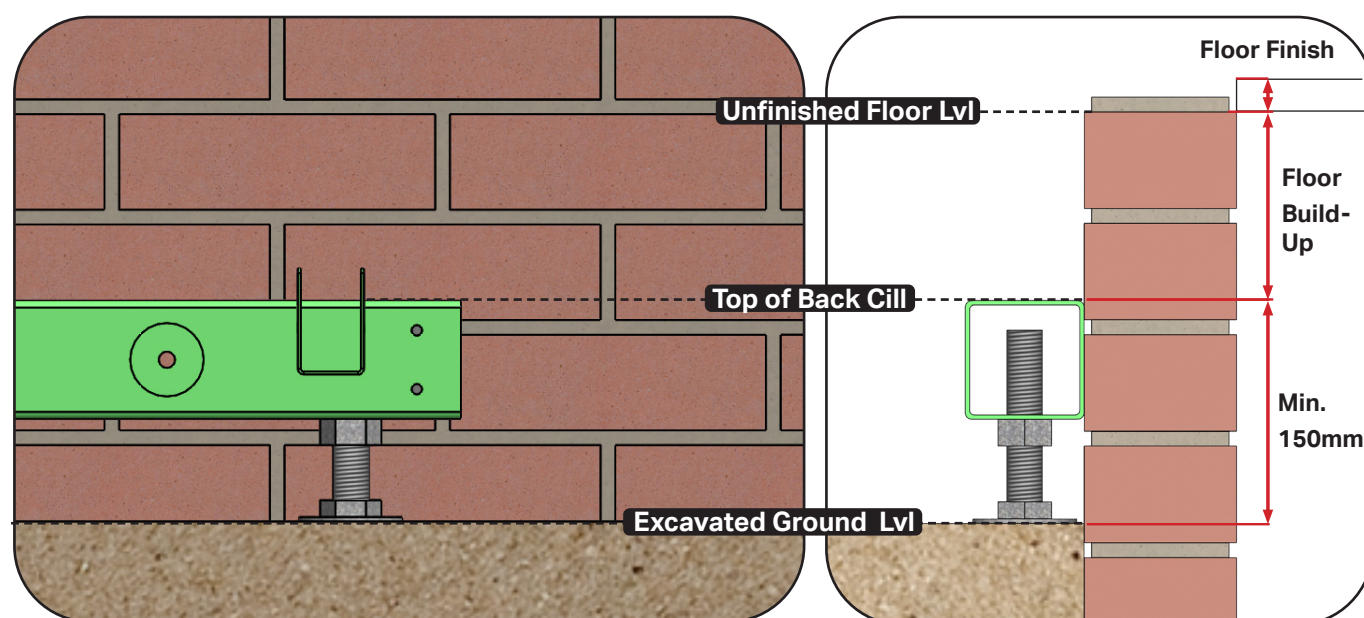
Back Cill Installation

To assist with identifying base components and simplify the installation process, the key components of the base are numbered. A base labelling map will be supplied that corresponds to the identification numbers welded to each member of the base, to assist in setting out before fitting.

1.0 Screw the lock nuts onto the **jacking legs**, then screw the **jacking legs** into the welded nuts which are located on the underside of the **back cill section (80 x 80 SHS)**. Position the **load-bearing plates (70mm circular washers)** beneath each **jacking leg**. Ensure all **jacking legs** are supported on a firm, stable surface to prevent settlement or sinking. e.g. paving slabs or blocks.



1.1 Position the **back cill section (80 x 80 mm SHS)** against the house wall in the location shown on the setting-out drawings. Once positioned, adjust the section to the height specified on the site drawings to accommodate the required floor build-up. Ensure the section is level across its full length before proceeding with installation.



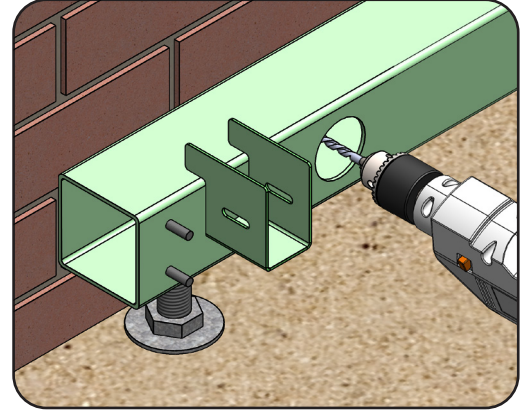
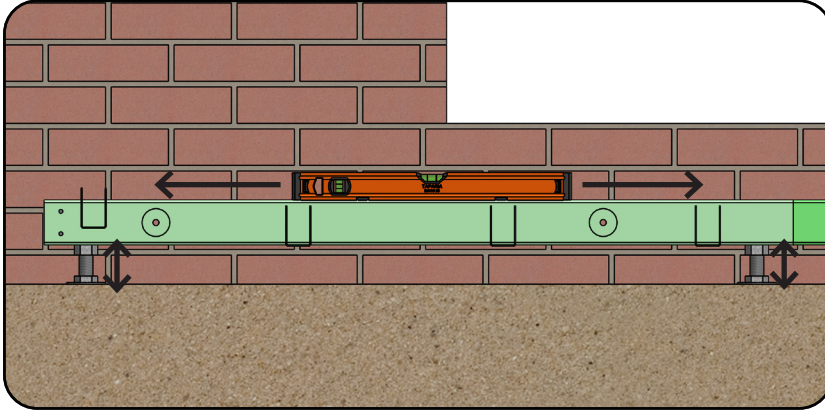
Floor Type	Floor Build-Up (Unfinished floor lvl to top of back cill)
22mm Boarding	134mm
75mm Screed	187mm
22mm Boarding Scotland	154mm
75mm Screed Scotland	207mm

IMPORTANT When setting the extension finished floor level to align with the existing house finished floor level, allowance must be made for the thickness of the proposed floor finish.

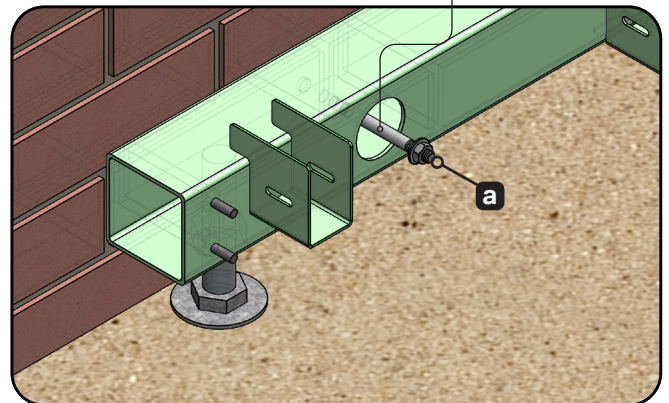
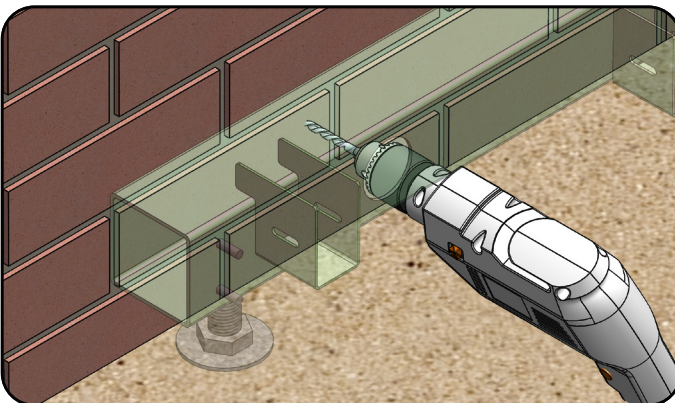
The **back cill section (80 x 80 mm SHS)** is intentionally shorter than the overall base width as part of the hup! Base design. It is positioned lower than the **edge beam sections (160 x 80mm RHS)** to accommodate the **lower boarding** and **insulation** within the floor construction.

If the **upper boarding** is installed below the property's **damp-proof course (DPC)**, a suitable **vertical damp-proof barrier** must be provided to maintain continuity of damp protection between the existing property and the extension floor build-up.

1.2 Check that the **back cill section (80 x 80mm SHS)** is level along its full length. Using the fixing holes as a guide, drill pilot holes into the masonry with a 10mm masonry drill bit.

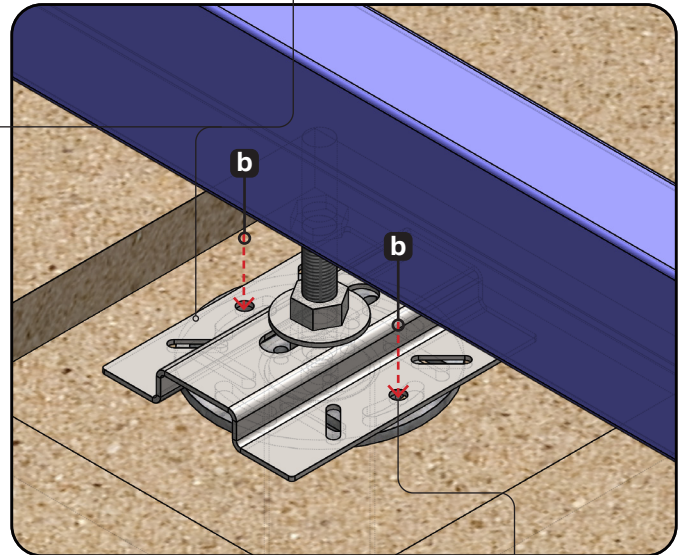
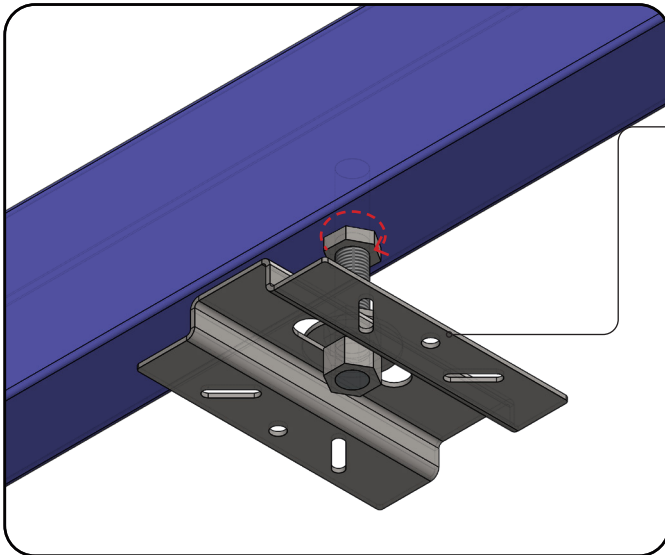
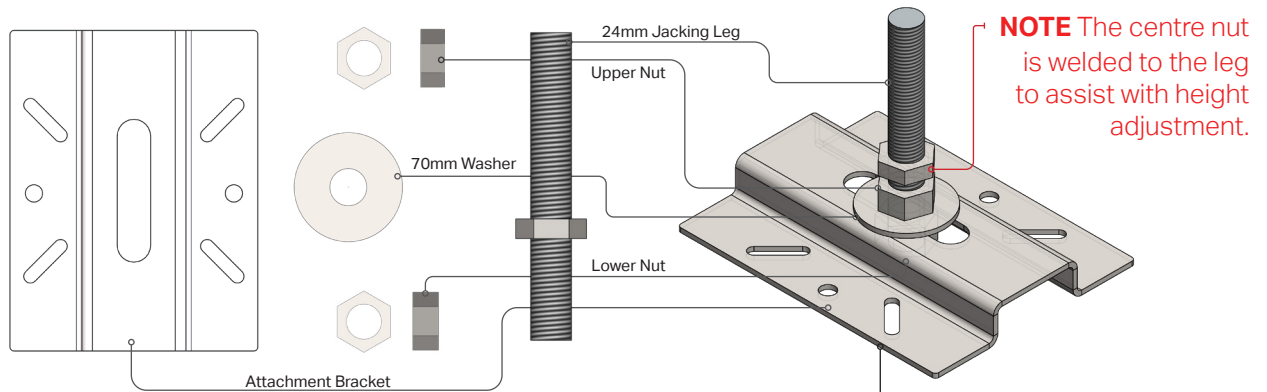


1.3 Remove the **back cill section (80 x 80mm SHS)** and re-drill pilot holes to a depth of 70mm using a 16mm masonry drill bit. Using **(a) 10 x 110 Hex Head Anchors**, insert the anchor sleeve into the holes and remove the bolts. Replace the **back cill section (80 x 80mm SHS)**, insert bolts and tighten using a 17mm socket.

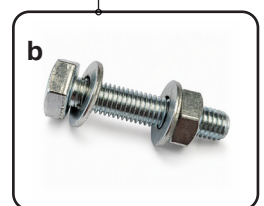


Steel Base Assembly

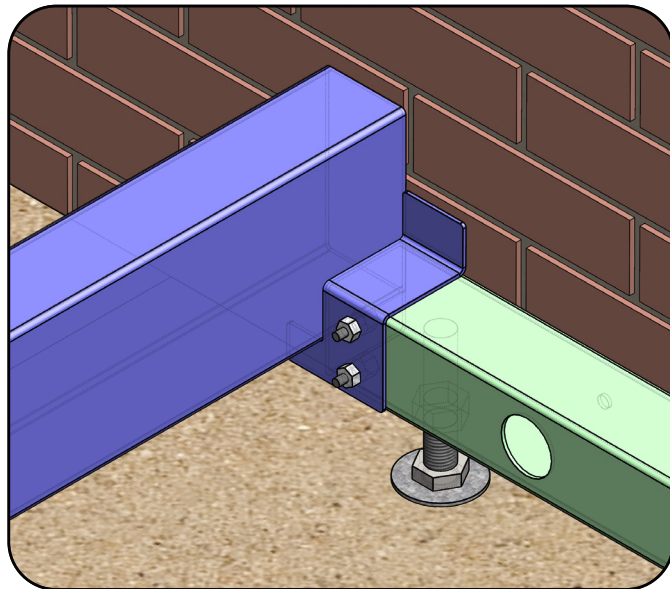
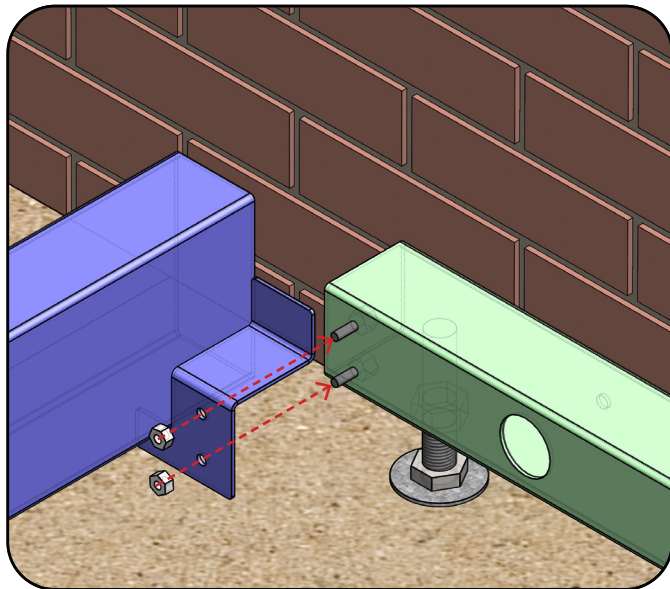
2.0 Using the pre-assembled **ground screw attachment**, screw the jacking leg into the welded nuts located on the underside of the **edge beam sections (160 x 80mm RHS)**.



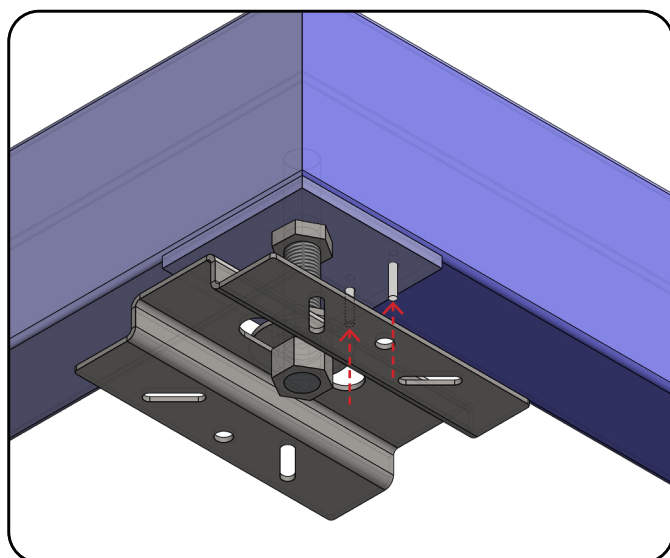
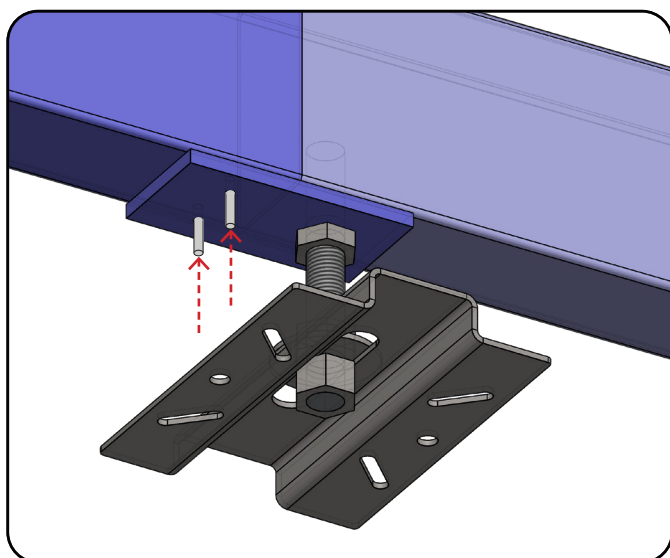
IMPORTANT: Until the base has been permanently secured, there is a risk of movement or uplift, which may cause it to disengage from the ground screws. To minimise this risk, it is strongly recommended that **2no. (b) 10 x 50mm Hex Head Bolts** are installed through both the **ground screw attachment** and the **ground screw** at this stage.



2.1 Fit the **edge beam side sections (160 × 80 mm RHS)** to the **back cill section (80 × 80 mm SHS)** by locating the corner brackets over the pre-welded studs. Secure each connection using the nuts supplied, but do not fully tighten them at this stage to allow for final alignment during assembly.

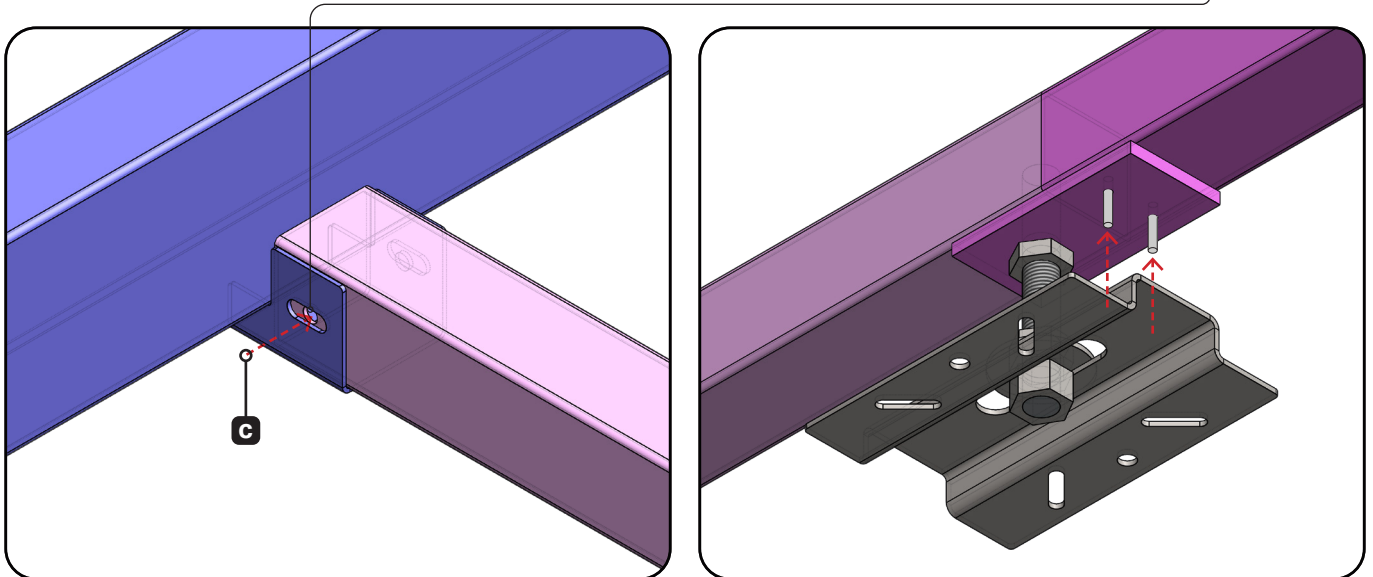
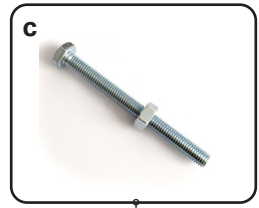


2.2 Install the pre-assembled **ground screw attachment** to the **edge beam front section (160 x 80mm RHS)** at joint locations using the same method. Inline joints and corner joints will include a bearing plate which allows the adjacent beam to be supported at the junction. The pre-welded studs assist with locating and aligning the beams at the joints. Once positioned, secure the beams using the supplied nuts. Beams should be sequenced to ensure the beam with the bearing plate and **groundscrew attachment** are installed first.



Steel Base Assembly

2.3 Install the pre-assembled **ground screw attachment** to the **splitter beam section (80 x 80mm SHS)** using the same method. Position the **splitter beam** within the 'u' support brackets / hangers located on the edge beam. Once correctly aligned, secure the splitter beam to the hanger using **(c) 10 x 110 mm Hex Nut and Bolt**.



2.4 Ensure that the **lower locking nut** is raised and the **70mm washer** can move freely. Starting at one corner and working around each support position, adjust the **24mm jacking legs** so that they are fully supporting the weight of the steel base. Use the **welded locking nuts** to make incremental height adjustments as required, regularly checking the level of the base with a spirit level throughout the process.

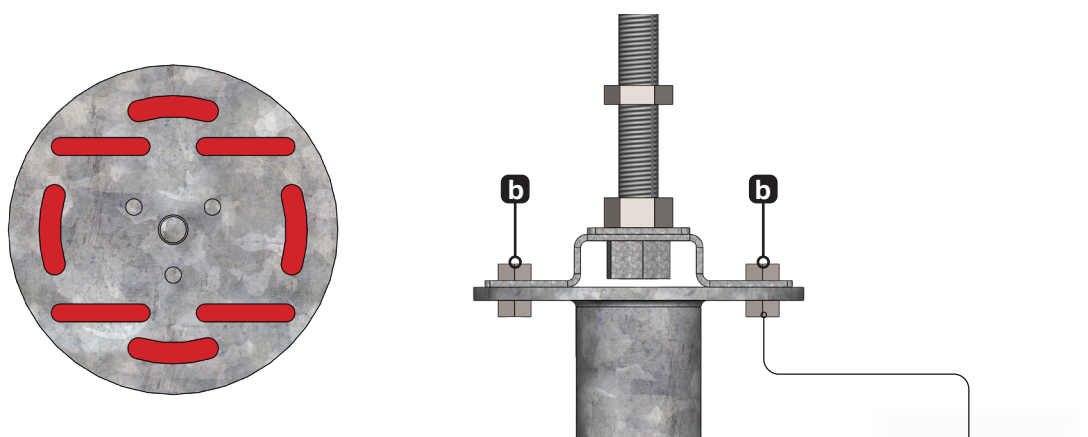
NOTE: The centreline of each jacking leg must be within 50mm of the centreline of the corresponding ground screw. If this tolerance cannot be achieved, the ground screw must be repositioned before proceeding.

Ensure the base is square and level, then tighten all joints. Recheck the level and tighten the lock nuts on the jacking legs and ground screw attachments to secure the final position.

The base should now be level, square, and ready for the next stage of installation.

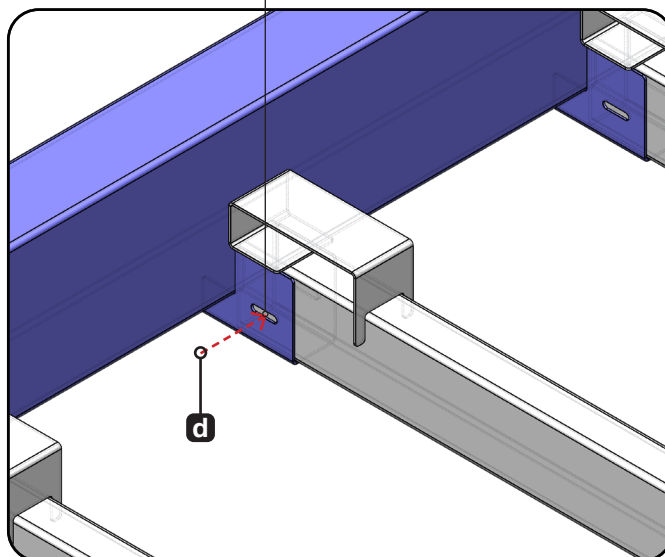
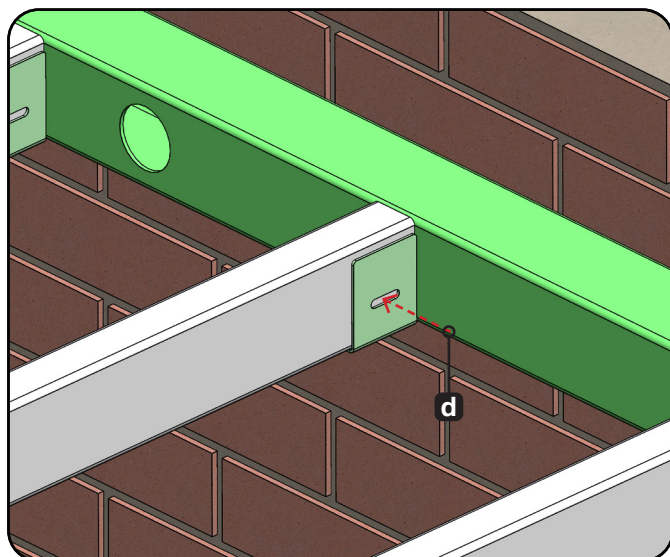
2.5 Once the base is level and fully supported by the ground screws locate the **ground screw attachment** to ensure the **4no. (b) 10 x 50mm Hex Head Bolts** can be used to fix it down. Rotate the **ground screw attachment** and adjust its position as necessary to achieve the optimum fixing arrangement. The fixings must pass through four of the eight highlighted slots. The **ground screw attachment** should remain centrally positioned over the ground screw, with the bracket in full contact with the top of the **ground screw**.

NOTE For ground screws that are on a slight angle, use the packing shims supplied to ensure all points of the plate are in contact with the ground screw. The weight of the base still needs to be transferred through to the ground screw via the leg.



2.6 Fix the **ground screw attachment** to the **ground screw** using **4no. (b) 10 x 50mm Hex Head Bolts** supplied. Tighten using the nuts making sure the washer has been positioned between the nut and the underside of the **ground screw**. Lock into position using the lower locking nut to secure the entire leg.

2.7 Slot the **floor joists (80 x 40mm RHS)** into the welded 'u' support brackets / hangers, and secure using the supplied **(d) M6 x 60 Nut & Bolt**. Tighten with 10mm spanner. The joist supports, if supplied, should be fitted centre of the joist length and the jacking legs should be adjusted and locked at this stage.



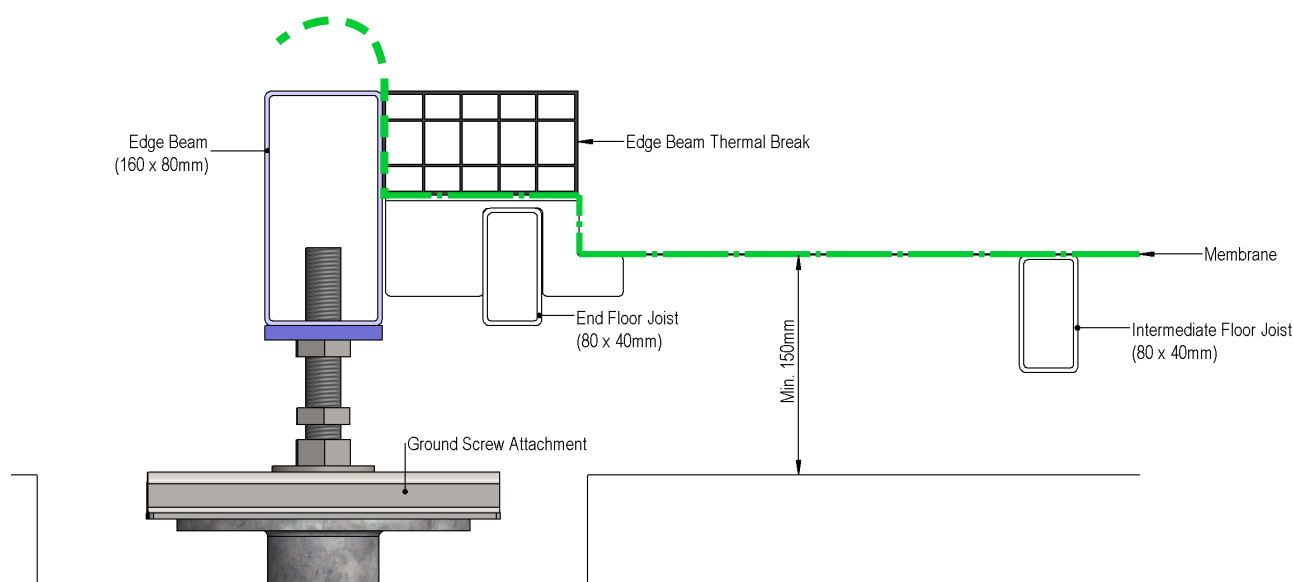
Internal Floor Assembly

NOTE This is a floating floor, so if finishing with a floor tile or similar, we recommend seeking advice. If extra fixings are required, long self-drilling screws are available (price on request).

Tip: It is advised to make a note of the joist centres so that lines can be drawn on the flooring to guarantee the correct fixing down positions into the steel joists.

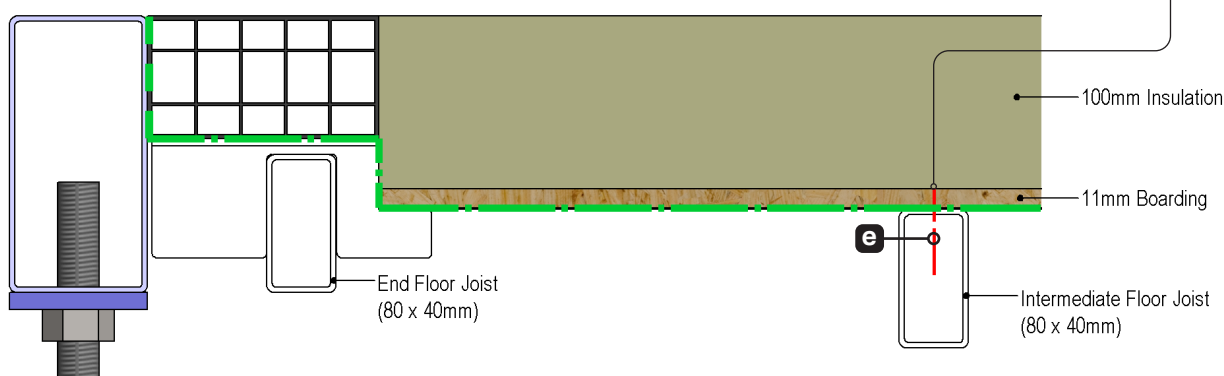
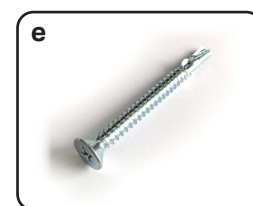
3.0 Lay the **membrane** continuously across the **floor joists (80 x 40mm RHS)**, ensuring it is lapped up and over the **end floor joists (80 x 40mm RHS)**. Leave sufficient excess membrane around the perimeter to allow it to be tensioned and secured once the edge beam thermal break has been installed.

3.1 Install the **edge beam thermal break** around the perimeter of the base. Ensure the **membrane** is securely clamped between the **floor joists (80 x 40mm RHS)** and the **edge beam thermal break**. Using the excess material, pull the membrane taut across the floor joists to eliminate any sagging or wrinkles. Once the membrane is evenly tensioned and securely retained, trim off any excess membrane as required.

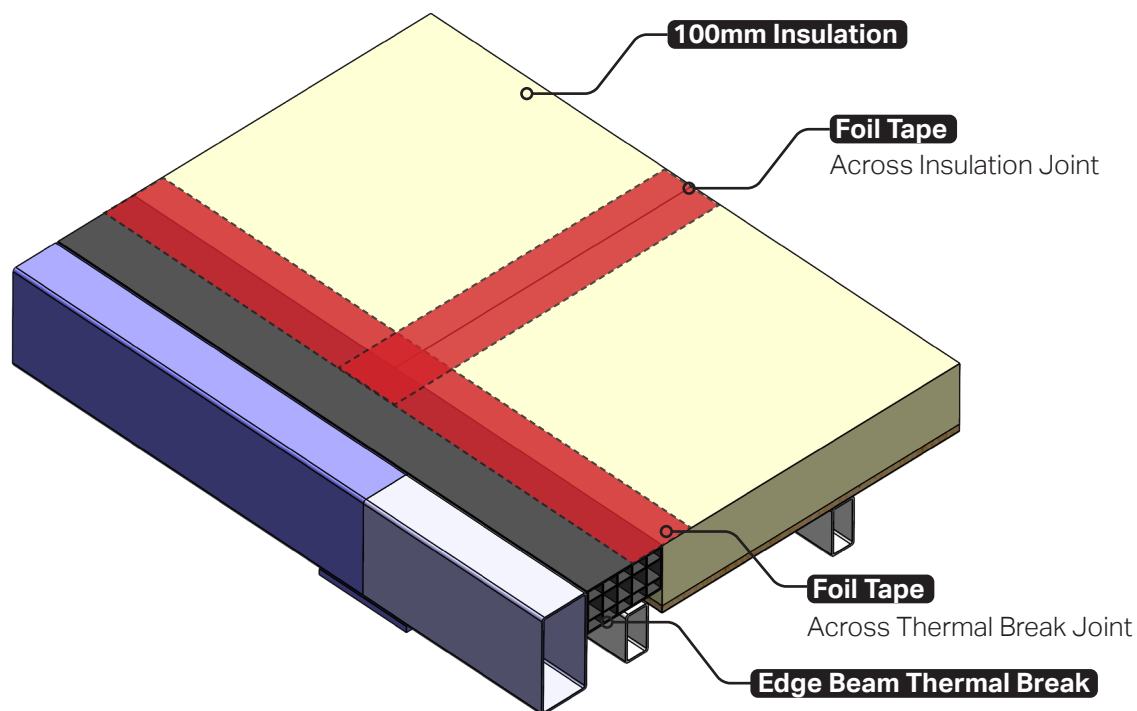


3.2 Deck out the floor area with **11mm boarding**, fixing down to the **floor joists (80 x 40mm RHS)** with the supplied **(e) 4.2 x 38mm Csunk Self-drilling Screws**.

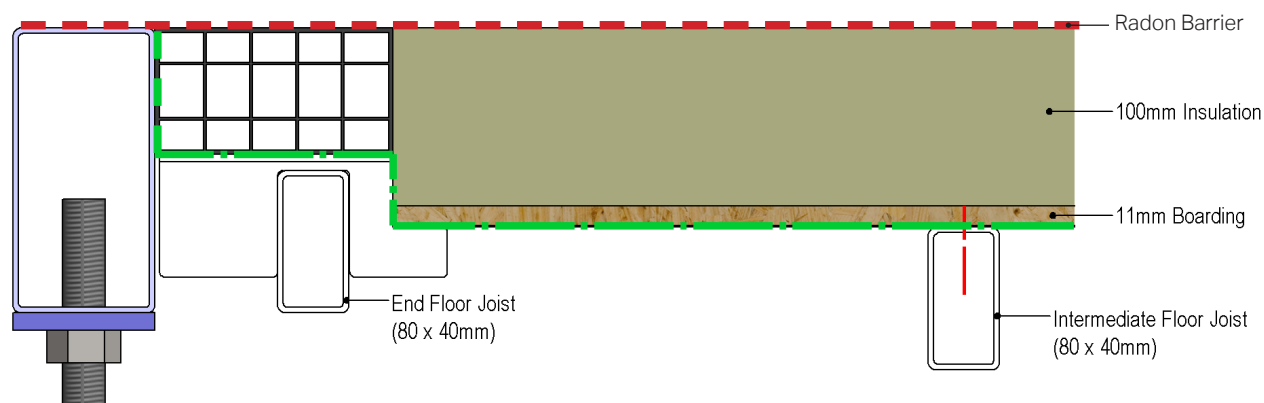
3.3 Cut the **100mm insulation** to size filling the same area with the underfloor insulation. The top of the insulation should finish flush with the top of the **edge beam** and **edge beam thermal break**. In order to meet Building Regulations in Scotland, **120mm insulation** will be supplied therefore it will sit slightly higher than the **edge beam thermal break**.



3.4 Tape all joints between **insulation boards** and seal all interfaces between the **insulation** and the **edge beam thermal break** with a suitable waterproof **foil tape**. Ensure continuity of the seal to minimise the risk of rainwater ingress reaching the **boarding** below.

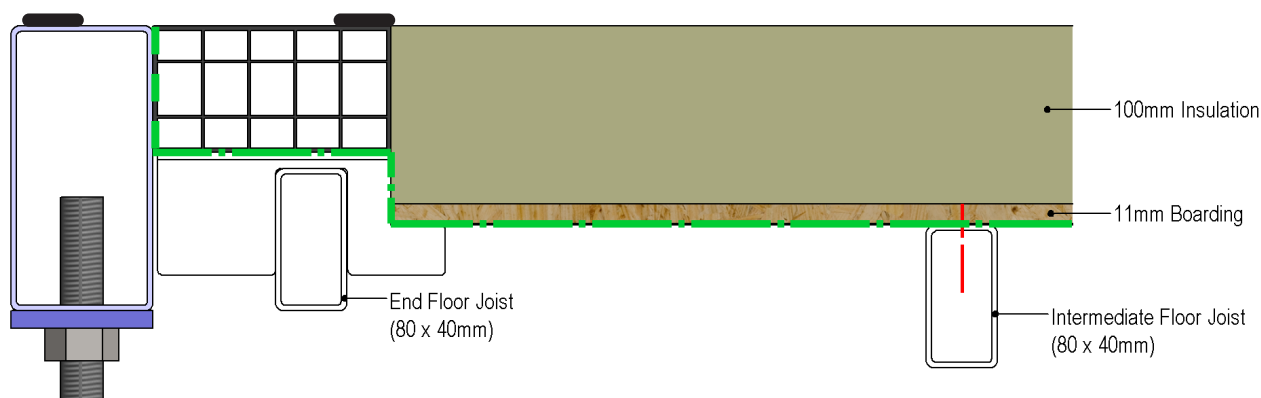


3.5 Where a **radon barrier** is required, install the radon membrane continuously across the **edge beam, edge beam thermal break** and **insulation** ensuring it is fully sealed to adjacent membranes and construction elements in accordance with the manufacturer's recommendations. All joints, laps and penetrations must be appropriately sealed to maintain the continuity and effectiveness of the radon protection system. Any fixings passing through the membrane shall be sealed using butyl tape or an approved equivalent.

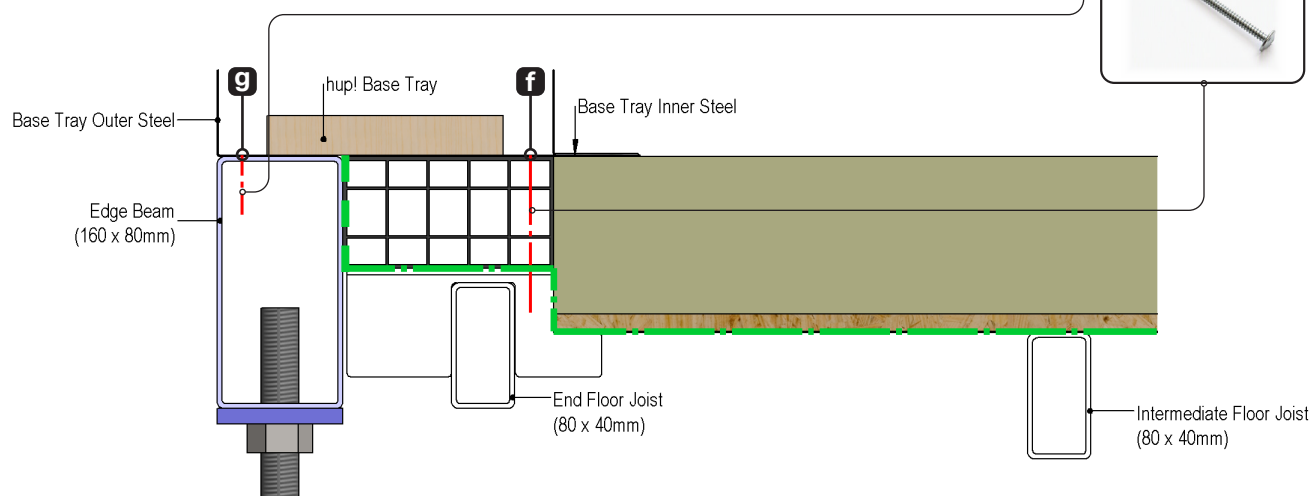


Internal Floor Assembly

3.6 Apply **silicone** to the outer edge of the **edge beam** and inner edge of the **edge beam thermal break**.



3.7 Install the **hup! base tray** around the perimeter of the base in accordance with the supplied drawings. Secure the **base tray** to the **edge beam** using **(g) 10 × 19 mm Hex Head Self-drilling Screws** at 150mm centres. Where the base tray is fixed internally, install fixings through the plastic extrusion/furring and secure using **(f) 4.8 × 100mm Csunk Self-drilling Screws** at every bracket intersection. Ensure the base tray is level, correctly aligned, and securely fixed throughout.



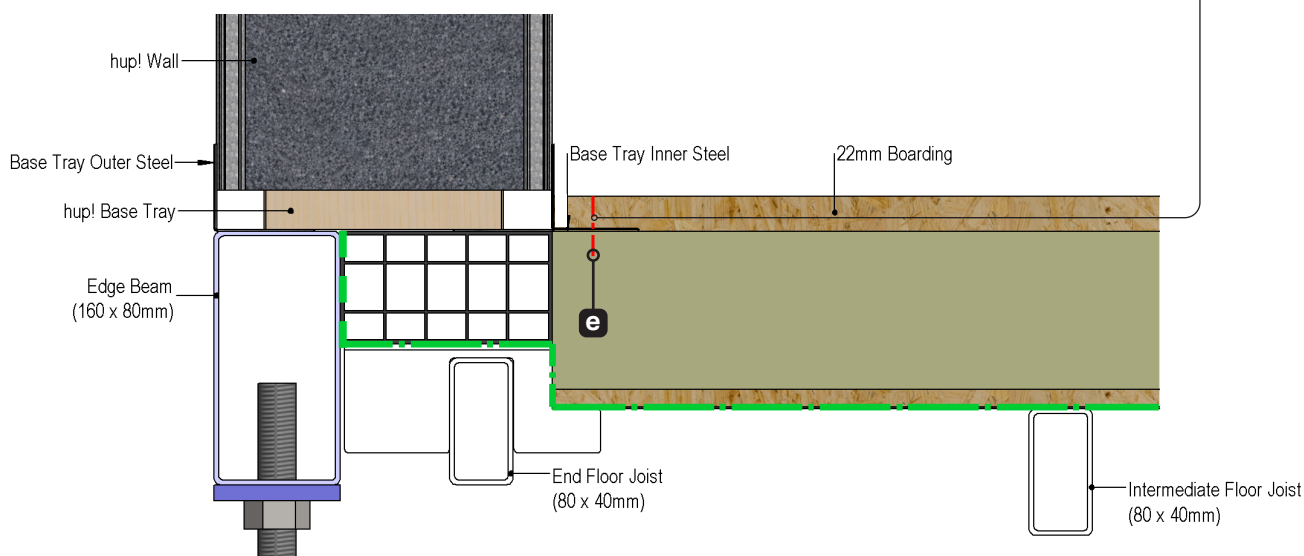
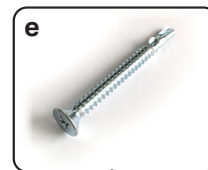
It is recommended that the hup! walls are installed at this stage. Before proceeding with the floor decking installation, ensure that the hup! walls and roof have been fully erected, correctly aligned, and securely fixed in accordance with the installation instructions.

Note: the skirt battens are installed after the hup walls as the wall membrane needs to continue down the bottom of the edge beam to reduce the risk of water ingress.

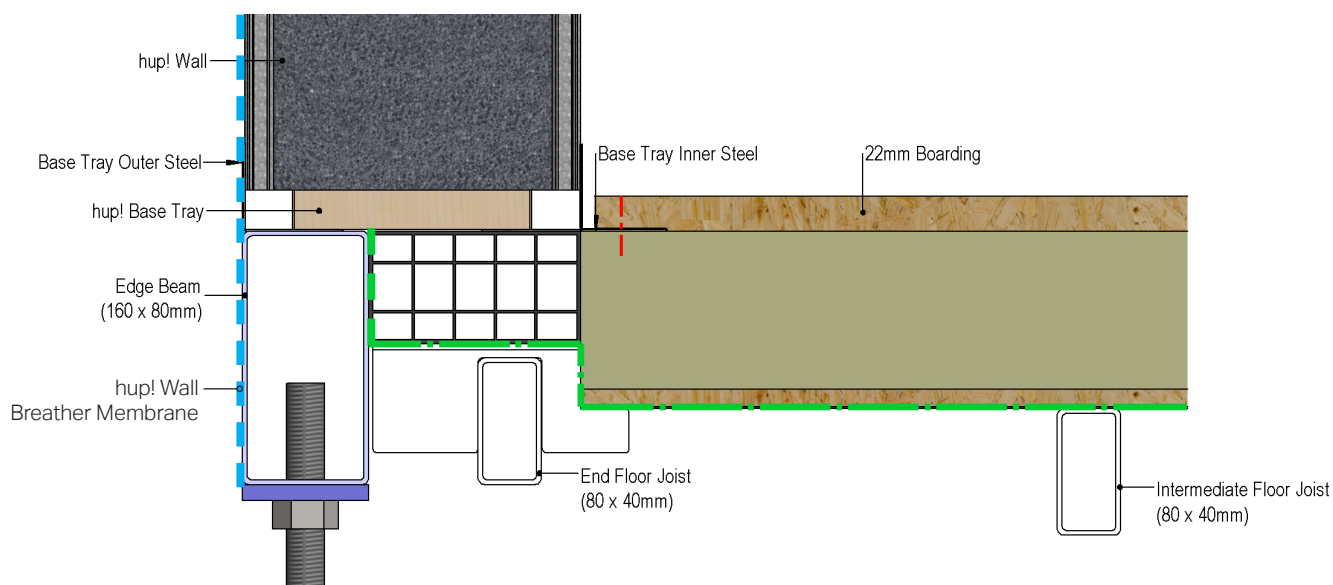


3.8 Start laying the **22mm boarding** directly onto the **insulation** from the rear left-hand side of the base, looking towards the house. Lay the boards the correct way up as marked. Use the off-cut from the last run to start the next. It is advisable to glue the joints of the boards and to glue the boards to the insulation below. Water-proof glue should be used, but is not provided. Fix boards to perimeter steel base tray using **(e) 4.2 × 38mm Csunk Self-drilling Screws** at recommended centres.

NOTE It is recommended to allow a 10mm expansion gap around the outside edges of the flooring. The floor is now ready for finishing with your choice of covering.

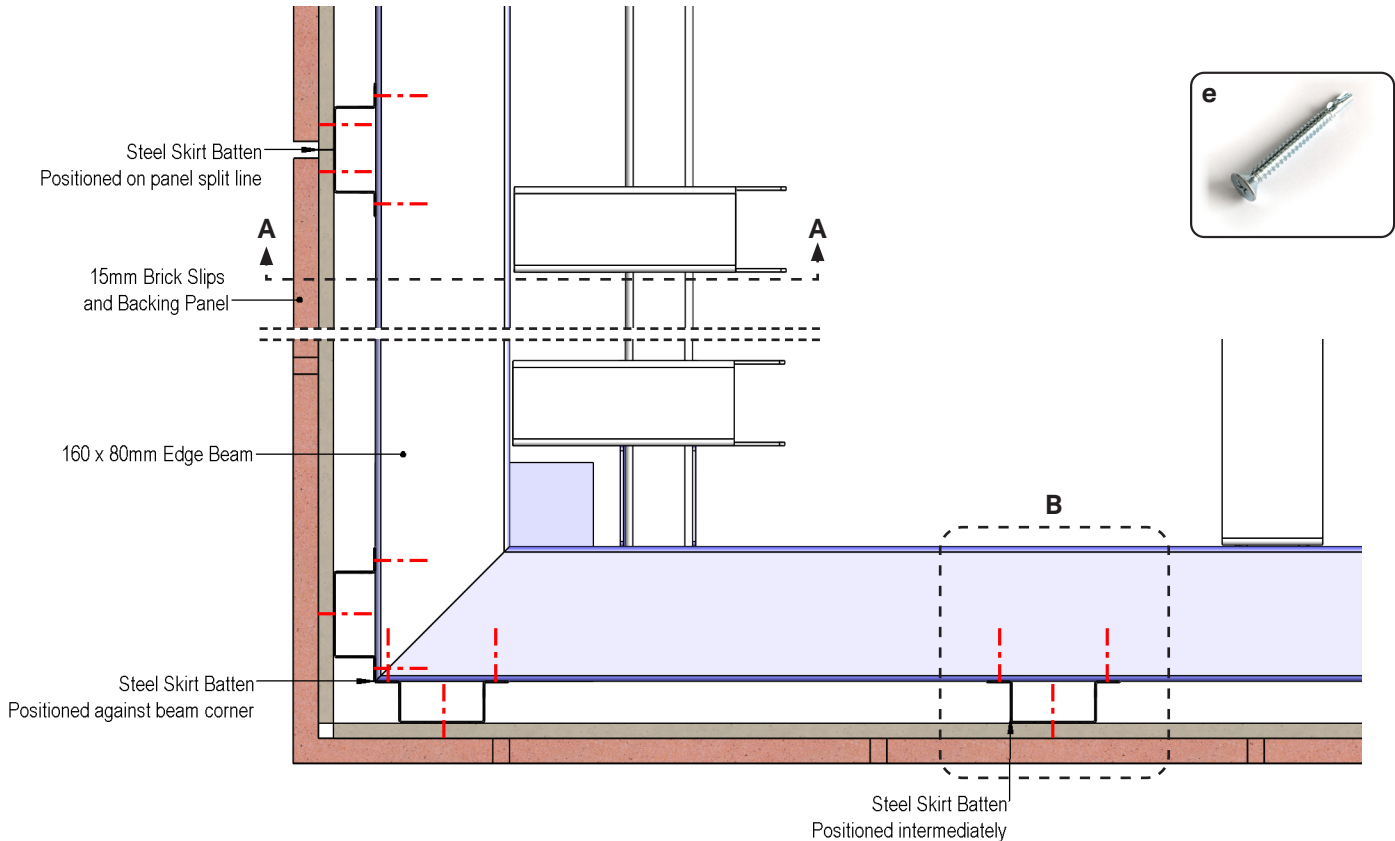


3.9 Extend the **hup! wall breather membrane** continuously across the external face of the **edge beam**, ensuring all overlaps are formed in accordance with the manufacturer's recommendations.



Skirt Panel Installation

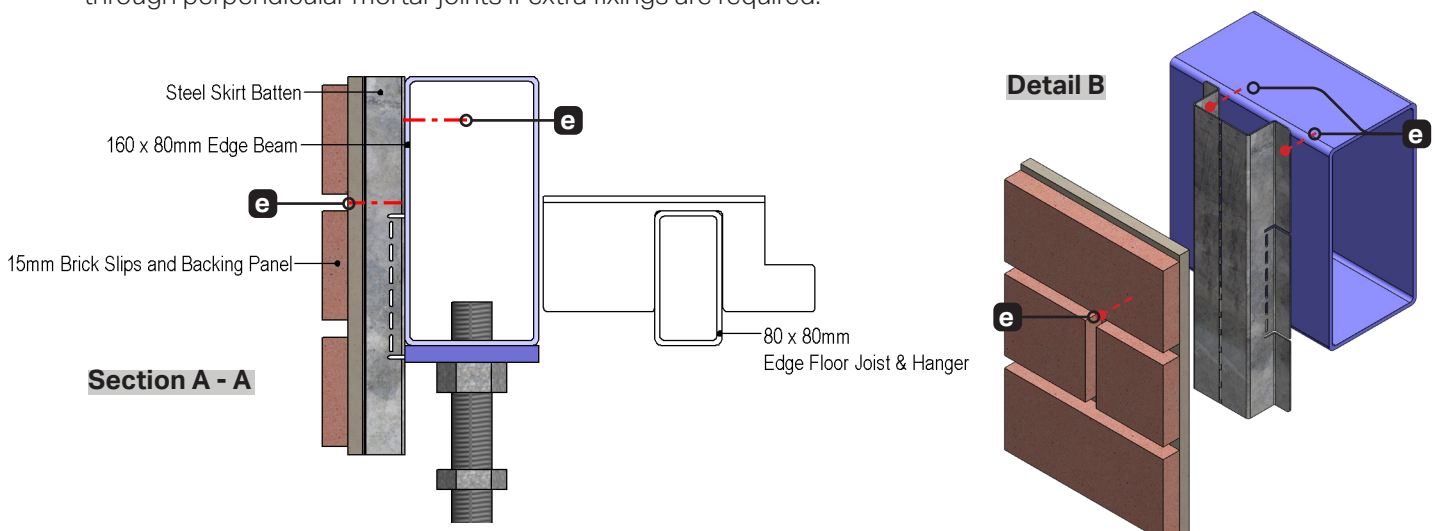
4.0 Install **steel skirt battens** in accordance with the setting-out drawings. Position battens to provide full support to **skirt panels** at corner junctions, inline panel joints, and intermediate locations as indicated. Secure each batten to the edge beam using **2 No. (e) 4.8 × 32 mm Csunk Self-drilling Screws**.



4.1 Lay out the **skirt panels** in the order they are to be fitted. The panels are lettered to correspond with the skirt plan and ensure the brick slips are flush with the top edge. Fit the panels so the top edge lines up with the top face of the **edge beam** and **steel skirt batten**.

NOTE: The ends of the panels that correspond with an external corner of the base frame must line up with the edge of the steel skirt batten face. Do not overlap panels on the corners.

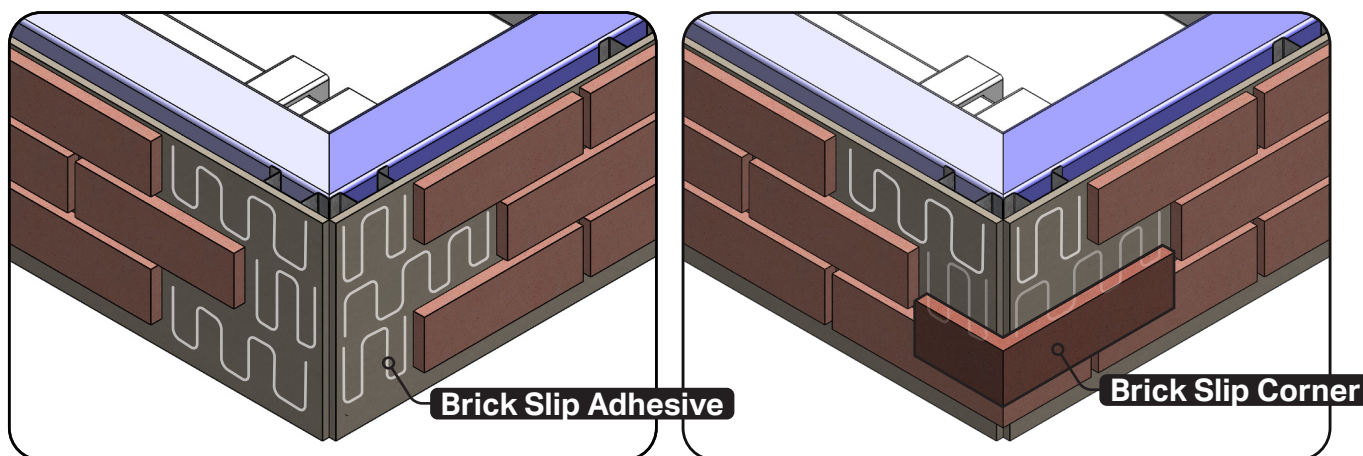
4.2 Using the **(e) 4.8 × 32 mm Csunk Self-drilling Screws** supplied, fix where the brick slips are still to be fitted and through perpendicular mortar joints if extra fixings are required.



Fitting skirt panels

4.3 Once fully constructed, use the **adhesive** supplied to fix the spare **brick slips** in place. You will need to use some **10mm spacers** to position the **brick slips** on the **skirt panels**. Press the bricks firmly into place.

NOTE Be aware of the weather forecast during the building process, the construction adhesive supplied can be used in temperatures between 5°C and 35°C.

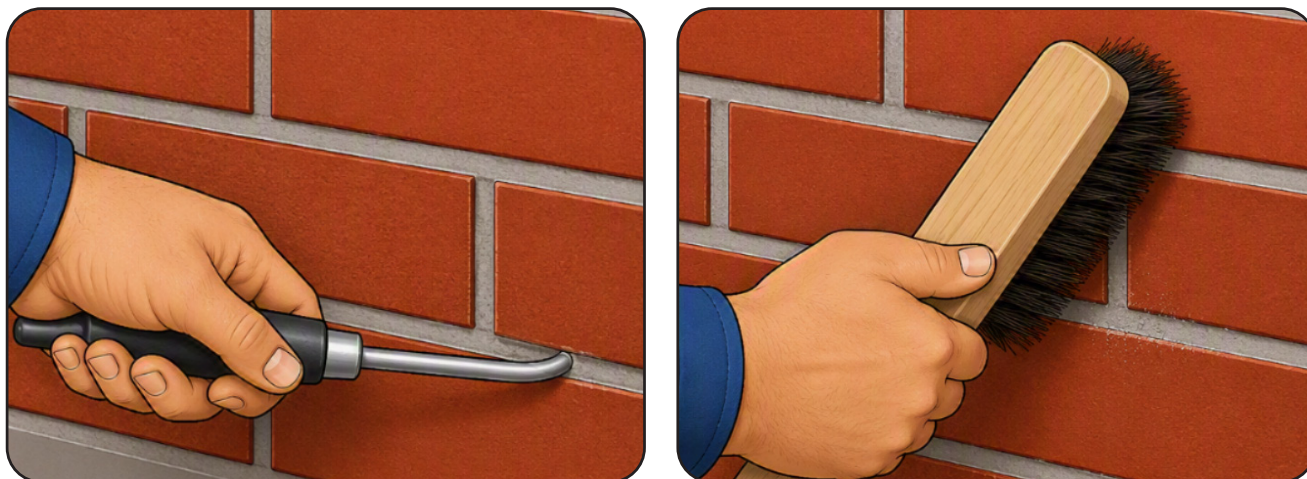


Mortaring the skirt

4.4 To point the joints, mix the mortar supplied with water until a consistency of a stiff cream is achieved. Fill the joints around the bricks completely using a pointing bag. Ensure you follow the instructions on the mortar supplied.

NOTE: Check correct consistency by filling the bag, the mortar should hang from the end of the nozzle when the bag is shaken down.

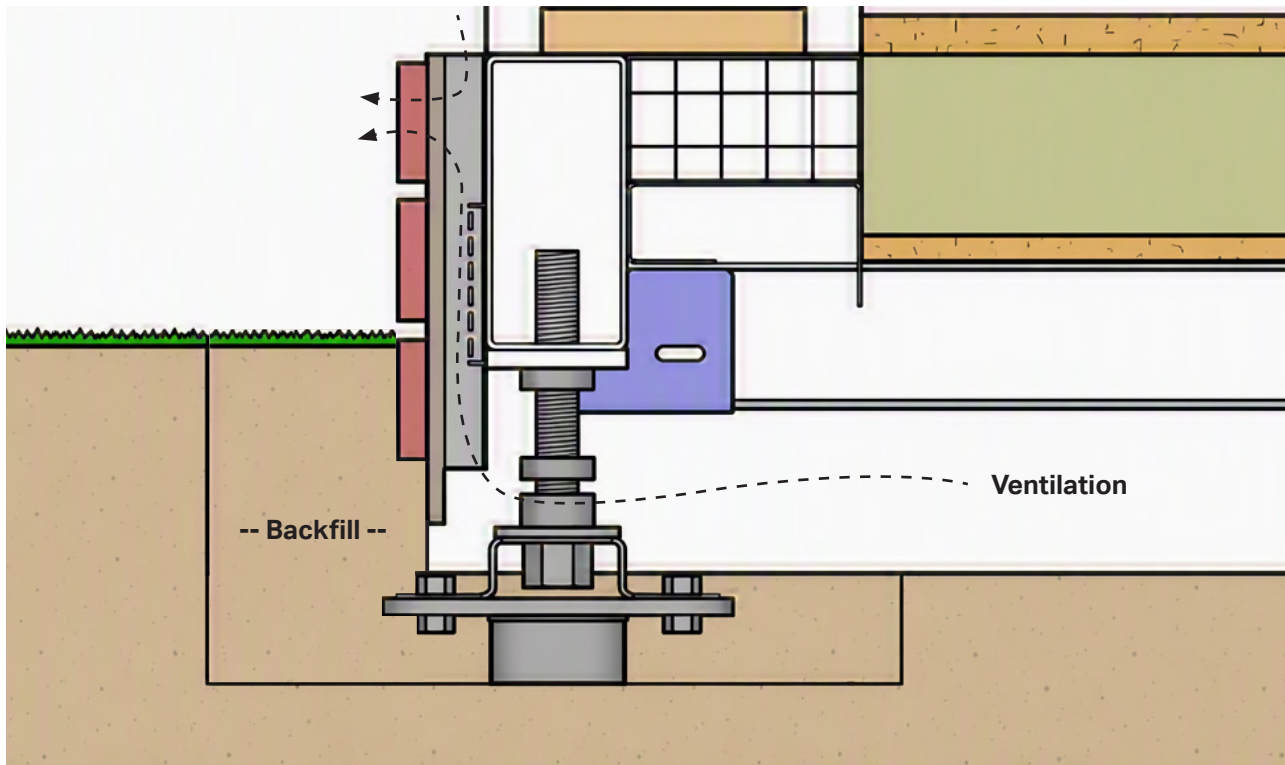
4.5 Allow the mortar to dry until fairly firm. We would recommend that the mortar is firm enough that when pushed in with a finger only a small indentation is left behind. It should have a dull finish, be moist but not wet and somewhat gritty. Use a curved pointing tool to strike off mortar and then, when almost dry, remove any remaining mortar with a soft brush.



Skirt Panel Installation

NOTE: Do not be tempted to strike off when the mortar is too moist. Overworking the mortar can cause colour variation, as each additional pass draws moisture to the surface. This may result in the mortar drying to a lighter shade than intended.

hup! Base skirts includes a 35mm un-bricked section of cement board at the bottom to facilitate backfilling from the outside.



Ready to Render and Plain Skirts

4.6 Install the **render / plain skirt panels** in the same manner as **brick slip skirt panels** using the supplied **(e) 4.8 x 32 mm Csunk Self-drilling Screws**. The boards must be cut to the required length before installation. Air vents should be incorporated into the skirt panels as required. A suitable render board should be installed below the hup! Wall.

NOTE: Ensure the proposed vent locations do not interfere with the steel skirt batten positions. Refer to the project set-out drawings and verify dimensions on site before cutting. Skirt openings should be cut to suit the selected air brick dimensions.

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