



# Domestic Tunnel Series Instructions

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## Tunnelhouse



## Delivered part pre-assembled



## Polyshadehouse



## Shadehouse



### Suggested Tools:

- Step ladder
- Tape Measure
- Timber ground pegs + Hammer
- Cordless or electric drill / drill bit
- Knife / Scissors / Secateurs
- Builders level / String line
- Safety Glasses / Gloves
- Marker Pen

**Note:** A second person can be useful to have available when fitting the cladding or lifting any heavier parts.

### Select site:

A level site is desirable. Choose a site that offers some protection for the Tunnelhouse from strong winds. Face the door away from the pre-dominant wind if possible.

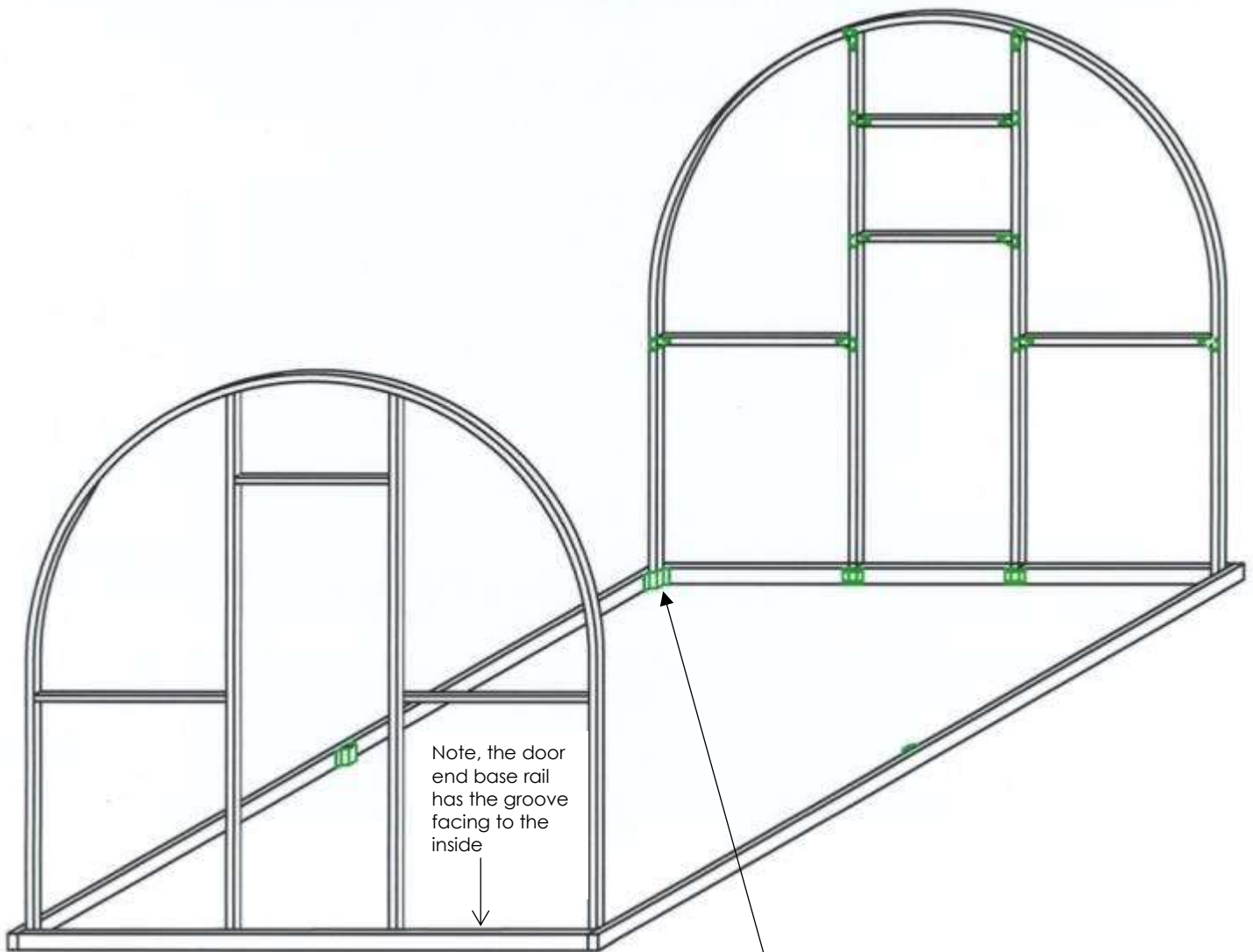
We deliver your Tunnelhouse already partly pre-assembled to save you time. For the best finish we suggest you take your time and allow yourself a weekend to erect and fit the covering. Call us on Free Ph 0508 733 728 if you get stuck during any part of the assembly process.

For standard sites place a 600mm ground peg at a maximum of 1.5m apart along the length or width of the building. If your ground is sandy or loose or if you have a windy site, then ground pegs will need to be longer and spaced closer together to ensure that the Tunnelhouse is well secured to the ground. (See page 5 for **Foundation and base rail** guide)

Choose a site with a sunny aspect as it will likely improve crop performance.

### Stage 1 Stand up the door end and the louvre end walls.

The Tunnelhouse is supplied to you with each of the end frames already pre-assembled. Stand these up in a vertical position whilst you locate the screws for the four corner brackets and attach the side base rails. Take care not to over torque and "spin" the screws in the alloy base rail. (Pic BR2) see below. The side base rails finish flush with the front face of the end base rails. (Pic BR1) see below



Corner side base rail finishes flush with end rails (Pic BR1)



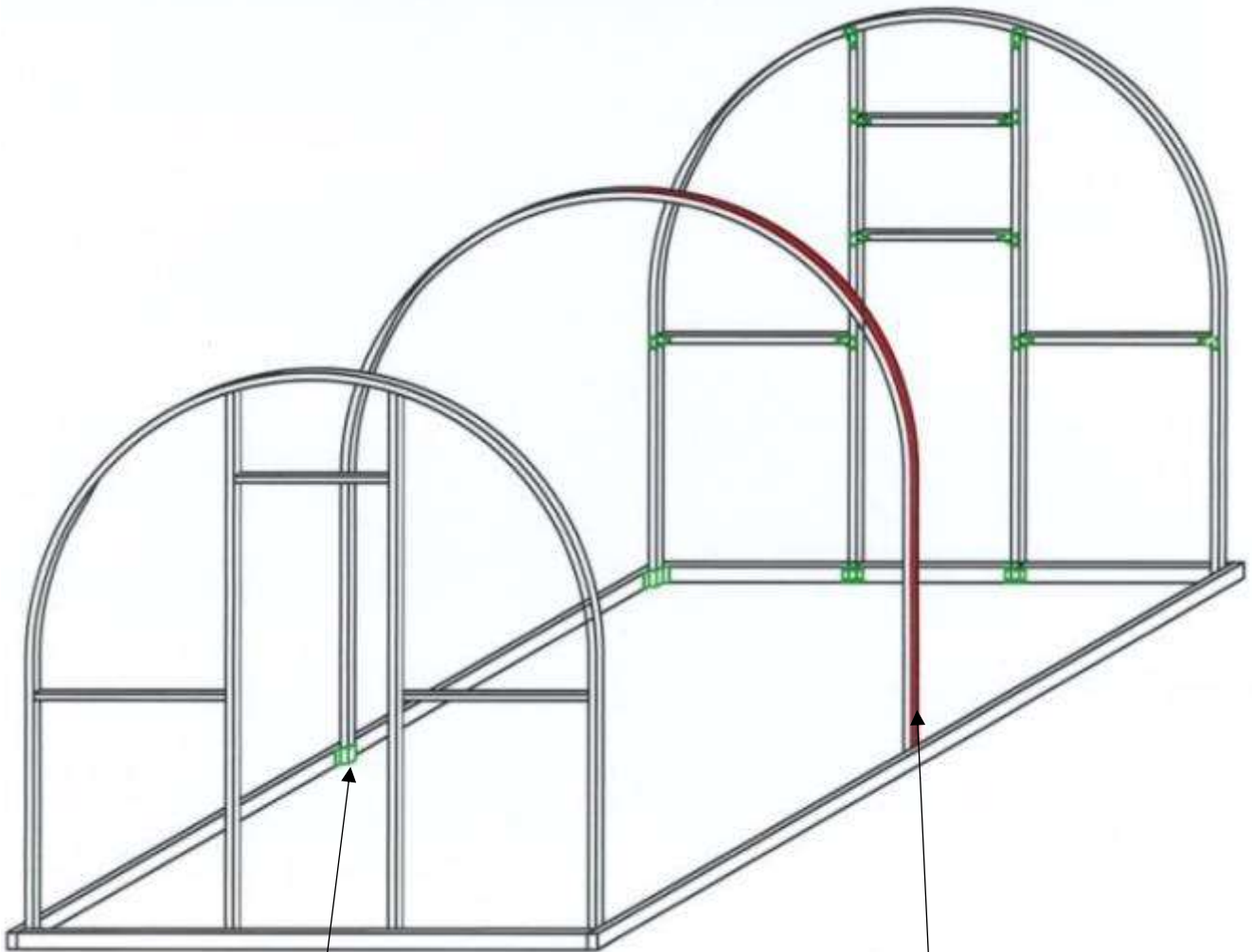
Internal corner brackets (Pic BR2)



## Stage 2 Stand up the internal hoop(s).

Stand up the internal hoops and slide their ends into the saddles that we have already fitted to the inside face of each side base rails (**Pic SBS1**) see below. Install the Polyguard adhesive felt tape to the top face of the internal hoops (**Pic POL1**) see below

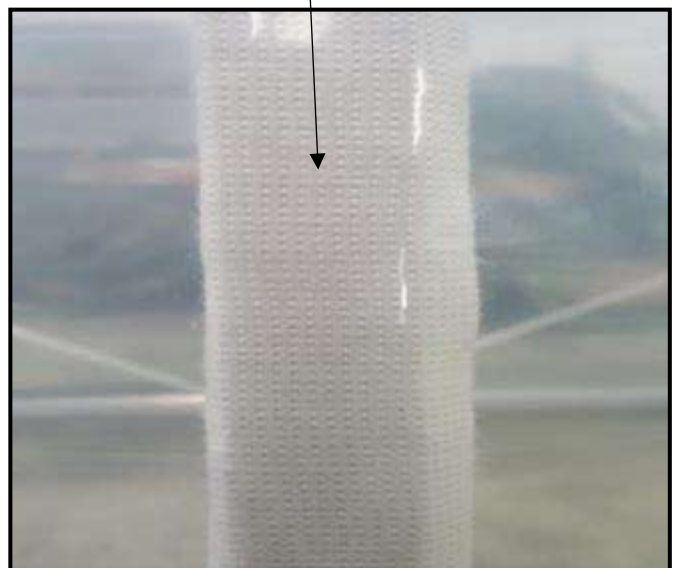
**Note:** We recommend not securing the hoops into place until after the covering has been fitted as this will allow the hoops can be lifted slightly at a later stage to assist with tensioning the cover.



(Pic SBS1) - Side base rail saddle  
(Secure these internal hoop screws after the cover installed)



(Pic POL1) - Place adhesive felt onto top edge of internal hoops



### Reminder:

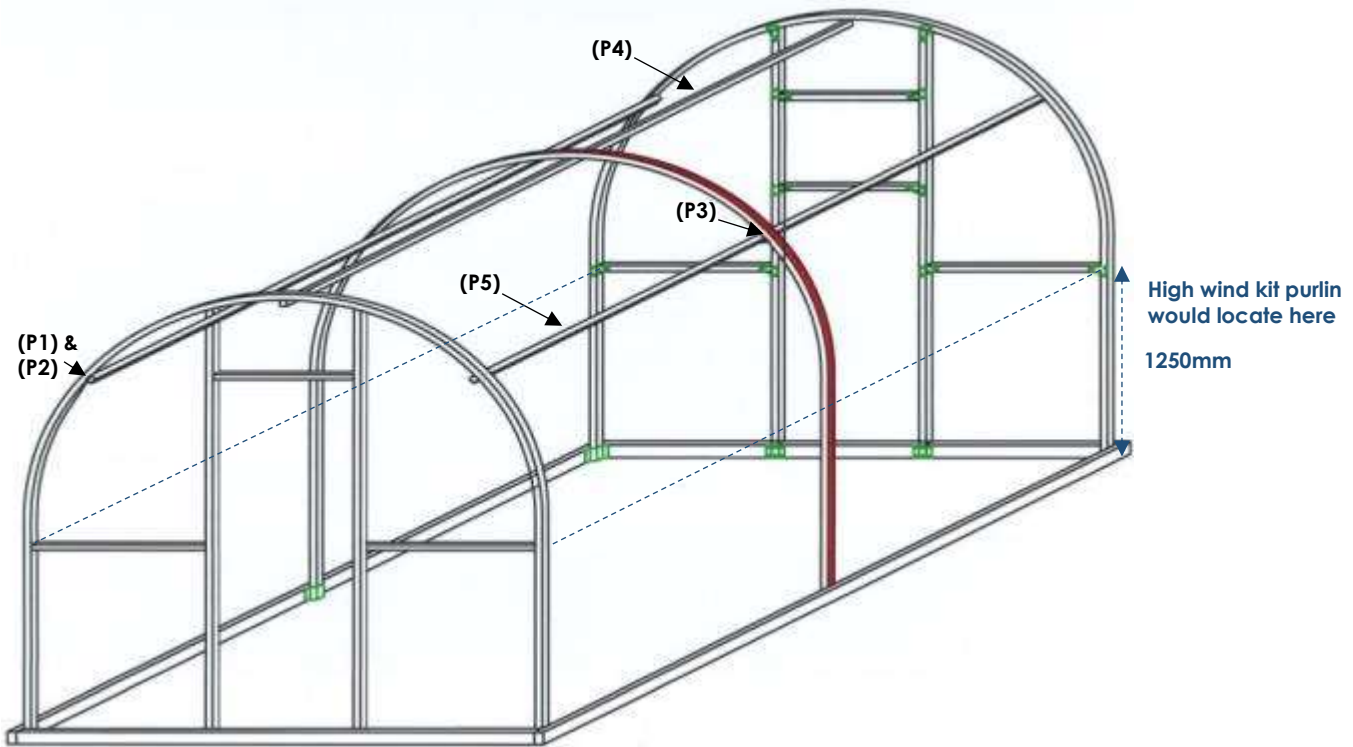
Send us some pictures of your Tunnelhouse planted up and growing, if we use them on our website we will supply you with a **free tunnelhouse maintenance kit**



### Stage 3 Locate the lengthways purlins.

There are three purlins on the standard model. One at the ridge and one located as shown approximately midway down the curve of the hoops.

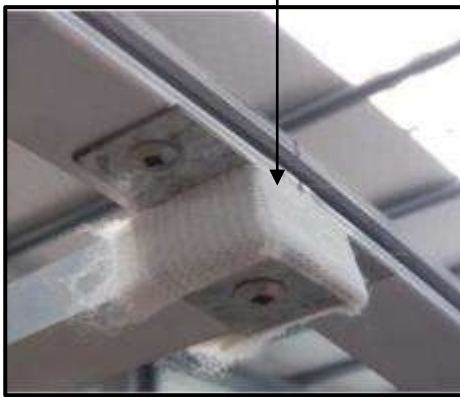
**Note:** If you have a high wind kit included, then there will be five purlin rails supplied. Please locate a purlin at the ridge, and also approximately 1250mm above the side base rails. Then place the final purlin midway between the ridge and the lower purlin on the curved hoop on each side.



Purlin ends (P1)



Wrap two layers of Polyguard tape around purlin ends to prevent wear on covering (P2)



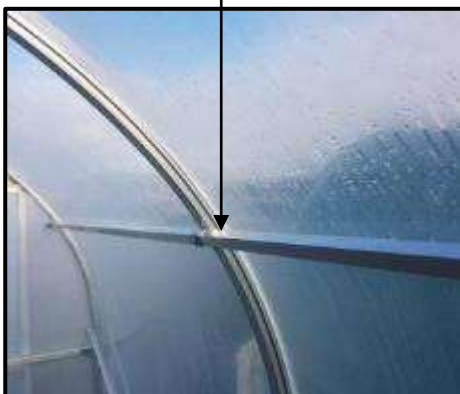
Saddle holding side purlin in place (P3)



Ridge purlin (P4)



Interior purlin fitted (P5)



Side view of purlins fitted



## Foundation and Base Rail

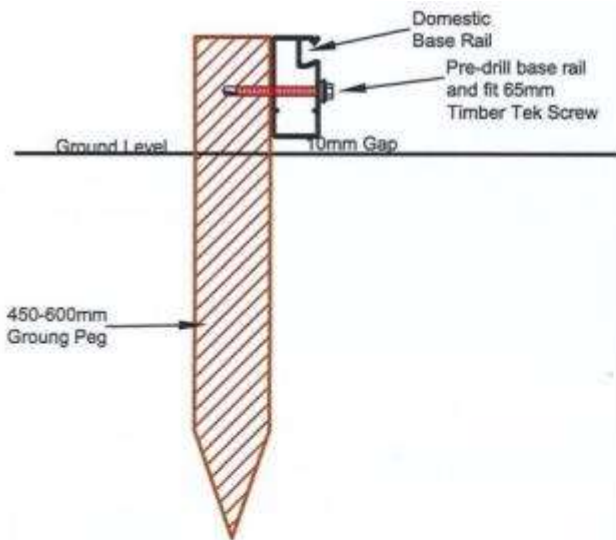
Usually it is best to complete the foundation of the Tunnelhouse whilst you have easy access to hammer in ground pegs (before the Tunnelhouse covers are fitted).

You will need to use suitable screws or bolts to fasten the base rails and to match your ground peg selection

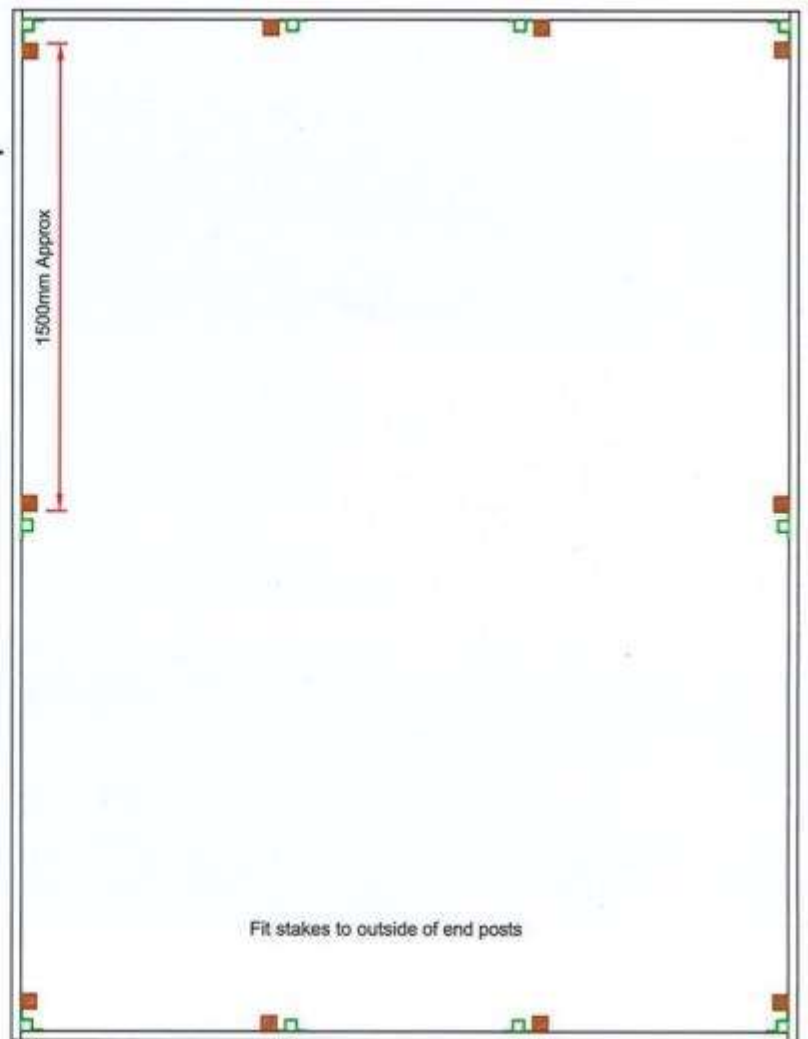
Typically a ground timber peg of 75mm x 50mm x 600mm is sufficient (**Pic GP1**) see below. Hammer these into the ground at a maximum of 1.5m spacing. (**Pic GP2**) see below

If your chosen site has high wind exposure or has soft soil – then place ground pegs closer together (1m or less).

(Pic GP1) Ground peg connection to base rail



(Pic GP2) Ground peg spacing



**Note:** You may also wish to consider using concrete to secure your ground pegs if a more durable foundation is preferred.

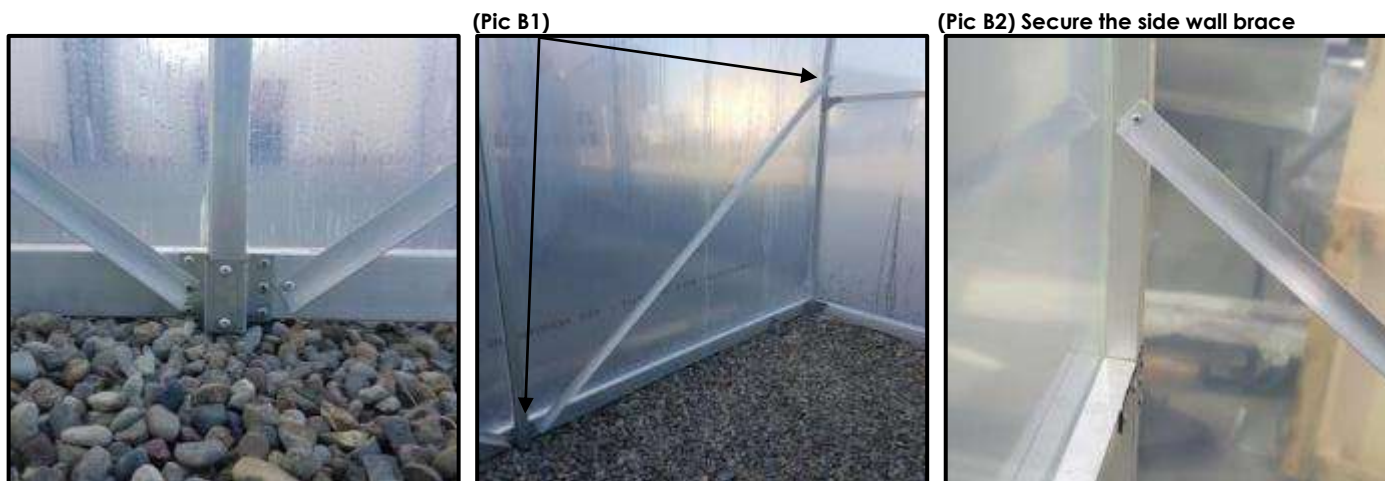
Another option is to build a rectangular timber frame the same size as the base of the Tunnelhouse from tanalized 4 x 2 or similar. You can then secure the timber frame to the ground using ground pegs and then secure the aluminium base rail to that framework by screwing through the alloy base rail vertically

## Wall bracing

Fasten the lower end of the wall brace to the inside face of the base rail near to the side base rail saddle. (**Pic B1**) see below

Fasten to inside face of end hoop. (**Pic B2**) see below Position it to not allow the corner of the brace to protrude out from the end wall otherwise the end wall cover when fitted may touch the corner and be damaged. Place a small piece of Polyguard onto the top end of the wall brace to protect the end wall cover once fitted.

**Note:** If your Tunnelhouse has a high wind kit supplied it will include two extra lengthways purlins and four additional end wall angle braces. The 4 x end wall angle braces are slightly shorter than the 4 x sidewall braces but are fitted in the same manner.



## COVER HOLDING SYSTEMS USED ON THIS BUILDING

There are two types of cover holding systems used on the Redpath tunnelhouses: The shape of the aluminium grooves and the parts that fit into them is different between the two types.

1: **Lockstrip** is used over the end hoops and also the front and rear wall faces of end hoops, Vent upstand rails, the door frame, around the louvre. Lockstrip has a green strip insert and an "L" shaped locking clip spaced every 200mm ((Pic L2) See below to see how each part is located in the aluminium groove)

2: **Duralock 2** is used along the side and end base rails. (it uses two white inserts – see **System 2** . below)

### System 1. LOCKSTRIP HOLDING SYSTEM:

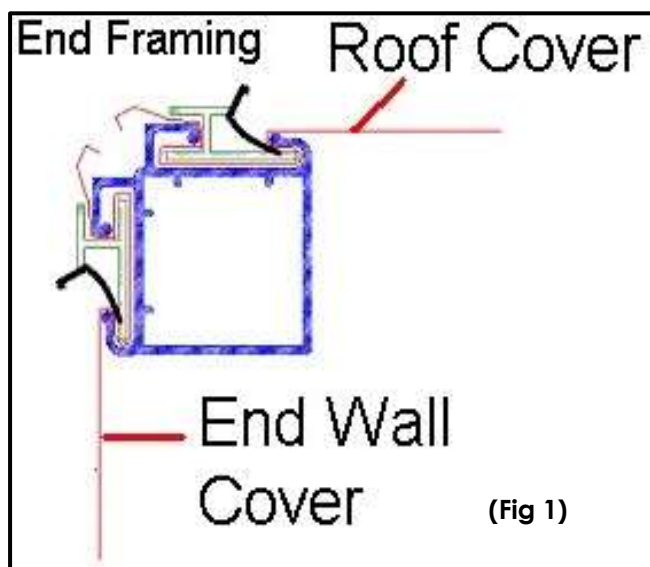
(Pic L1) below shows the pre-cut 200mm length pieces of the lockstrip insert. These are fitted to the front faces of the curved parts of both ends only.

Lockstrip insert is also supplied in full 2m lengths (please trim these to size to suit the location that you place them). Also see video link on Redpath web site <http://www.redpath.co.nz/commercial-greenhouse-accessories/greenhouse-film-clipping-systems.html>

(Pic L1): Use the 200mm inserts only on front face of the curved part at each end



(Pic L2): Shows the positioning of the covering (red), Insert (green) and Lockstrip clip (Black)

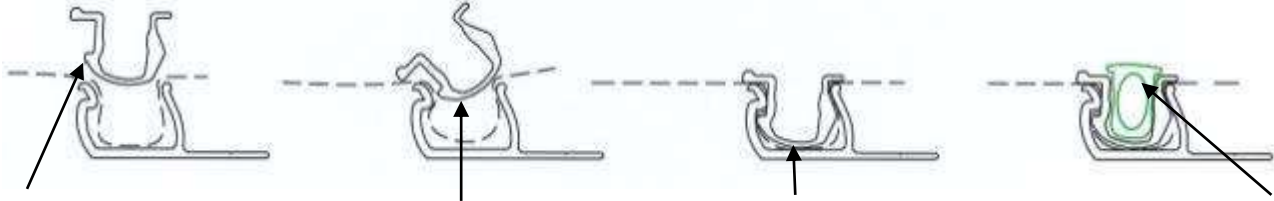




## System 2. DURALOCK 2 CLIPPING SYSTEM:

Duralock is used along the side and end base rails only. The Duralock groove is on the inside face of the door end base rail so that sufficient clearance is provided for the door to slide and not impact the end wall covering.

1. Tension the cover over the jaw of aluminium.
2. **Important:** Ensure that the channel insert has the locking lug (A) facing forward
3. Insert the strip beginning at their ends.



**(A)** Locking Lug Forward    **(B)** Tilt Channel Insert    **(C)** Fully Seat Channel Insert, then fit Bead  
The "channel" insert with its front "Locking Lug edge" facing forward is inserted firstly. Tilt the front edge down **(B)** & whilst easing cover tension from behind locate the channel insert into the alloy groove using a rolling motion. Leave a small gap between strips 5-10mm to allow for heat expansion. Check that the channel is fully "open" in readiness for the bead insert **(C)**.

### Install the Locking Bead

4. Ensure that the channel is full seated & that the Jaw "of the channel is fully open before pressing the locking bead into place.
5. Press one end of the locking bead with its rounded edge facing down fully into position. A soft headed mallet may be used gently to assist the rest of the bead strip into place.

**Note:** The locking bead must be a tight fit (not easily be removed by hand). If in doubt contact your supplier. An option is to add additional layers of material beneath the channel to "tighten" the fit

Also see video link on Redpath web site <http://www.redpath.co.nz/commercial-greenhouse-accessories/greenhouse-film-clipping-systems.html>

Use rolling motion to install channel part



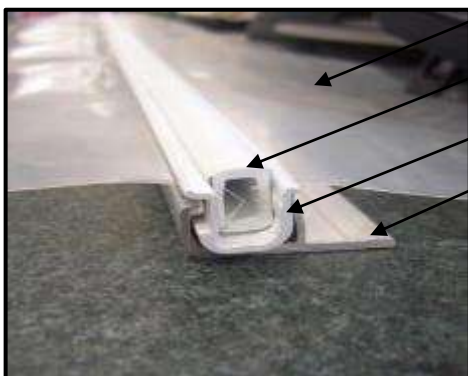
Ensure channel is seated and jaw fully open



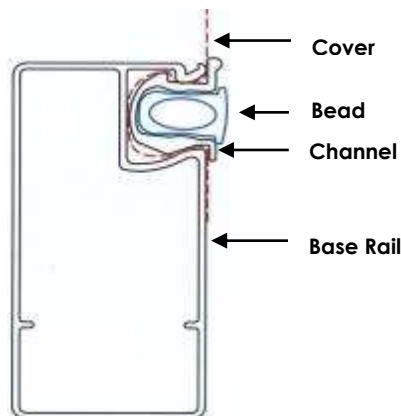
Tap the bead into place



Below picture shows all parts assembled



Cover  
Bead  
Channel  
Base Rail



Cover  
Bead  
Channel  
Base Rail

## **FITTING THE COVERS TO THE TUNNELHOUSE**

- There are four pieces of covering supplied for this building: The roof and side piece is one part (largest), there are 2 x end pieces (3m x 3m), and 1 x door piece (1 m x 2m).
- Install the clear covering on a warm, calm day, (this makes the work and the tensioning of the covering easier).

**TIP:** The Lockstrip holding system is used is to hold the door covering and other parts.

We suggest that you install the covering to the door frame firstly as it is a straightforward rectangular shape and will allow you to familiarize yourself with the Lockstrip holding system

**Note:** When fitting the clear roof part cover it should have the printing on the cover facing to the inside.

### **1. DOOR COVER – use the Lockstrip holding system**

- If possible, please watch the Lockstrip assembly video on the redpath.co.nz website before beginning. See this link <http://www.redpath.co.nz/commercial-greenhouse-accessories/greenhouse-film-clipping-systems.html> as the video shows - The proper technique is to pull the cover tight over the aluminium groove with one hand whilst positioning the insert in readiness above the Lockstrip groove. Then in one motion release the tension & at the same time press the insert into the Lockstrip groove. Then install the small “L shaped” locking clips as shown at 200mm spacing.
- Lay the door frame on the ground with Lockstrip groove facing upward and place the 2m x 1m door cover in approximate position
- Cut four pieces of Lockstrip insert to suit the four sides of the door. These should be a small amount shorter (Approx 20mm) than the sides, top and bottom – so as to allow the covering some space to be clipped when you are near to the corners of the frame.
- Fit the insert to the top door rail firstly, - then the bottom door rail (pulling the cover tight as you do so). Then install Lockstrip to the two longer side door edges. (begin in the middle and work toward the corners)
- Pull the covering tight and position the Lockstrip insert in position (as shown in the video link) so that the long leg part will fit into and under the rounded “bullnose shaped” part of the aluminium see (Pic L2) page 6
- As you push the long leg part into the aluminium groove you will need to let the pressure off the “tail piece” of the film that you have been pulling on to tension the cover (this will allow the insert to slide into place)
- Locate the insert strip fully and then click into the place the small Lockstrip “L” shaped clip in the position shown.
- With the door cover fitted you can now proceed to each of the end covers

### **2. ROOF VENT: If the roof vent option is included with your model, you will complete this section before fitting the roof and sidewall cover (disregard this section if you have no vent)**

If the roof vent option is included in your design then you should Partially install this prior to fitting the roof and side piece of covers.

**NOTE:** The roof vent may be positioned in any of the Tunnelhouse sections; however you cannot fit the roof vent in a section directly beside another section that might already have a roof vent.

(This is because the ends of the vent require clearance for an overlap.

**NOTE:** When you have decided which section to place the roof vent in, you will need to cut and remove the ridge purlin in that section. (Pic V1) see below

1. Before fitting the roof and side covering - Lift the roof vent complete into place at the apex of the Tunnelhouse, - the ends of the roof vent upstands will rest on the top face of the hoops.
2. Screw the four “L brackets” onto the side face of the tunnel hoops. (Pic V1) see below
3. Before you fit the cover onto the building stage 4. - You will need to disconnect the roof cap by undoing the four bolts that hold the vent in place on the upstand. Remove the roof folded cap and aluminium vent arms + handle completely. (this will be re-fitted later)

With the vent removed you can now proceed to fit the main roof cover. See below **4.ROOF.....**



(Pic V1) Vent "L" Bracket x 4, Vent rails Vent Upstands



(Pic V2) Roof vent cap and Vent arms + Handle



**Note:** The ridge beam purlin should be removed from the vent location space; the vent rails replace the ridge purlin in the vent space.

#### 4. ROOF AND SIDEWALL COVER, use the Lockstrip holding system for the end hoop parts and Duralock 2 holding system for the side base rails

- The roof and sidewall cover is supplied in one piece. The width is 6m and the length will suit the size of the Tunnelhouse that you have ordered.
- If your Tunnelhouse includes a roof vent please install the roof vent kit before assembly (see instructions), and then before fitting the roof and sidewall cover remove the cap vent plus the aluminium pivot arms and handle (Pic V2) see above (leaving the two vent rails and upstand in place (Pic V1) see above)

**TIP:** You can place a temporary rope or strap along the full length of the Tunnelhouse 750mm each side of the ridge on top of the hoops, to help support the roof cover whilst you distribute it across the Tunnelhouse. The rope helps to stop the covering from falling draping down between the hoops, and assists with you placing tension on the cover.

- Unfold the cover and lay it out over the Tunnelhouse so that it rests in the approximate position with an equal amount of excess film draping over each end hoop and each side base rail.  
**NOTE:** If you're Tunnelhouse has a roof vent take care not to catch the cover on the vent rail upstands (Pic V1) see above when laying it out into position.  
**NOTE:** The print name on the cover should face to the inside of the Tunnelhouse so that the text reads correctly (left to right)
- Begin at one end of the Tunnelhouse and install the Lockstrip holding system starting at the apex and working to the left and right down each side of the end hoop.
- Go to the other end and pull the cover tight along the length of the ridge. Install the Lockstrip holding system starting at the apex and whilst pulling the cover as tight as possible – work your way to the left and right installing the Lockstrip holding system down each side of the end hoop.
- Now move to the side base rails. These use Duralock 2 clipping system.

**TIP:** Read the Duralock 2 clipping system in these instructions and also see this link for an assembly video <http://www.redpath.co.nz/commercial-greenhouse-accessories/greenhouse-film-clipping-systems.html>

- Begin at the centre & start inserting the U shaped Duralock clipping design insert whilst tensioning the cover as much as possible. Work your way to the left and right toward the ends of the building.

**TIP:** Sometimes it is simpler to lift the entire side of the Tunnelhouse up in the air and rest it on blocks or two chairs – as this can make it more convenient to assemble the base rail holding system.

**TIP:** After you have fitted the clipping system along the base rails on each side, you can loosen the screw(s) that secure the center hoops to the base rail saddle(s) (Pic SBS1) See Page3 You can then 'Lift' the arches whilst holding down the base rail with your foot; this will add tension to the roof/side cover. Have a second person - re fit the saddle screws to secure the arch position.

## IF YOU HAVE A ROOF VENT OPTION

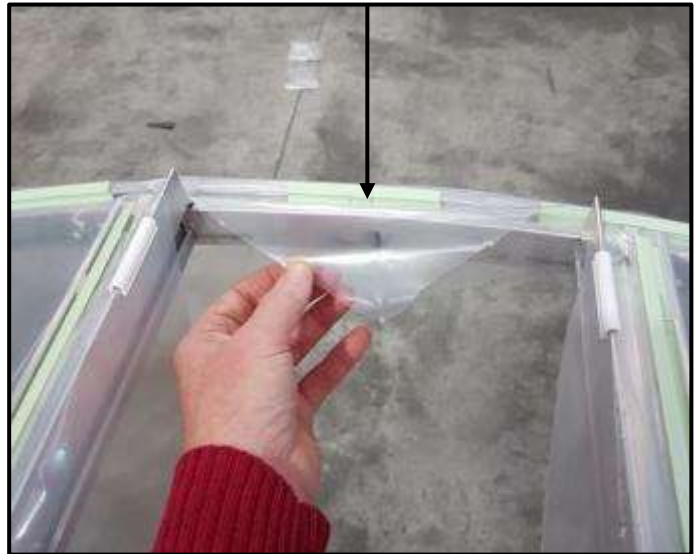
After the main roof and sidewall covering has been fitted, - you can re-fit the cap vent

- 1 In the section where the vent is to fit – Use a knife to slice the cover at the apex for the length of the roof vent rails
1. Then slice the cover toward the corners of each vent rail. **See (Pic V4)**
2. Insert the Lockstrip holding system into each of the vent upstand rails
3. Insert a 100mm piece of Lockstrip insert + clips x 2 into the top edge of the hoops at each end of the roof vent (this goes between the vent rails)
4. Secure the edge of the cover onto the top edge of the upstand using the white Omega clips provided **see(Pic V5)**
5. Trim the excess film behind the Omega clip and also at the end of the roof vent opening away
6. Re-locate the roof cap and aluminium arms + handle up into place and re-connect the nuts/bolts/washers to the upstand.
7. Test the roof vent for open / close action and adjust if needed.

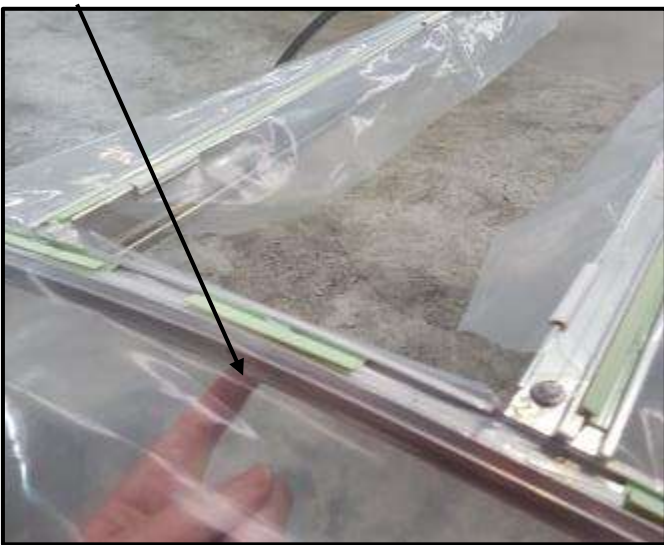
(Pic V3) View of the roof vent rails with covers fitted



Cut the cover – between the vent rails (angle into corners)



(Pic V4) Shows cover cut away and 100mm piece of Lockstrip insert + clip to hold the end in place



(Pic V5) shows omega clip fitted to upstand – which holds the tail of the cover behind the vent rail and acts as a flashing



## END AND LOUVRE END WALL COVERS – use the Lockstrip holding system for the hoop and end wall stud parts and Duralock 2 holding system for the base rail part.

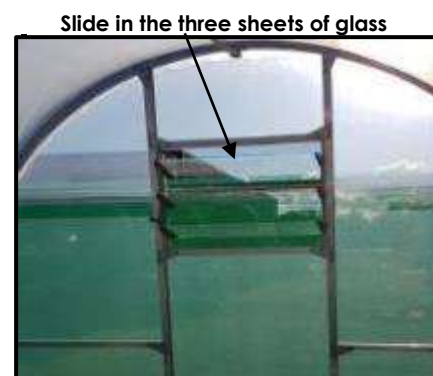
- Each end cover is supplied in a 3m x 3m piece
- Find the center of one edge of the end covers and hang this so that the top edge is more-or-less parallel to the ground and has its center approximately in position at the apex of the hoop.
- Fit one 200mm pre-cut piece of lockstrip insert and “L” clip into the face of the frame to temporarily hold the end cover.
- Whilst placing some tension on the covering, - Fit another 200mm pre-cut piece of lockstrip at the point where the curve of the end hoop stops and the straight part of the sidewall begins (approximately the 9 o'clock and 3 o'clock position if looking at the face), then whilst tensioning the covering position a 200mm pre-cut piece of lockstrip midway between the two inserted pieces.
- Whilst tensioning the covering fill in all of the remaining front face of the curved part of the end hoop **see (Pic L1)** using the supplied 200mm pre-cut pieces.
- For the remaining straight part of the end hoop frame, cut a piece of lockstrip insert to suit the remaining length and whilst placing some tension on the covering install the insert and “L” clips. (“L” clips are spaced at Approx 200mm)
- The base rail at each end uses the DURALOCK 2 cover holding system, please read the Duralock 2 instructions.
- With end hoop and base rail secured, - you can 'cut out 'The door and the louvre openings. Be sure to cut the opening on the correct side of the framework so that you have some film to hold onto and tension whilst you fit the Lockstrip inserts and clips into the end studs and around the louvre frame

**Note:** Try to avoid wrinkles in the cover whilst clipping. If you get excessive wrinkles, release the holding system and re-fasten. 'Work" any wrinkles toward the corners if possible.

**Note:** If the insert “jumps out” in windy conditions – it is possible that the insert has been installed backwards or upside down. Please check the lockstrip holding system drawing, **see (Pic L2) Page 6** for the correct parts assembly final position.

### Fitting the louvre window

The louvre mechanism has already been fitted as part of the pre-assembly service by Redpath. After the tunnel has had its covers fitted - carefully slide the three glass sheets into each holder. **BEWARE of glass hazard**



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## Door

**Note:** Do not fit the door track or the door itself to the building until after the door end cover is fitted. See Cover fastening instructions.

### **Fitting the door and door track**

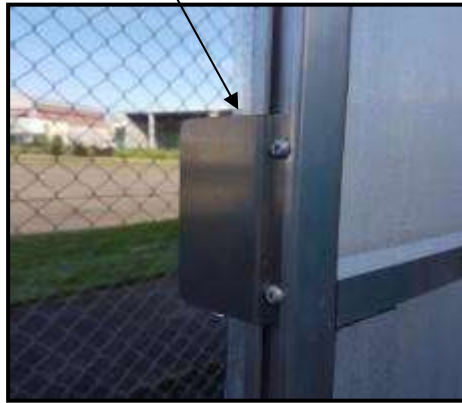
1. Place a piece of the Duralock 2 bead on top of the base rail in the door opening to act as a packer.
2. Slide the door track onto the two door rollers that are already attached to the door frame
3. Lift the door track complete with door attached into approximate position (resting it onto the packers)
4. Lift up the door track slightly so that the weight of the door is suspended on the track.
5. Screw through the door track top plate and into the right hand end stud. **(Pic D4 )**
6. Raise the left hand end of the door track so that the clearance at the bottom of the door is similar on both sides. Place a screw through the door track top plate at the left hand end stud point. **(Pic D5)**
7. Remove the lower packer and check that the door slides and clears the base rail.
8. Screw three more screws (evenly spaced) through to the door lintel to fully support the track.
9. Place one screw through to the end hoop at the left hand end of the door track, check the door sliding action.
10. Place the two door guides each side of doorway.
11. Place a screw through each end of the door track where the door rollers slide to act as a stop for the door rollers so that the door cannot slide off the track at its ends.
12. Fit the door handle. **(Pic D2) see below**

**Note:** If you want the door to slide to the right instead of the left, you will need to modify the pre-set location of the door rollers. (Please call for more details Ph: 0508 733 728)

Exterior view of door track (Pic D1)



Door Handle – (Pic D2)  
slot into groove and place 2 x screws



Door guide bracket (Pic D3)



(Pic D4)



(Pic D5)



### Auto roof vent opener (supplied as an optional extra with roof vented models)

The auto roof vent opener uses a wax filled expansion cylinder that automatically expands when the internal tunnel house temperature rises. When the cylinder expands it then 'pushes' on the handle of the roof vent and opens the vent from an approximate temperature of 15degC

The auto roof vent opener may be fitted as an accessory to any model Tunnelhouse that includes a roof vent. If being fitted at a later date, you will need to drill the mount holes for the brackets as shown.

If you have ordered your Tunnelhouse with an auto vent opener included – the bracket mounts will already be drilled.

Expansion cylinder part attached to handle



Locate pivot foot to handle and bracket as shown



437mm from handle pivot bolt to first bracket bolt (457mm to 2<sup>nd</sup> bracket bolt)

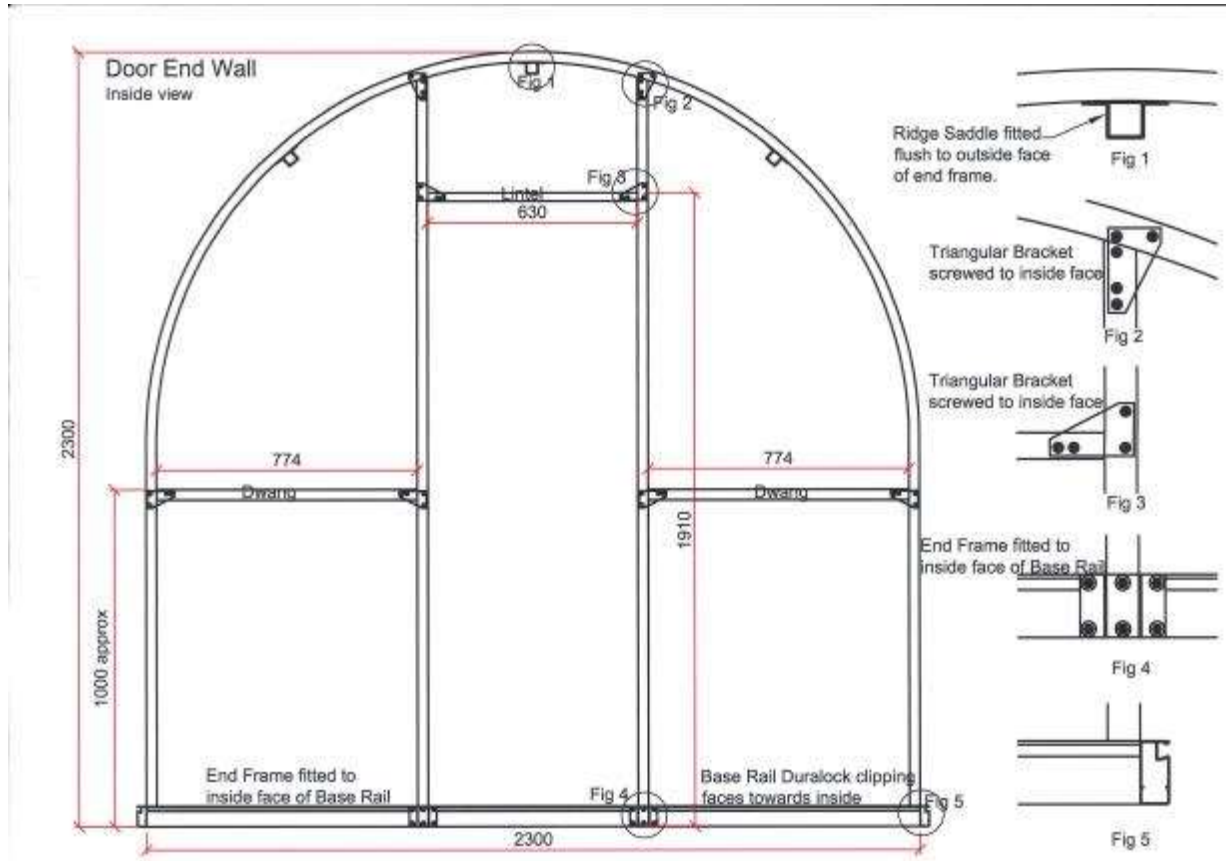


Underside view

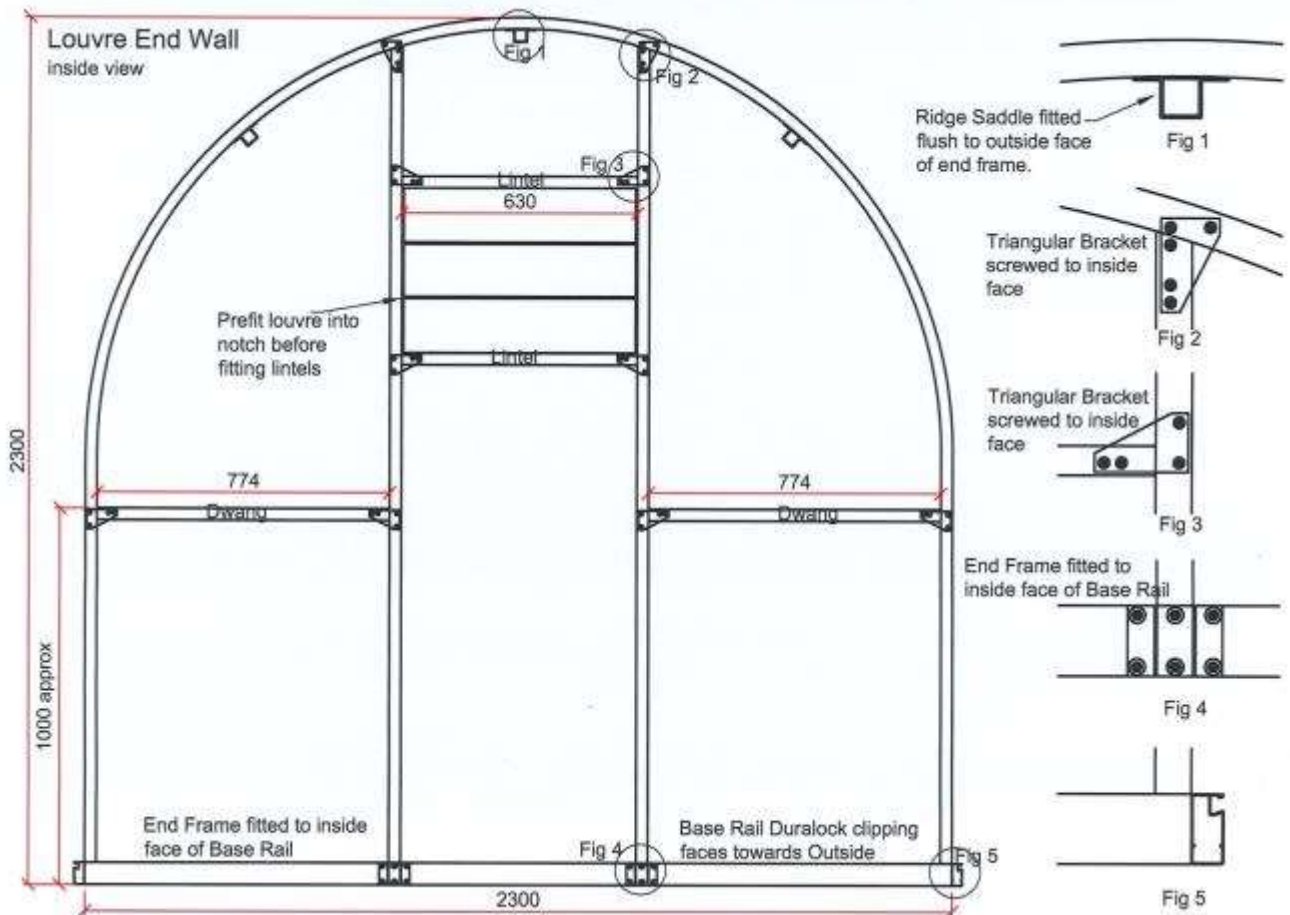




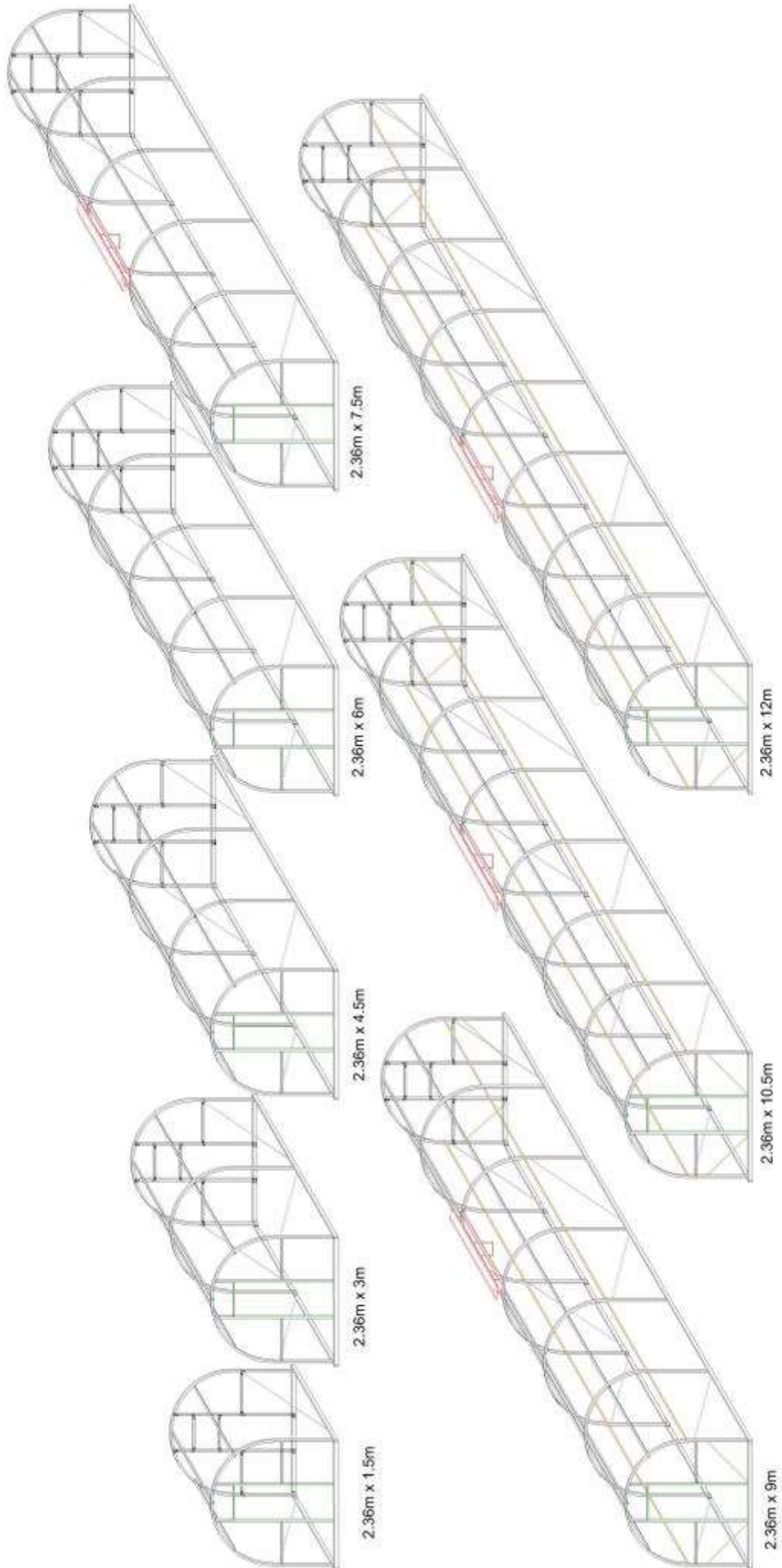
Reference drawing: Door End Wall Inside view with bracket detail

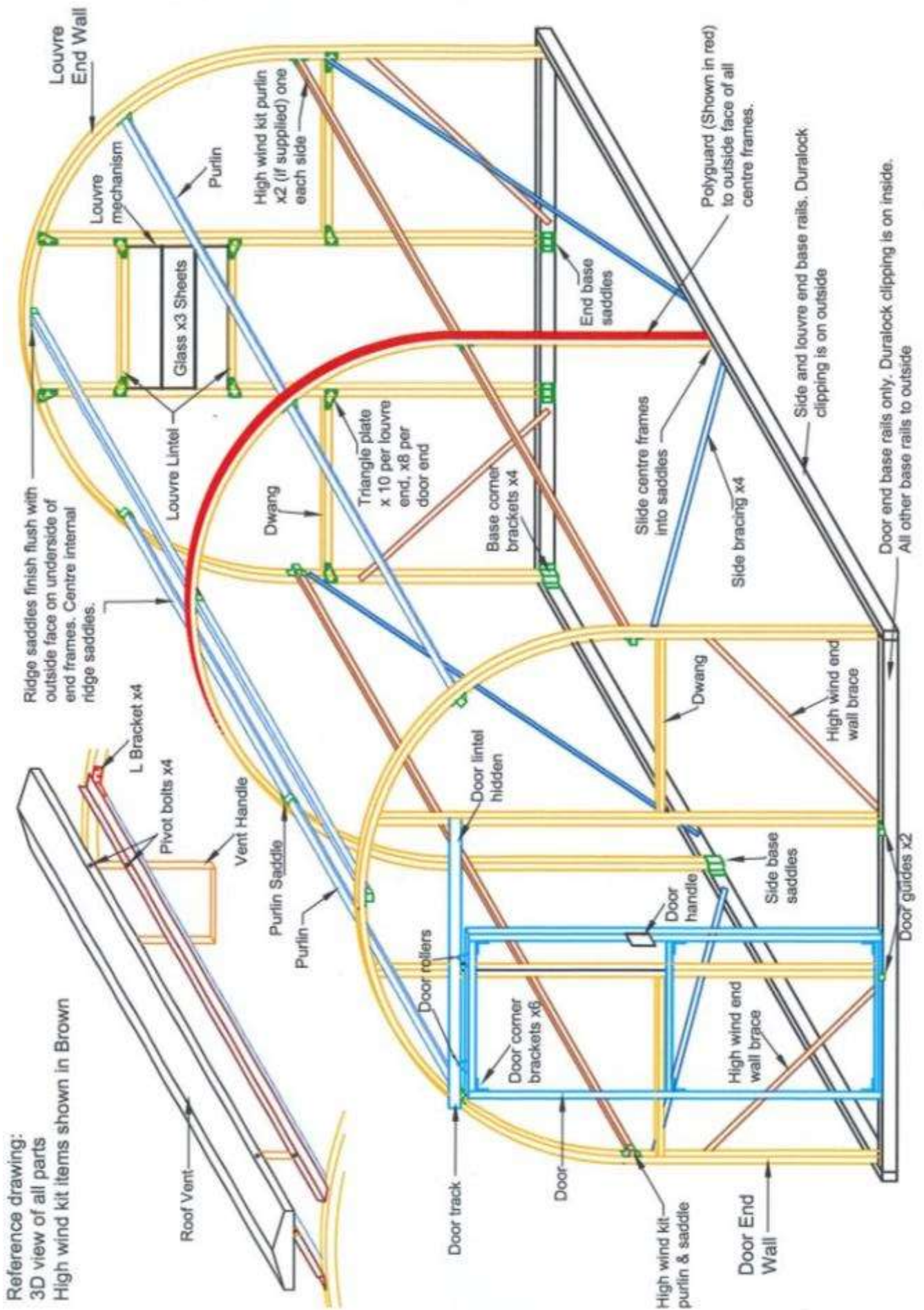


Reference drawing: Louvre End Wall inside view with bracket detail (will include louvre window if that option has been chosen)









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