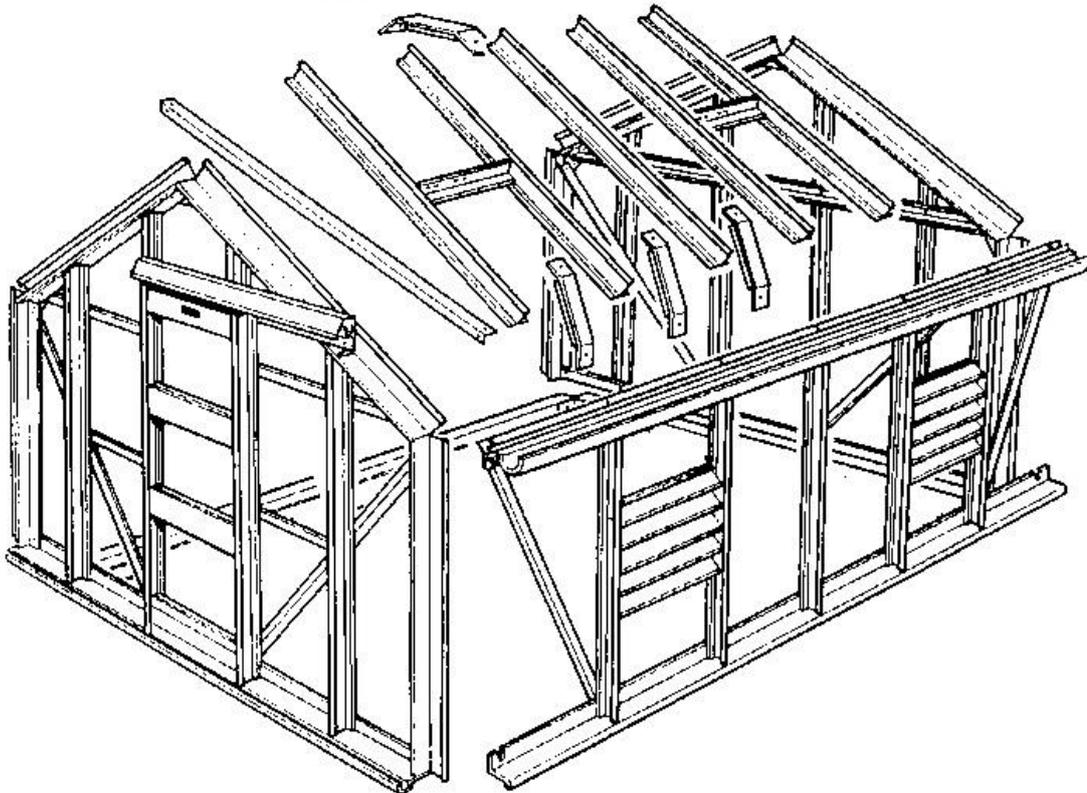
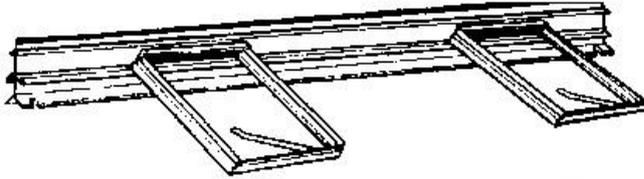




# Statesman Glasshouses



**Instructions & Illustrations for the Redpath Statesman Series  
Glasshouse 2.57m x 3.80m or 2.57m x 5.04m**

**PLEASE TAKE CARE WHEN HANDLING GLASS DURING ASSEMBLY OR USING THIS  
GLASSHOUSE – GLASS CAN BREAK FROM IMPACT OR STORM DAMAGE,  
STAY OUTSIDE OF THE GLASSHOUSE IN HIGH WIND OR STORM CONDITIONS**

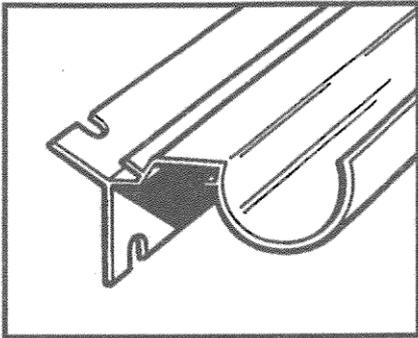
16 Bounty Place, Kelvin Grove, Palmerston North 4414

Freephone: 0508 733 728

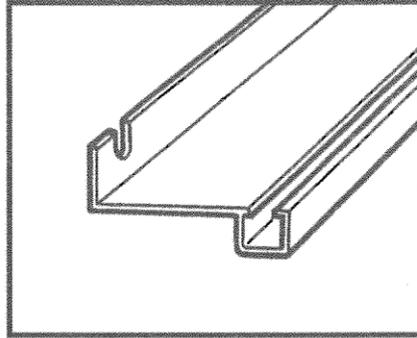
[www.redpath.co.nz](http://www.redpath.co.nz)

As of 22.09.14

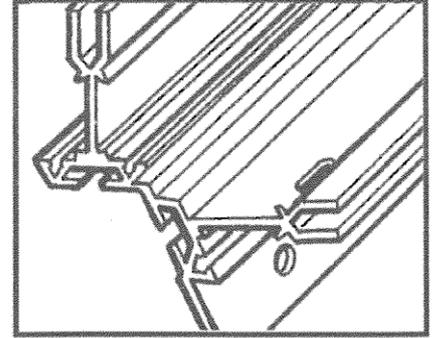
# COMPONENT DRAWINGS (Not to scale)



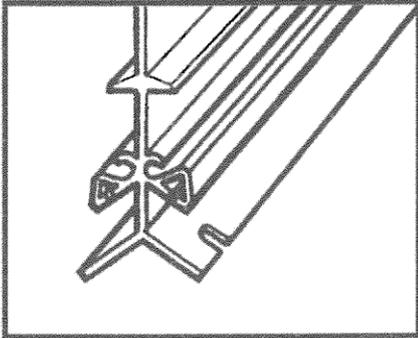
EAVES BAR/GUTTER



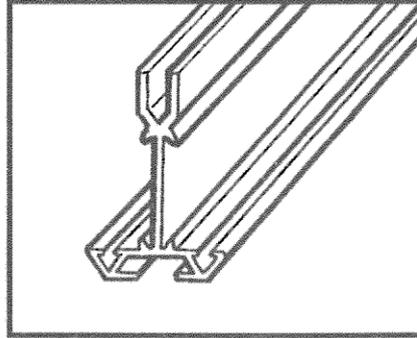
DOOR END CILL



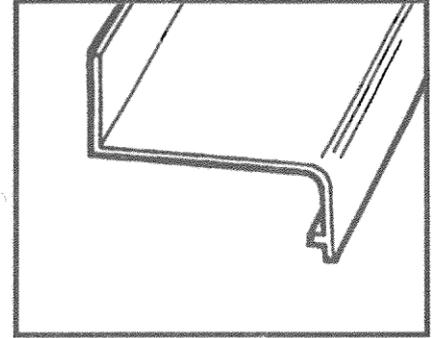
CORNER BAR



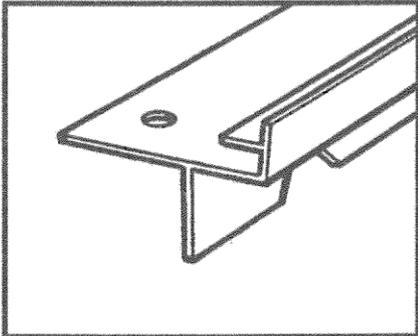
RIDGE



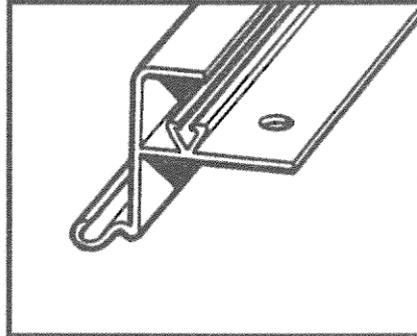
GLAZING BAR



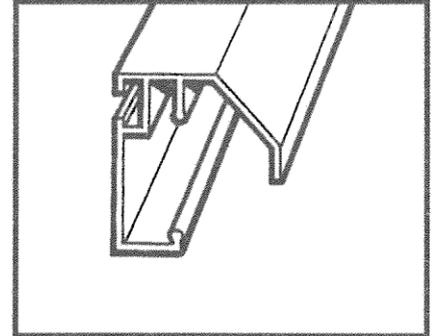
SIDE CILL



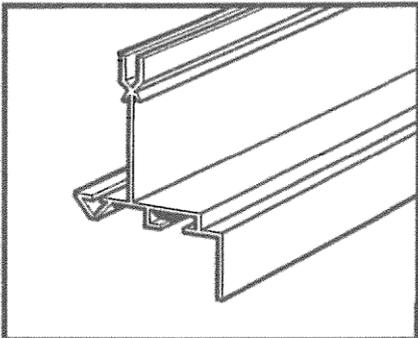
VENT BOTTOM RAIL



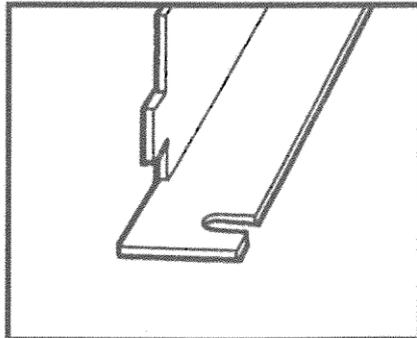
VENT TOP RAIL



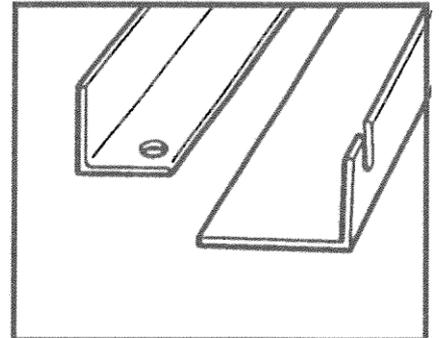
TOP DOOR TRACK



VENT SIDE RAIL

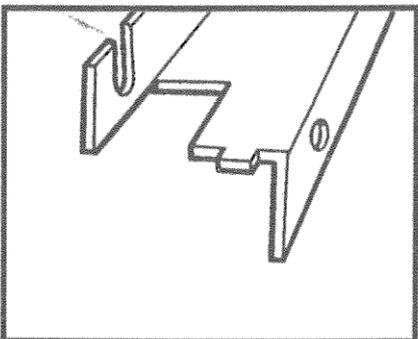


VENT SLAM BAR

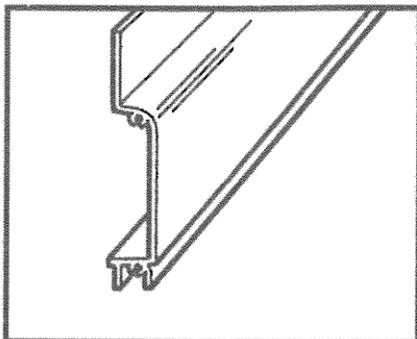


BRACING  
ANGLE

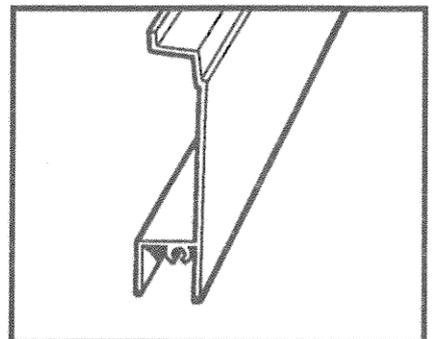
HORIZONTAL  
BRACING  
ANGLE



DOOR TRACK SUPPORT

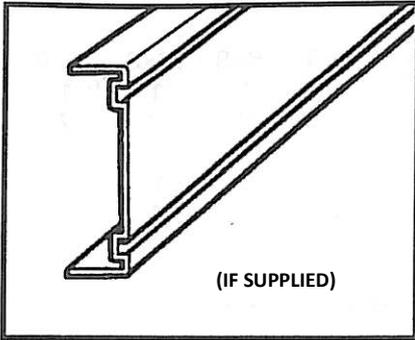


DOOR TOP/BOTTOM PANEL



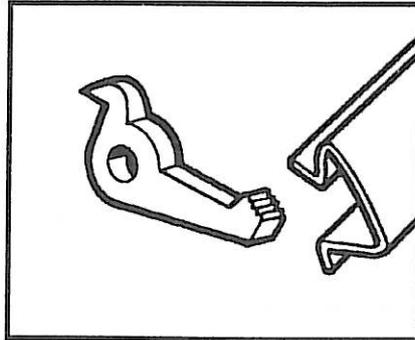
DOOR INFIL PANEL

**FITTINGS WITHIN THE KIT (Not to scale)**



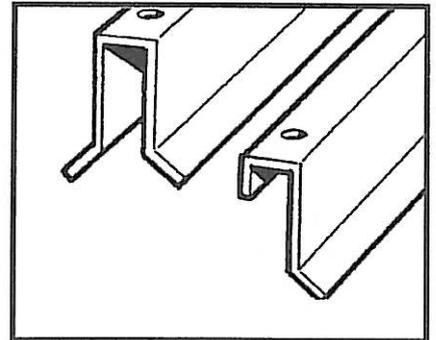
(IF SUPPLIED)

BASE (ALLOY)

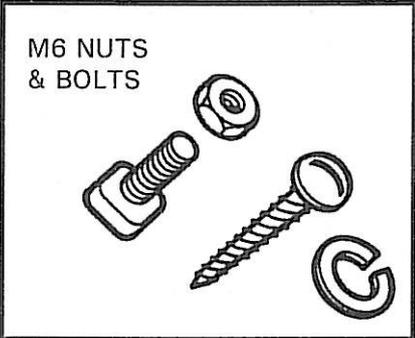


DOOR CATCH

CLIP CAPPING



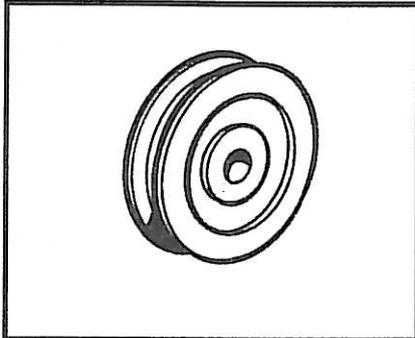
GLAZING CAPPING



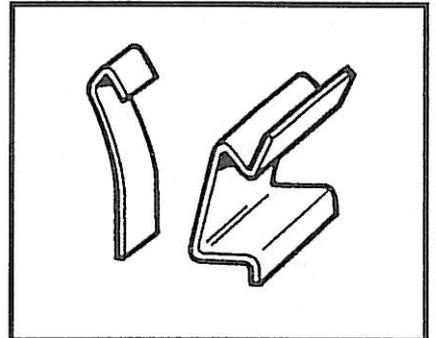
M6 NUTS  
& BOLTS

SELF TAPPING SCREWS

SPRING WASHER

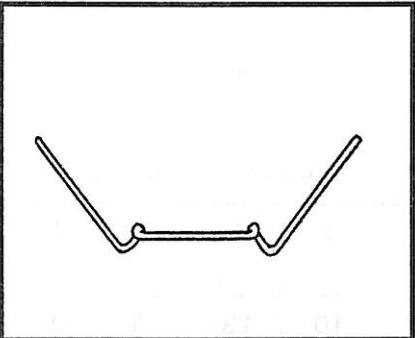


DOOR WHEEL

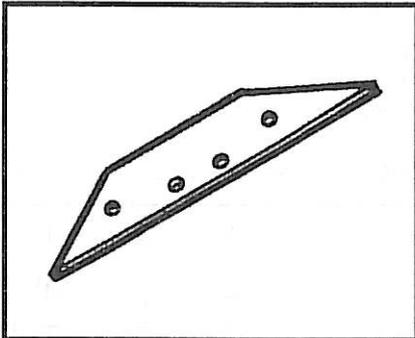


OVERLAP CLIP

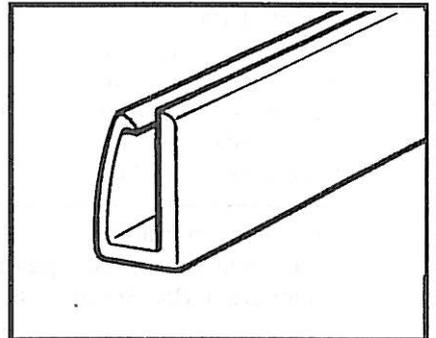
STAINLESS GLAZING CLIP



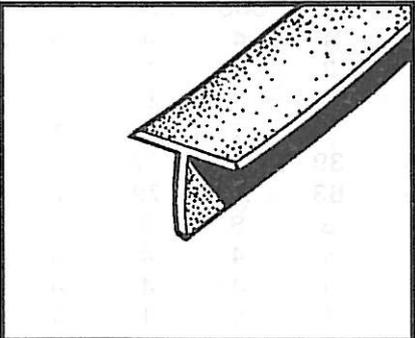
STAINLESS WIRE CLIP



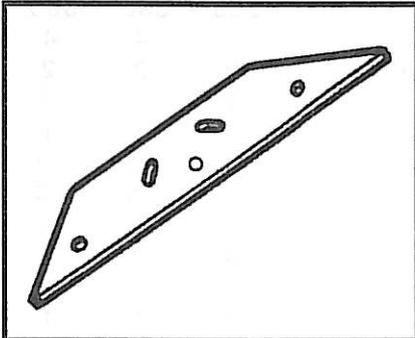
EAVE GUSSET PLATE



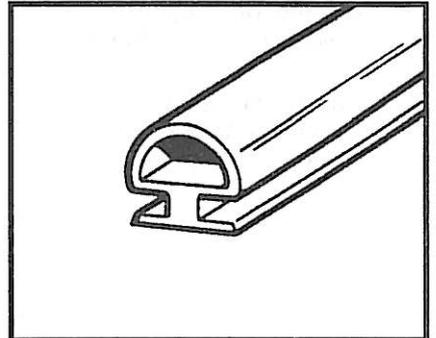
BLACK DOOR SKID



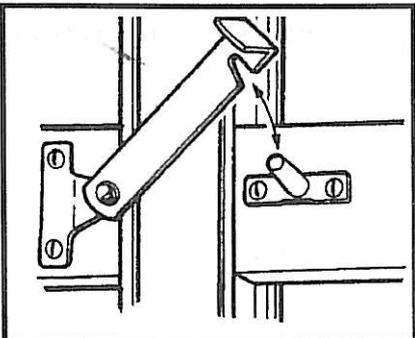
BLACK DRAUGHT EXCLUDER



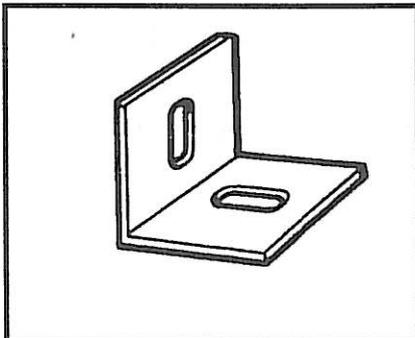
RIDGE GUSSET PLATE



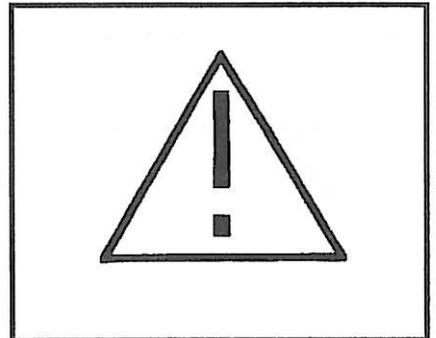
NEOPRENE BEADING



DOUBLE DOOR CATCH



BASE ANGLE/SMALL  
DOOR TRACK SUPPORT



BEWARE!

## PARTS LIST – FOR GLASSHOUSE SERIES

	2.57m x 3.80m	2.57m x 5.04m
1. Ridge	1	1
2. Gutter/Eave	2	2
3. Side Cill	2	2
4. Side Angle	4	8
5. Door End Cill	1	1
6. Rear End Cill	1	1
7. Rear End Angle	1	1
8. Short Door End Glazing Bar	2	2
9. Long Door End Glazing Bar	2	2
10. Diagonal Angle	2	2
11. Short Horizontal Angle	2	2
12. Medium Horizontal Angle	2	2
13. Short Rear End Glazing Bar	2	2
14. Long Rear End Glazing Bar	2	2
15. Diagonal Angle	2	2
16. Corner Bars in 2 packs of 4	8	8
17. Roof Bars	10	14
18. Side Bars	10	14
19. Roof Diagonal Angle	2	4
20. Roof Vent Pack (made up of 2 side rails, 1 top rail, 1 bottom rail, 1 slam bar)	2	4
21. Door Panel Pack (made up of 1 top panel, 1 bottom panel, 3 intermediate panels, 1 Door track support)	1	1
The <u>Double</u> Door Panel Set <b>does not</b> have the door track support in it – it has double the amount of panels		
22. Door Posts (In pairs) N.B. Double Door has 2 pairs	1	1
23. Cantilevers T-Bar-Brace - Small	3	-
- Large	6	13
24. Bag of Fittings	1	1
25. Glazing Beading	400	500
26. Gusset Plates - Eave	4	4
- Ridge	2	2
27. Casement Stays	2	4
28. Top Door Track	1	1
29. Panes of Glass		
A. 610mm x 610mm	35	43
B. 610mm x 457mm	55	71
F. 610mm x 305mm	8	8
G. Small Corners	4	4
H. Large Corners	4	4
I. Door End Apex	2	2

Glass is supplied from your local merchant. (The glass IS NOT freighted with the glasshouse due to the high likelihood of the glass being damaged in transit). Redpath will advise your local merchant's for delivery.

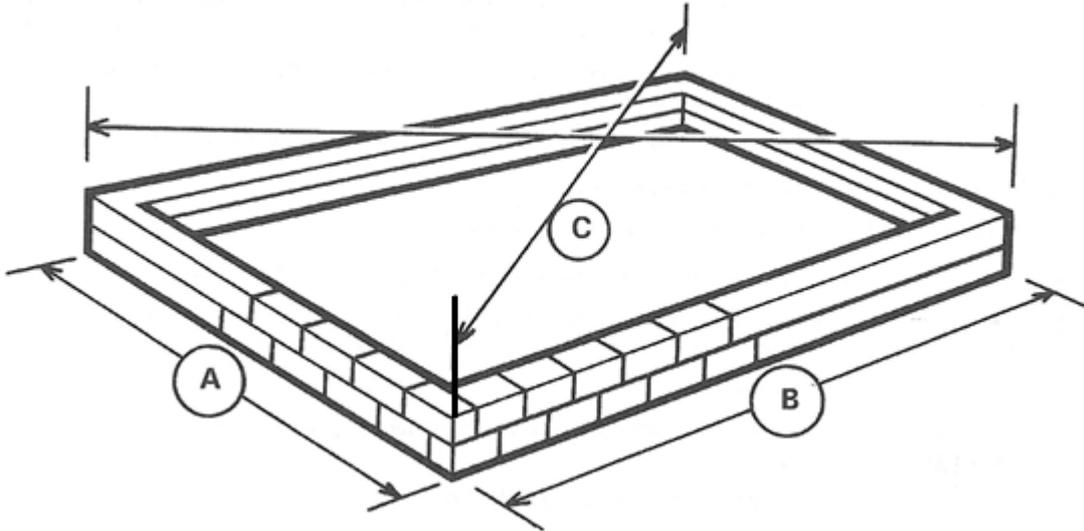
# REDPATH GLASSHOUSE BASE DIMENSIONS

(Materials not supplied)

Base material may be: Timber, Brick, Block, or Concrete

(Dimensions shown are to the exterior edges)

The dimensions given below are for the base & ground anchoring system of your Glasshouse. You will need to supply the materials & construct these using Concrete, Brick or Timber. **Ensure that dimensions A & B are not exceeded!** - As these are precise outside measurements enabling the aluminum base cill of the glasshouse (supplied) to overhang the edges of your base. Also ensure that the base is square by measuring across the corners (C) in both directions. Only when this measurement is equal is the base square! Check the level using a builder's spirit level – in directions (A), (B) & (C) The building & its glass cladding relies on the buildings base being level in all directions. The height of the base is typically up to 150mm above ground level, with a portion of the base being below ground level. If using Timber for the base, the base will need to be secured to the ground with pegs spaced at a width & depth to suit your chosen sites wind exposure & ground conditions.



MODEL: Nominal frame size	A (actual base size width)	B (actual base size length)	C (actual diagonal – check)
Statesman 2.43m x 3.65m	2570mm	3804mm	4591mm
Statesman 2.43m x 4.87m	2570mm	5040mm	5657mm

**Note: Please check with your local council whether a building permit is required for your glasshouse before construction commences**

## HELPFUL HINTS & ADVICE

- Please take your time and be sure to read all instructions carefully before assembling. The glasshouse structure does often require at minimum an “experienced DIY” type person or a semi-skilled builder to assemble.
- Locate the glasshouse in a sheltered or semi-sheltered position. Glass is a fragile product and strong winds, or flying debris could potentially damage the glass sheeting. Secure the roof vents in a closed position, close doors & windows if very windy. A shelter belt should be considered to protect the glasshouse and plants within in windy locations.
- Do not assemble the frame or attempt to glaze in windy, or damp conditions
- The glasshouse frame must be anchored to a permanent foundation / base. This will not only help secure it against strong winds, but will help prevent breakage of the glass via ground movement. Materials for the base are optional & are not supplied as part of this kitset.
- When building your own timber/brick/concrete foundations/base ensure that they are level and square and built to the correct outside measurements otherwise your frame will not be correct and the glass will not fit.
- Be sure all four corners of the constructed glasshouse are square before installing any glass, and do not install the glass until the glasshouse is secured onto a permanent foundation/base.
- Do not place your glasshouse in vulnerable locations such as under trees, near children’s playing areas, upon loose soils, in an open exposed place with open field or distant views.
- Children should not be allowed to play near the glasshouses. (Note: toughened glass can be fitted to the Redpath glasshouse range as an option & we can quote you for this feature if required)
- REMEMBER: Glass is fragile. Handle with extreme Care! , & beware of sharp edges! (Key Point). Protective clothing such as gloves, strong outer clothing and eyeglasses should be worn. Beware that flying glass from strong wind can/will travel some distance and can be a dangerous hazard for property and persons surrounding the glasshouse.
- Be careful when using agricultural chemicals such as fertilizers, fungicides and insecticides etc. in the glasshouse. Do not use chemicals that are for outside use only. Always read the labels very carefully.
- Do not push or lean on the glass panels. Do not lean weighty objects onto the glass. Use extra care when moving heavy or awkward objects such as tables, poles, internal frames etc. within or near the glasshouse.
- Do not latch the door when anybody is inside the glasshouse. Do not occupy the glasshouse in times of high wind or poor weather (hail etc)
- Be aware of the increased temperature in the glasshouse on a sunny day & allow for shading, or extra ventilation for these higher temperatures.
- Do not keep pets or other animals in the glasshouse & try to prevent their entry.
- When cleaning glass, do not exert too much pressure onto the glass.
- If your glasshouse is a powder coated one there are a few 5mm holes in the ends of some bars. These holes placed there for the powder coating process & and have no bearing on construction. (Key Point)

## DETAILED ASSEMBLY INSTRUCTIONS

**The contents of this carton are divided into the different frame assemblies that collectively make up the complete unit.**

It is recommended that each frame assembly is fully completed before moving on to the next.

The frames to be constructed are as follows:

1. SIDE FRAME – Two off.
2. REAR GABLE – One off.
3. DOOR GABLE – One off.
4. ROOF VENT – Two for 2.57m x 3.80m and four for 2.57m x 5.04m.
5. DOOR – One off
6. Additional parts such as the ridge, roof bars, eaves ties etc. are put on “loose” and are not pre-constructed into an independent frame.

## SIDE FRAME ASSEMBLY

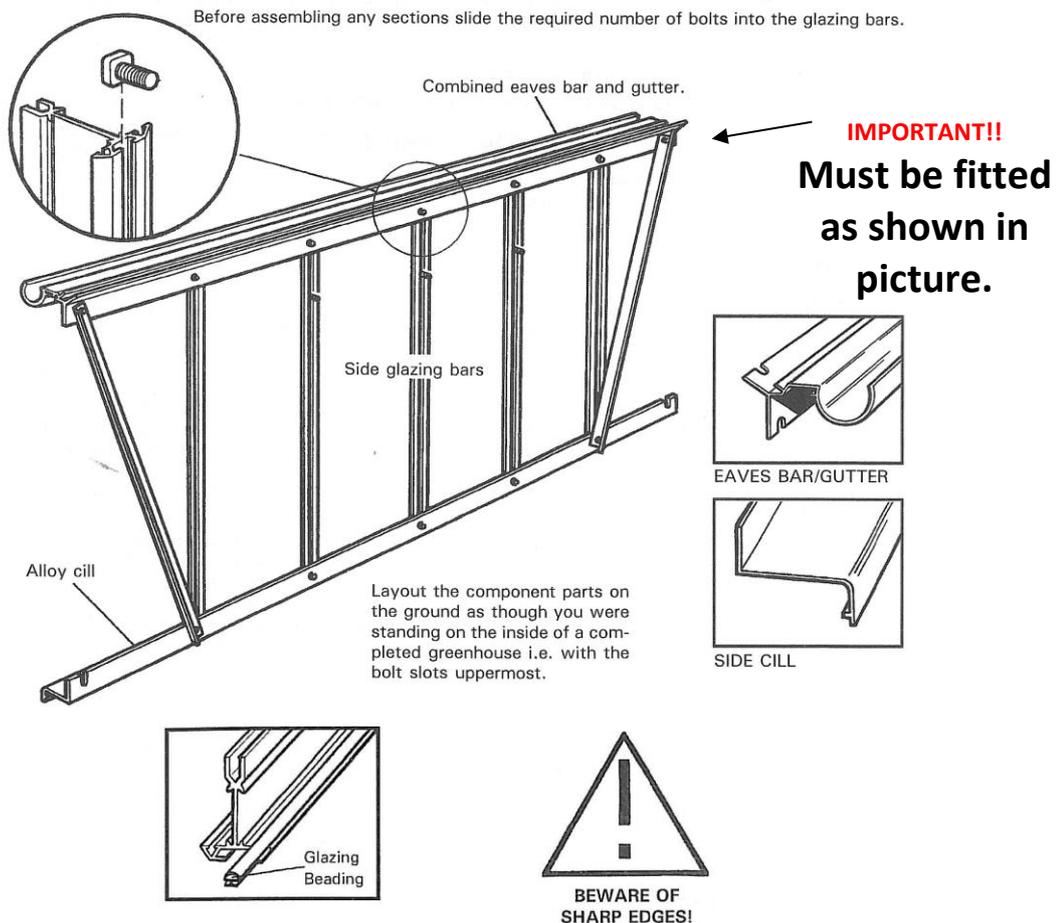
### PROCEDURE

For the point of this plan we have used a 2.57m wide x 3.80m Length as an illustration.

From the main box you require: Pack of side bars marked "side bars".  
Pack of gutters, angles and cills marked "side".

From the pack of fittings you need: Nuts and bolts + the Glazing beading.

You need for each frame: 1 gutter/eave, 1 cill, 2 diagonal angles and 5 side bars. Before assembling any of the side frame section you will need to slide the required number of bolts into the glazing bars. (See drawing). Assemble the side frames as shown.



1. Slide the glazing beading into each side bar taking care not to stretch the material. Trim off any surplus level with the ends of the glazing bar.
2. Lay the 9 components on the floor as though you were standing inside the glasshouse i.e. with the gutter and cill facing downwards and the bolt slot of the glazing bar upwards. (Key point)
3. Slide 3 bolts into each glazing bar, the middle bolt will be used later to attach the cantilever tee bars. Fix the combined eaves and gutter bars to the glazing bars by pushing the bolt previously inserted through the holes in the lower flange of the eave and secure with a nut. Ensure that the glazing bar is pushed up under the gutter and is tight up against the inside shoulder of the eave. (Key Point). Do the same with the rest of the glazing bars.
4. Fix the cill in a similar way to 3 above but start with the middle glazing bars and work outwards.
5. The 2 outer glazing bars have the angle ties bolted to them. Before attaching the nuts, place the tie bar over the bolts so that they point outwards towards the end of the eaves bar. They must be arranged so that the inside of the angle, in each case faces towards the middle of the house.  
N.B. for the 3.804m model there are 2 angle ties per side, for the 5.040m there are 4 per side: the extra braces are centrally positioned (diagonally like the 2 end ones) for additional strength.
6. Ensure that the glazing bars are tight up against the cill and inside shoulder of the eave, tighten all nuts. The nuts and bolts are aluminum and only require one turn with the spanner after first finger tip tightening. (Key Point).
7. Do exactly the same with the other side frame.

**WELL DONE! YOU HAVE SUCCESSFULLY COMPLETED THE 2 SIDE FRAMES!**

## REAR WALL END ASSEMBLY

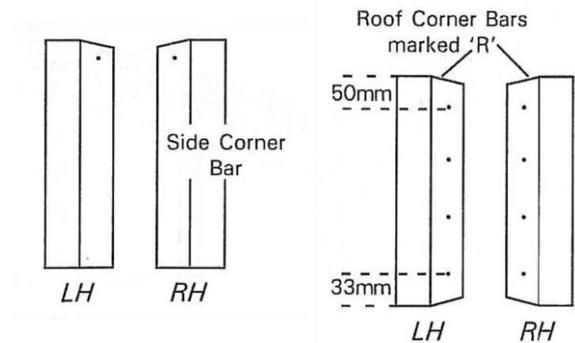
For the construction of this frame you require from the main box:

- 1 pack of corner bars marked “corner bars”
- 1 rear end pack marked “rear end”
- 1 rear end cill marked “rear end”
- 1 rear end horizontal brace marked “rear end”.

From the pack of fittings you need:

- nuts and bolts
- Glazing beading and gusset plates – 1 large (ridge plate) and 2 small (eave plates).

These plates are not in the pack of fittings but are taped up with the casement stays elsewhere in the box.

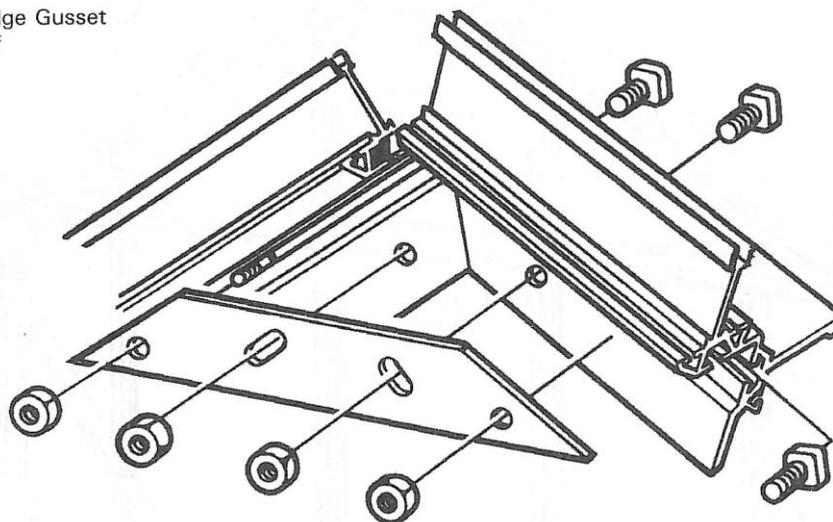


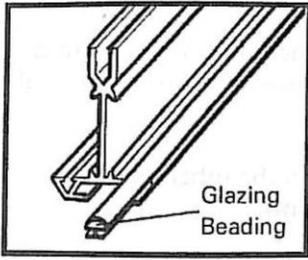
1. Starting with the pack of corner bars split the tape holding them together and first identifies the 2 roof bars from the 2 sidebars. The sidebars have one hole and one mitre, both at one end. The other end has no hole and is square cut. The roof bars have 4 holes in the flange and are mitred at both ends and in addition have a letter “R” written at the apex on the outside of the bar. N.B. If your greenhouse is a painted one, the roof corner bars will not be marked with a letter “R”. They can be identified from the sidebars as outlined above. (Key Point)

The bars are also handed so you must identify the left and right hand. Standing up, hold one side bar vertically in your left hand, the other in your right. Rotate the bars so that the 2 bolt slots are facing in towards you, with the mitres at the top (inside view). Viewed this way the 2 mitres should run down to each other. The roof bars can be handed similarly, keeping the bolt slots facing inwards and the letter “R” to the top. (With a painted model, the top can be identified by observing the 4 holes in the flange. The two holes nearest the end are at 50mm and 33mm centres. The 50mm end is the top i.e. nearest the ridge) On the outside you can identify them by ensuring that the “R”s (indicating ridge) are at the top, the mitres will then run into each other.

2. Slide the glazing beading into the 4 vertical glazing bars and the 4 corner bars, taking care not to stretch the material. Trim off any surplus level with the end of the bars. N.B. The corner bars have 3 grooves to receive the glazing bead; do not put any in the middle one. (Key point).
3. Lay out the components of the frame on the ground as though you were standing on the inside i.e. with the bolt slots uppermost. Ensure that, having correctly identified the roof from the side corner bars, left and right hands (see previous text) you have the roof bars with the letter “R” (indicating ridge) at the top on the outside, i.e. towards the ground. (Key Point)
4. Slide 2 bolts into each corner bar bolt slots (facing inwards) 1 at the top and 1 at the bottom. Put a nut on and lightly tighten, leaving them approx. 2” from the end of each bar. These will be used later in the general assembly.
5. Starting at the apex (2 corner bars opposite each other marked “R”) slide 1 bolt into the other bolt slot i.e. the one that is facing upwards and is set at 90° to the other – 4 above. (Key Point)

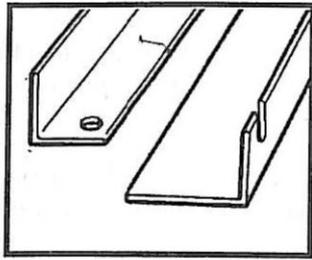
Details of Ridge Gusset Plate on Roof





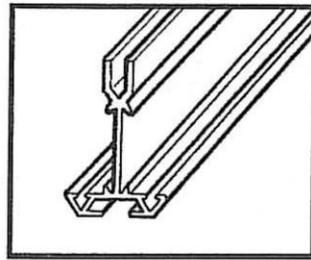
Glazing Beading

No Beading required

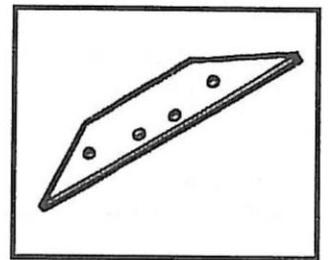


BRACING ANGLE

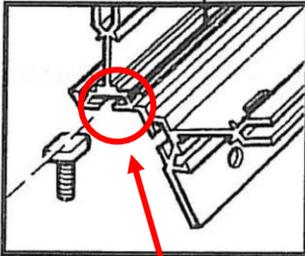
HORIZONTAL BRACING ANGLE



GLAZING BAR



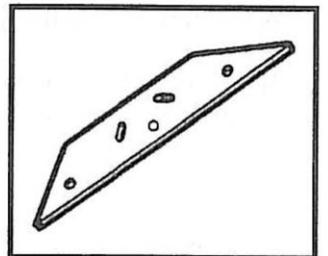
EAVE GUSSET PLATE



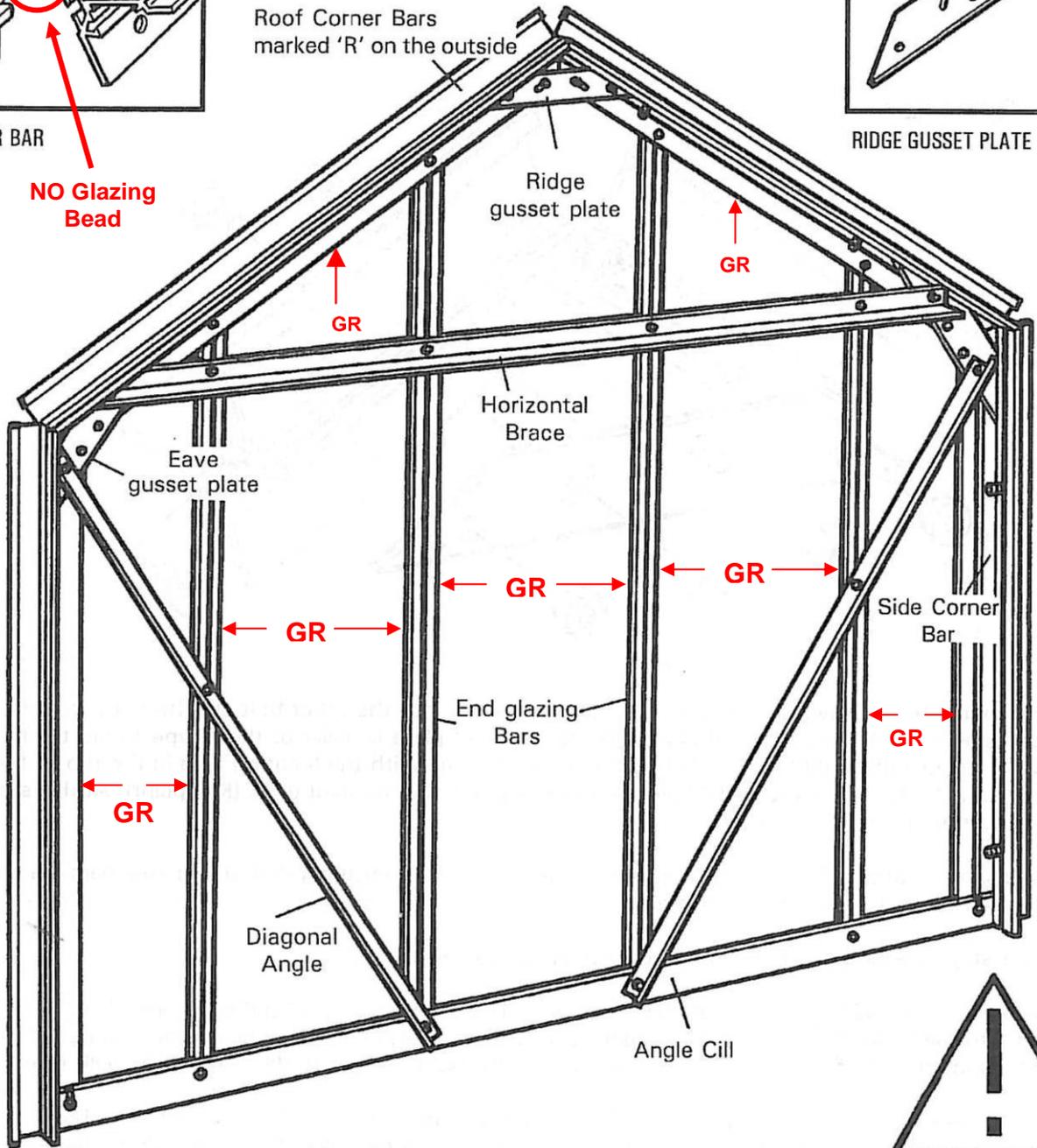
CORNER BAR

**NO Glazing Bead**

Roof Corner Bars marked 'R' on the outside



RIDGE GUSSET PLATE

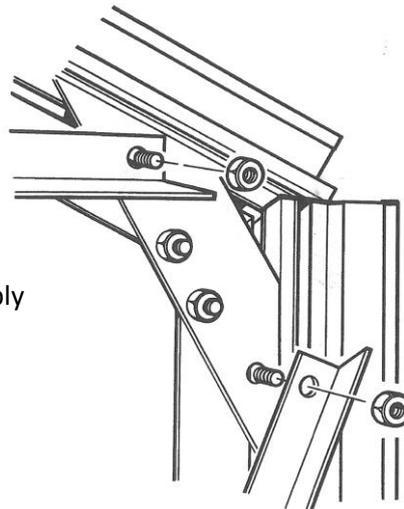


**BEWARE OF SHARP EDGES!**

**GR = GLAZING RUBBER**

6. Place the Ridge gusset plate (larger of the 2 types) over the bolt, slide the plate left or right until the slotted hole in the plate lines up with the locating hole in the flange nearest to the end of the corner bar. Put nuts on both bolts i.e. flange and plate, fingertip tighten only. **(Key point)**
7. Do exactly the same with the other roof corner bar ensuring that the two bars are pressed tight up together behind the Ridge gusset plate.
8. Now moving to the eave gusset assembly, slide one bolt into the other bolt slot (the one that is facing upwards and is at 90° to 4 above). Place the eave gusset plate (smaller of the 2 types) onto the bolt and move it left or right until the next hole in the plate lines up with the locating hole in the top on the side corner bar. Place a bolt through the hole and put a nut on fingertip tight only. (Key point). At this stage do not put a nut on the first bolt.
9. Do the same with the other part of the same eave gusset plate, ensuring that both corner bars are tight up against each other behind the eave plate.
10. Repeat steps 8 and 9 at the other corner with another eave gusset plate.
11. Attach the bottom cill, marked "rear end" in the box, to the left and right hand side corner bars by inserting a bolt into the facing bolt slot. Line the bolts up with the 2 slotted holes at the end of the cill, put nuts on and tighten up ensuring that the corner bars are pushing right down into the angle of the cill. (Key Point).
12. You can now attach the 4 vertical glazing bars to the bottom cill in a similar manner to 11 above, the two longer bars to the middle holes, and the shorter ones to the outer holes. Before attaching the nuts to the longer bars place the diagonal angles onto the bottom bolt and put a nut on fingertip tight only. Attach the other end of the angle brace to the bottom bolt of the eave gusset plate, put on the nut and finger tip tighten. (Key Point). Do the same with the other diagonal brace.
13. Moving to the top of the greenhouse, insert 3 bolts into the shorter two glazing bars and 2 bolts into the longer two glazing bars.
14. Now you can attach the long angle horizontal brace marked "rear end" in the box to the top bolts of the eave gusset plates. The angle should be facing upwards, put the nuts on and fingertip tighten.

Detail of Eave Assembly



15. You can now attach the 4 vertical glazing bars to the roof/corner bars. Slide the last bolt in each bar you inserted in 13 above to the end of each bar and insert them through the holes in the flange of the roof corner bar, place the nuts on and finger tip tighten.
16. Attach the diagonal angles to the 2 shorter glazing bars. Slide the second bolt previously inserted in 13 above to the middle of the bare and line it up with the hole in the diagonal brace, put the nuts on finger tip tight. (Key Point)
17. Now attach the horizontal brace to the 4 upright glazing bars utilizing the final bolts you inserted in 13 above. Put the nuts on finger tip tight. (Key Point).
18. The rear end is now almost complete. Before tightening all nuts check the corners to ensure they are tightly up against each other and that all the vertical bars are tight up against the angle of the rear end cill and corner bars. Tighten all nuts, the rear end if now complete

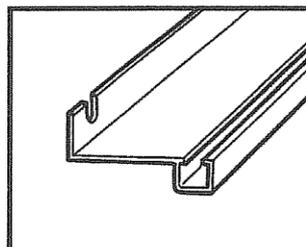
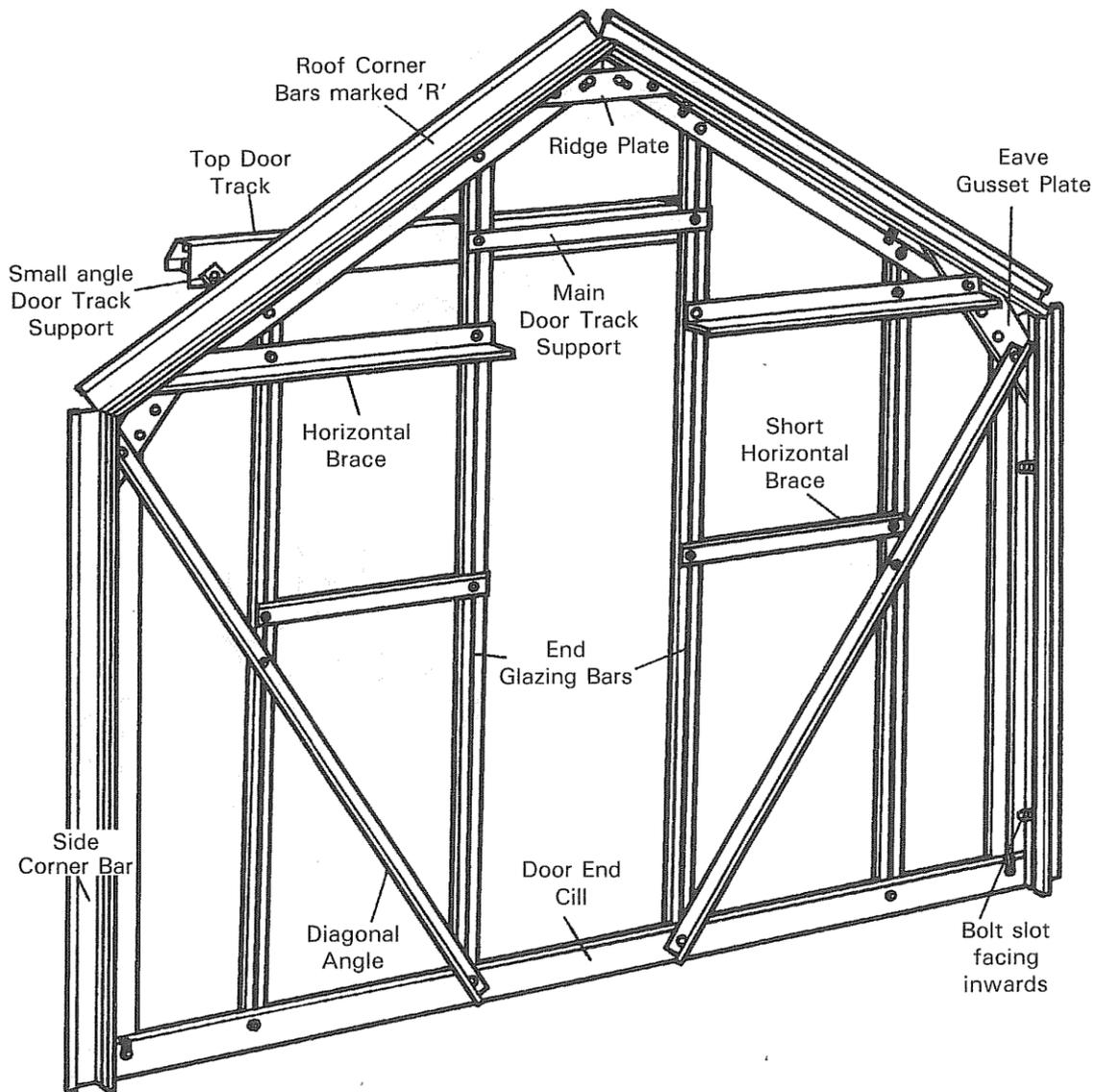
# SINGLE DOOR END ASSEMBLY

For the construction of this frame you require from the box:

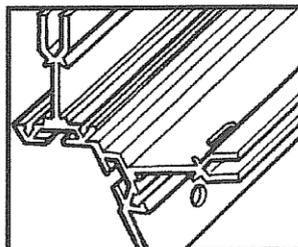
- 1 Pack of Corner Bars – marked “corner bars”.
- 1 Door End Pack – marked “door end”. 1 door end cill – marked “door end”
- 1 Main door Track Support – this section is taped up with the door panels, not with the door end. **(Key point)**.

From the main bag of fittings you need:

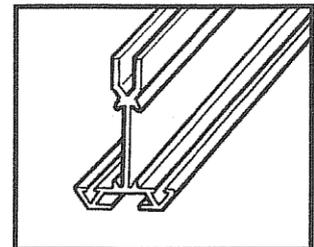
Nuts & bolts, glazing beading and gusset plates – 1 large (ridge plate) 2 small (eave plates). Remember, these plates are not in the pack of fittings but are taped together with the casement stays elsewhere in the box!



DOOR END CILL



CORNER BAR

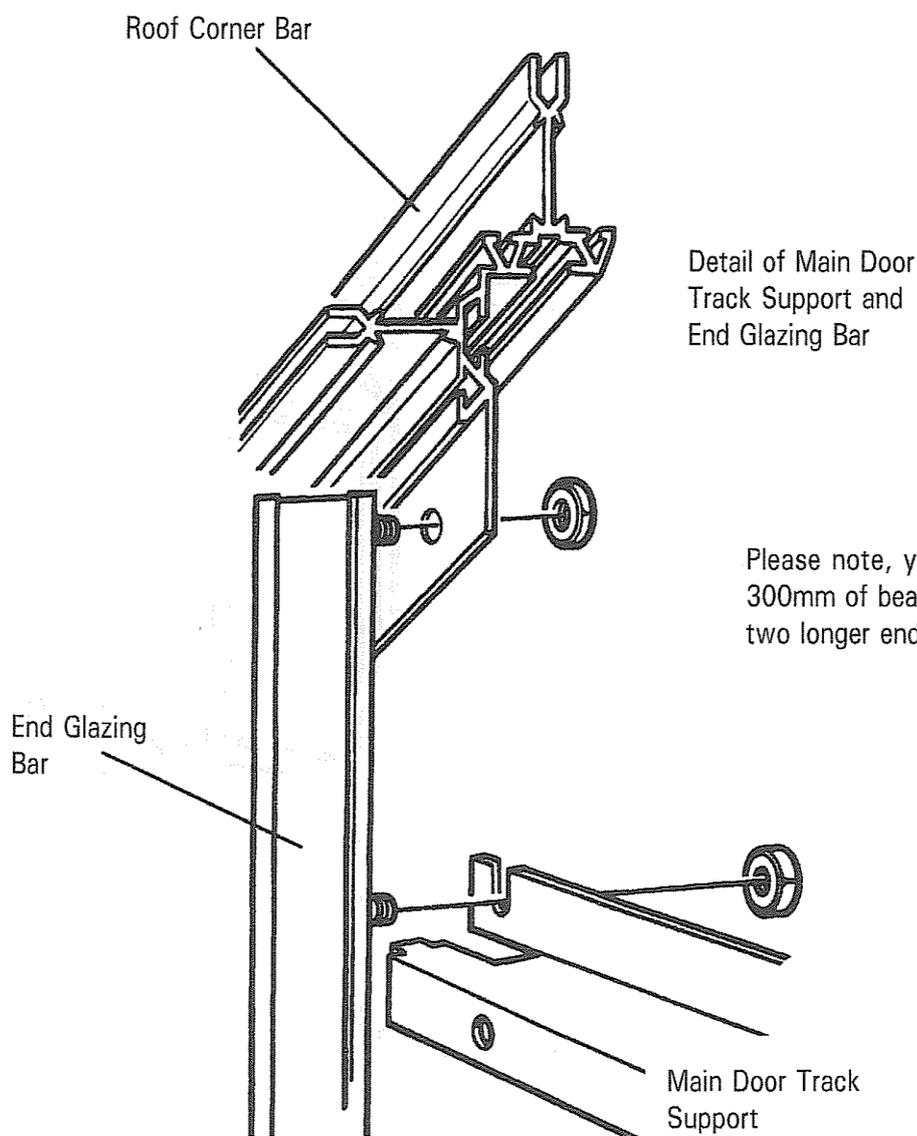


GLAZING BAR

SINGLE DOOR ASSEMBLY CONT.

PROCEDURE: The format for the single door end is identical to the rear end assembly up to and including step 12 so please refer to those items in the previous pages.

1. For step 13. Slide 4 extra bolts into each vertical glazing bar.
2. The long horizontal brace is replaced by 2 shorter ones that attach to the upper bolt of the gusset plate but stop at the longer middle bars to facilitate the doorway.
3. There are 2 additional short Horizontal braces that attach to the 2 shorter vertical glazing bars at a point immediately above where the diagonal angle bolts to the bar, then to the longer middle bars horizontally along which thus ensures the doorway remains well braced and perpendicular.
4. The main door track support (taped up with the door panels) can now be fitted at a point half way between the horizontal angle and the corner bar. It is important to note that the 2 slotted holes at the extremes of this section are facing upwards and not downwards. (Key point). **Do not fit the top door track at this stage.**
5. Check that all joints are tight and all braces are in position, and then tighten up all the nuts. The end is now complete.



# DOUBLE DOOR END

If you have purchased a double door for your greenhouse the procedure for construction of the gable is identical to the single door model. There are, however, a small number of differences outlined as follows:

There are only 2 packs of aluminium - double door corner bars  
- Double door end

The door end contains the cill and main door track support (which are separate on the single door model).

The apex gusset plate has a 5<sup>th</sup> hole in to accommodate a short glazing bar above the door.

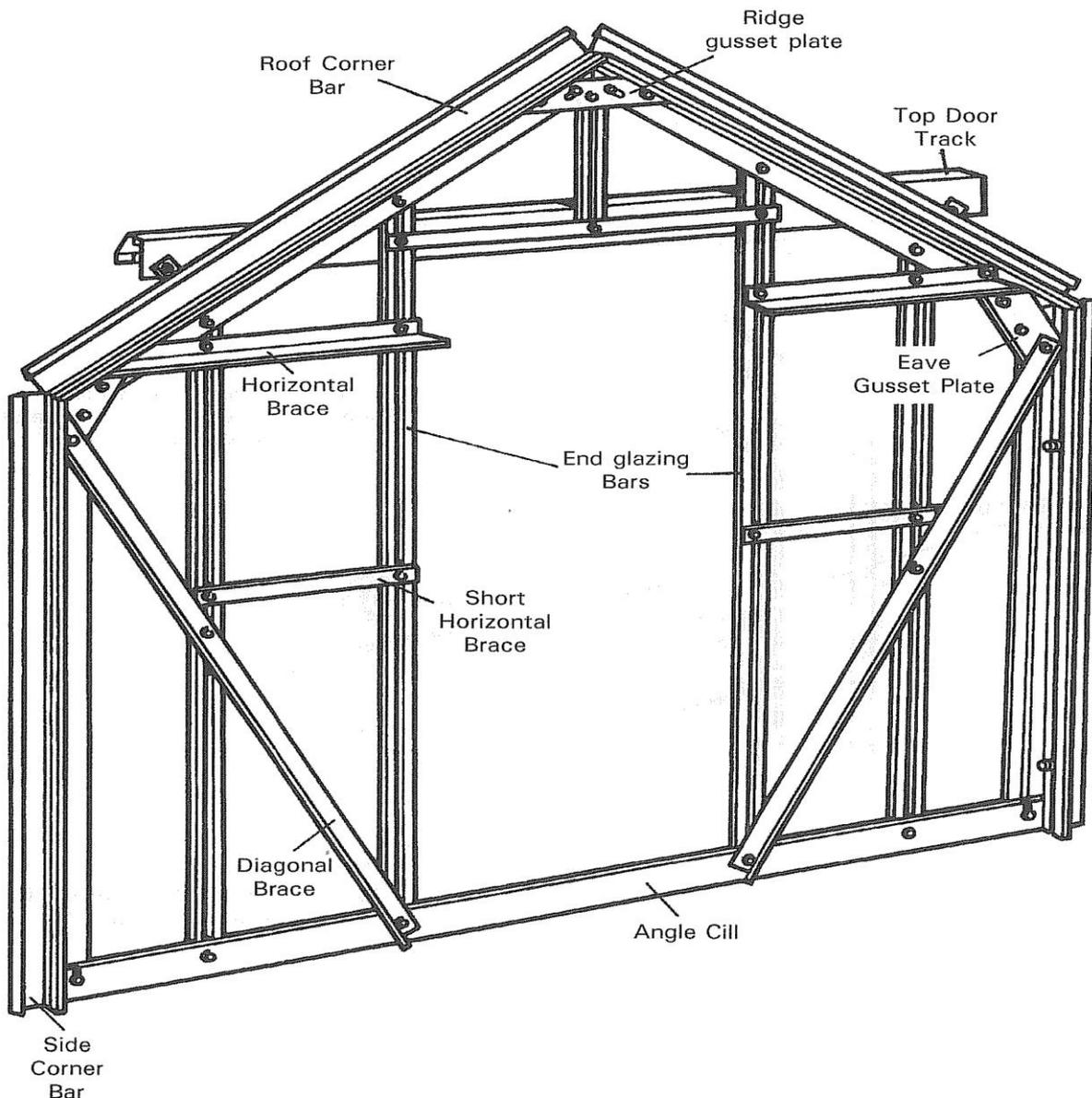
The horizontal and diagonal Angle braces are a little thicker and are made from unequal angle.

## PROCEDURE:

1. Follow the text and drawing on the previous pages as the construction is the same apart from some bars being shorter, longer and thicker.
2. Having fitted the main door track support in a similar way to the single one, you must not fit the short glazing bar that goes above it at this stage. **(Key point)**. This will be fitted later when the doors have been installed (see later text).

**Do not fit the top door track at this stage.**

You have now completed the main frames of the structure, which can now be joined together. You need not do this procedure on the base but any flat surface near the glasshouse site. If your base is prepared however, you can carry out the assembly there to save lifting it on later. But before this we construct the vents and doors.



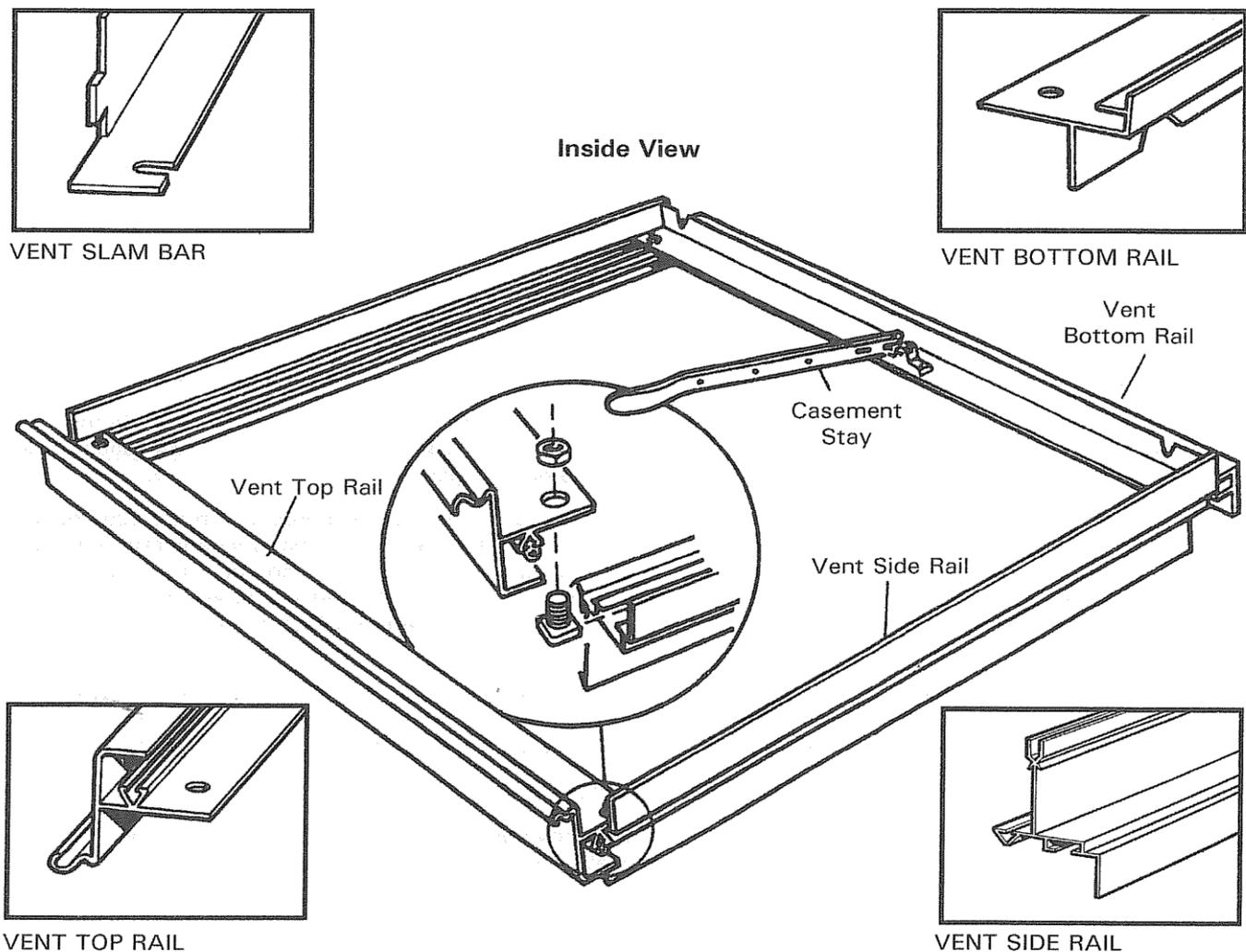
# ROOF VENT ASSEMBLY

The roof vent pack has 5 pieces of aluminium: and from the main box of fittings you require 6' of glazing beading, 4 nuts and bolts, 2 casement stay pins, 1 casement stay and 6 M4 stainless steel nuts and bolts.

## PROCEDURE:

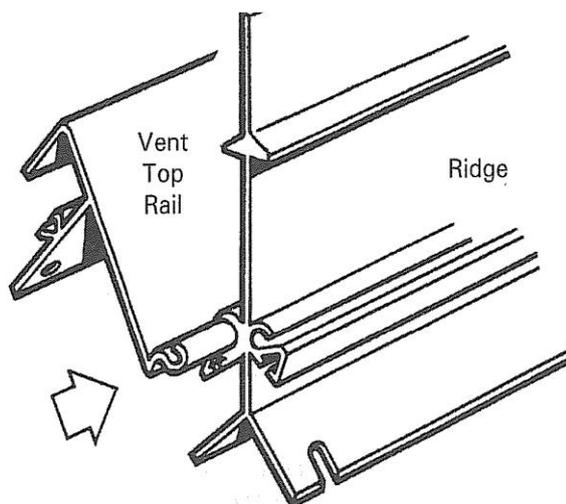
1. Identify the slam bar and attach the 2 stay pins to the outer side of the angle using the M4 stainless steel nuts and bolts.
2. Lay the 4 edge pieces of the vent on a level surface as though you were on the inside of the vent (with the bolt slots of the sidebars uppermost and the 'V' slots of the bottom rail uppermost). The top rail is arranged in such a way that the squared off end is to the bottom and the hooked hinge uppermost).
3. Slide the glazing beading into the slots in the side and top rails and trim to suit.
4. Insert a bolt into each end of the side rail bolt slots, put these bolts through the holes in the top and bottom rails, add nuts and lightly tighten. Check that all joints are secure and that the vent is square, and then tighten up the nuts.
5. Fit the casement stay using the M4 stainless steel nuts and bolts, putting the bolts through the holes in the saddle of the stay and through the 2 elongated holes in the bottom rail. Hold the nuts in place and tighten the bolts with a screwdriver.

Do the same with the other vents.



The vents can be positioned onto the ridge after general assembly by sliding them along the ridge from the end and locating them to the desired position.

**Do not fit the vent at this stage.**



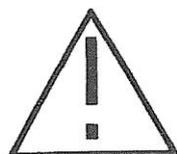
## DOOR FRAME ASSEMBLY

Components consist of:

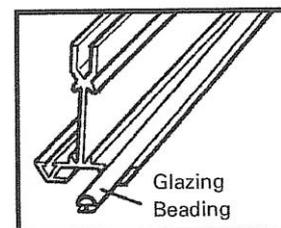
- 2 door-glazing bars
- 2 infill panels
- 2 top & bottom door panels

From the main bag of fittings you require

- 2 door wheels
- 2 clip on nylon door skids
- 2' lengths of black rubber draught excluder
- Door catches, self-tapping screws and spring washers
- 12' Glazing Beading

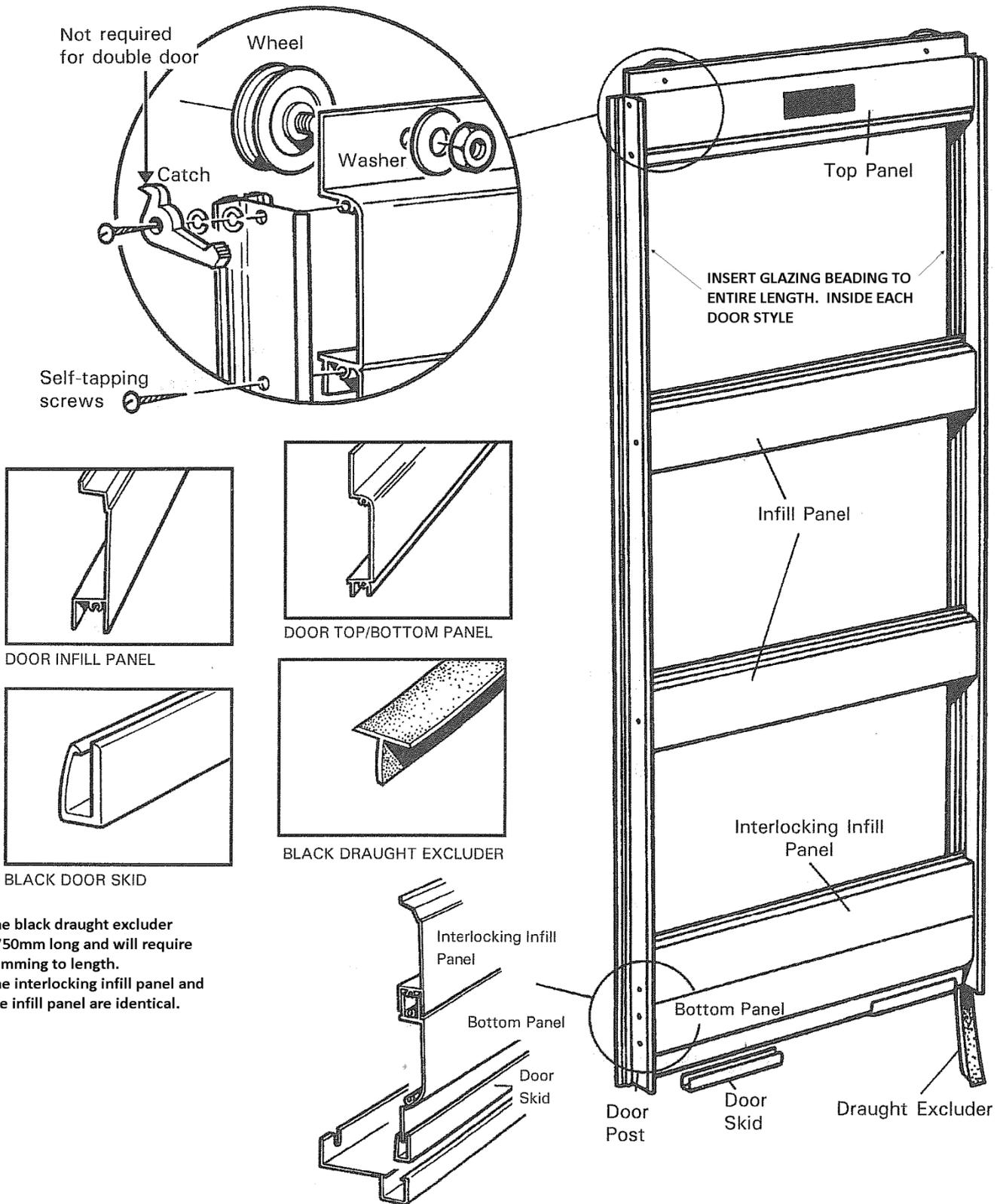


**BEWARE OF SHARP EDGES!**



1. Place the two sidebars on a level surface roughly two feet apart with the bolt slots facing downwards. The top of each sidepiece has two screw holes in it and the bottom has three. (**Key Point**)
2. Place the top, bottom and 3 infill panels in position as shown by the position of the screw holes in the sidepieces and the panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skids to fit on. The lower infill panel locks on to the bottom panel.
3. Fix the door together by screwing through the door sidepieces into the holes provided in the edge of the panels with the No. 8 half-inch self-tapping screws. DO NOT fix the top left hand side screw yet. The screw will go in more easily and without danger of trying to go crooked if you can put a small amount of grease on the screw before assembling the doors. Alternatively, you could insert the screws into the screw eyes of the door panels before assembling the door; this would have the effect of pre-self tapping the panels prior to assembly, making assembly easier.
4. Fix the top left hand side with the one-and-a-half inch screw provided. Put the screw through the door catch so that the serrated part is facing outwards and upwards. Next slip two spring washers on to the screw, and then fix the screw through the side of the door and into the top panel. (**Key point**).
5. Make sure all angles are square and tighten all screws.
6. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door) Put the washer over the bolt and secure with the nut provided, tighten until there is not movement on the bolt. The nuts are lock nuts and are harder to put on than normal nuts in general assembly. The wheel will revolve freely because it has ball bearings in it.
7. Slip the nylon door skids on each end of the bottom panel.

**DOOR FRAME ASSEMBLY CONT**



8. Turn the door over and insert the black rubber draught excluders in the groove (bolt slot) in each sidepiece of the door. Push up to the top of the door and trim off surplus at the bottom. With pair of pliers squeeze the groove together at the bottom so that the rubber will not slip down when the door is in its upright position.
9. Do not fit the door to the gable at this stage – wait until the structure is fully assembled prior to glazing.

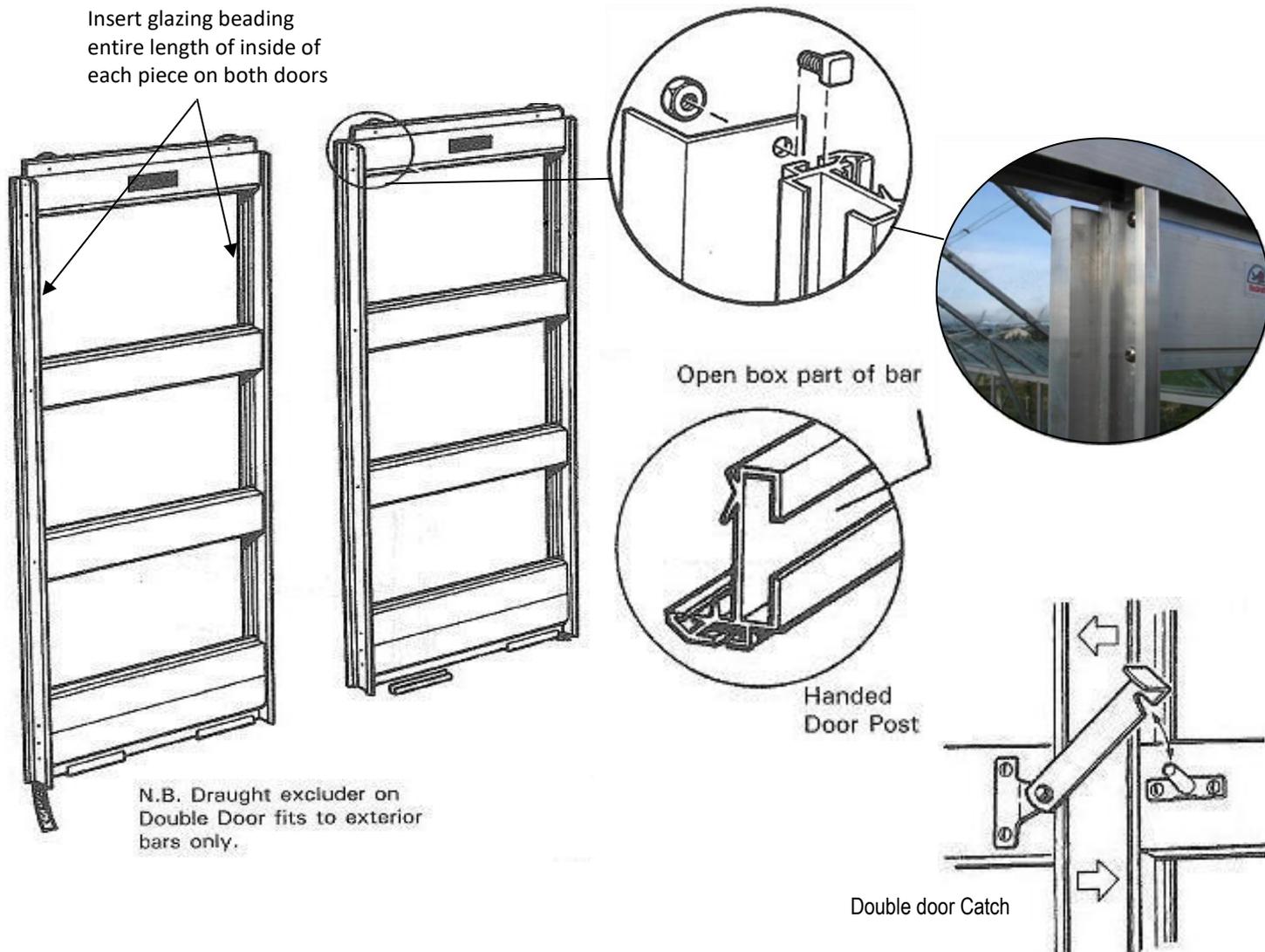
DOOR FRAME ASSEMBLY CONT

If you have a double door option you will need to assemble 2 doors of 457mm width. The doors are assembled in the same way as the single door with the exception of the doorposts that meet in the middle – these are handed.

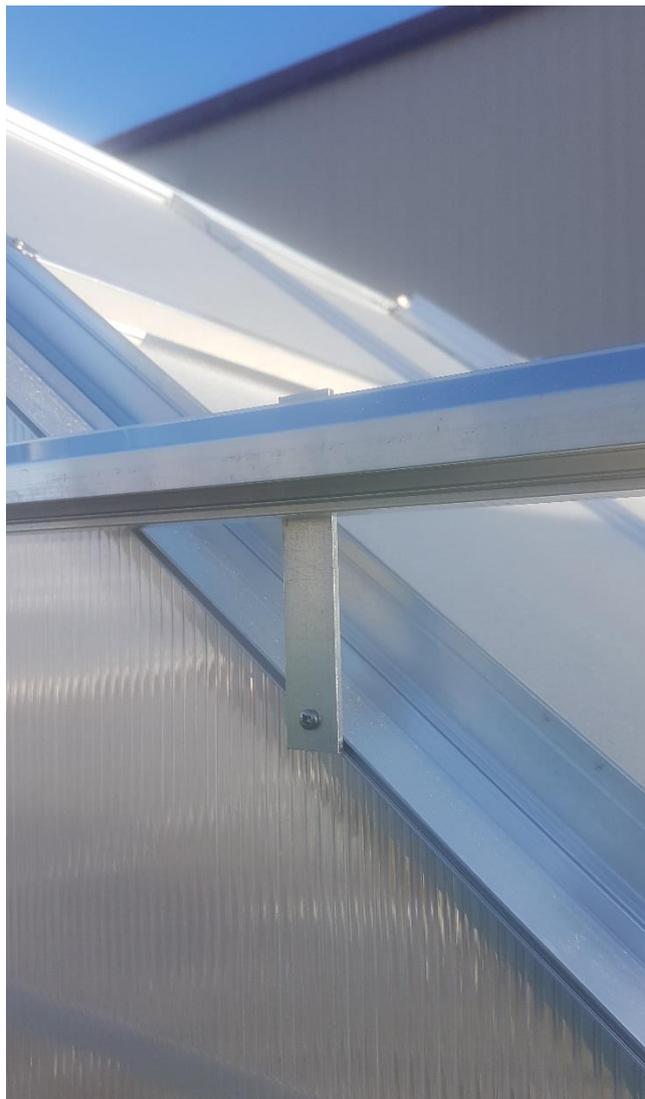
Looking at the door posts in profile with the 2 holes at the top (3 holes at the bottom) the open box part of the section goes to the outside i.e.  
on right hand door – left hand upright  
On left hand door – right hand upright

The door catches are attached to the upper outer screws (left hand door – top left, right hand door – top right).

Having assembled both doors you need to attach a piece of alloy angle to the rear of one of the handed doorposts. Insert bolts into the bolt slot of one of the handed doorposts, attach the angle and put on and tighten the nuts.



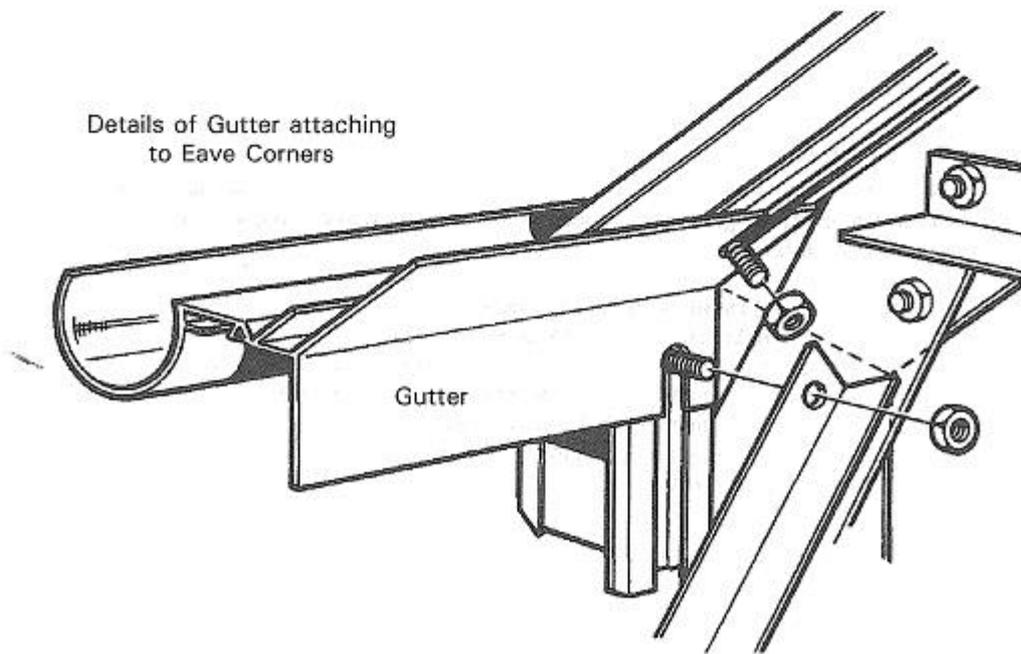
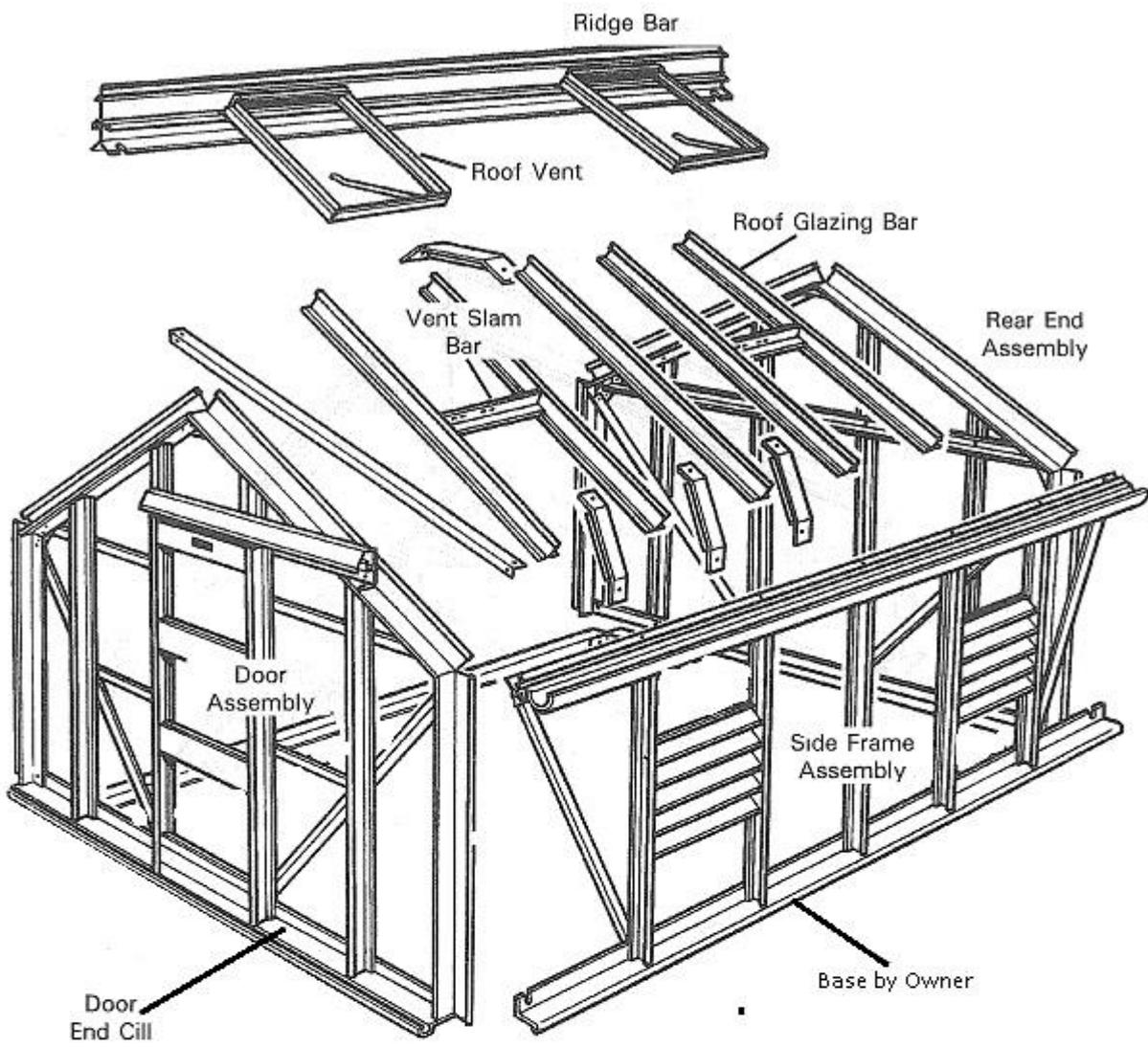
Door stay strap is located to support the door track if required



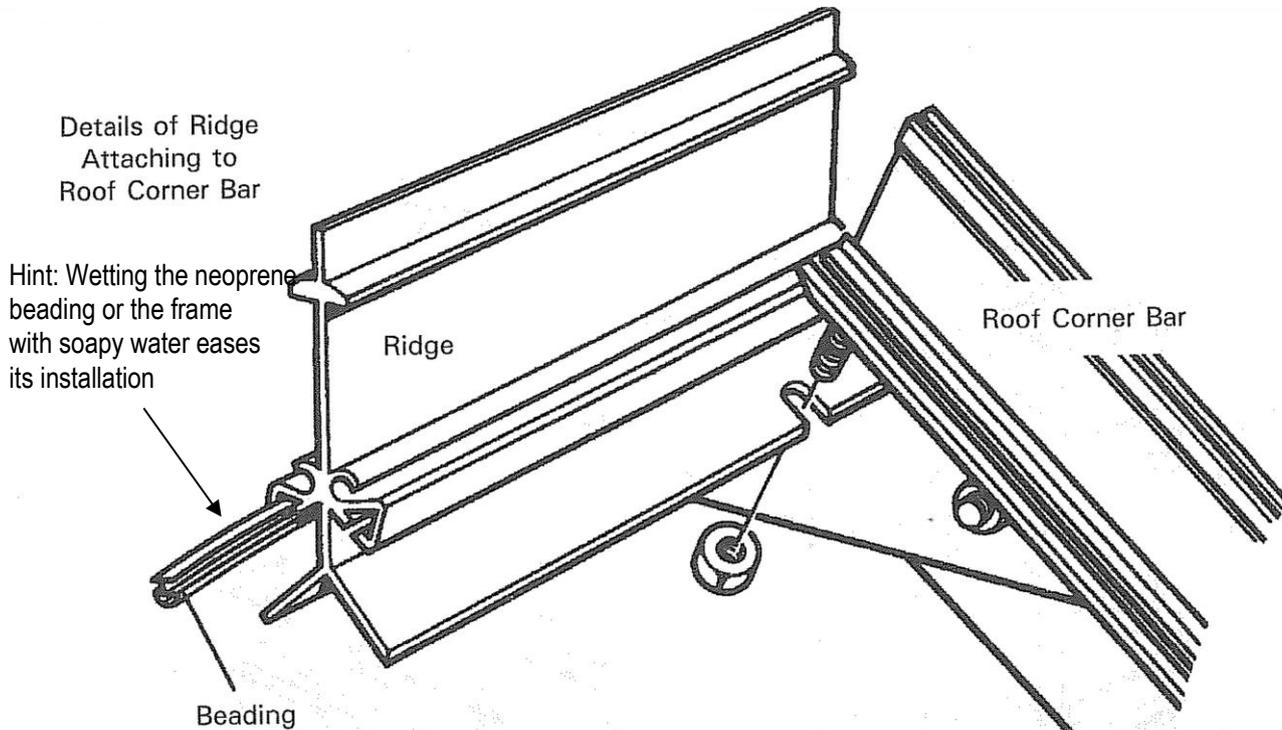
## ASSEMBLY OF THE GREENHOUSE UNIT

### PROCEDURE:

1. With the help of a willing assistant, stand up the rear gable and one of the sides. Standing on the inside of the structure with the gutter facing away from you, insert the eave/gutter bar into the gap between the corner bars, so that the inside flanges which form the angle of the roof and side line up with the bolt slots in the corner bars. (Key Point).
2. Undo the nuts holding the 2 bolts you inserted in the corner bars and slide them into the slotted holes in the flanges. Put a nut on the top bolt, put the side diagonal brace on the bottom bolt and then the nut and tighten up.



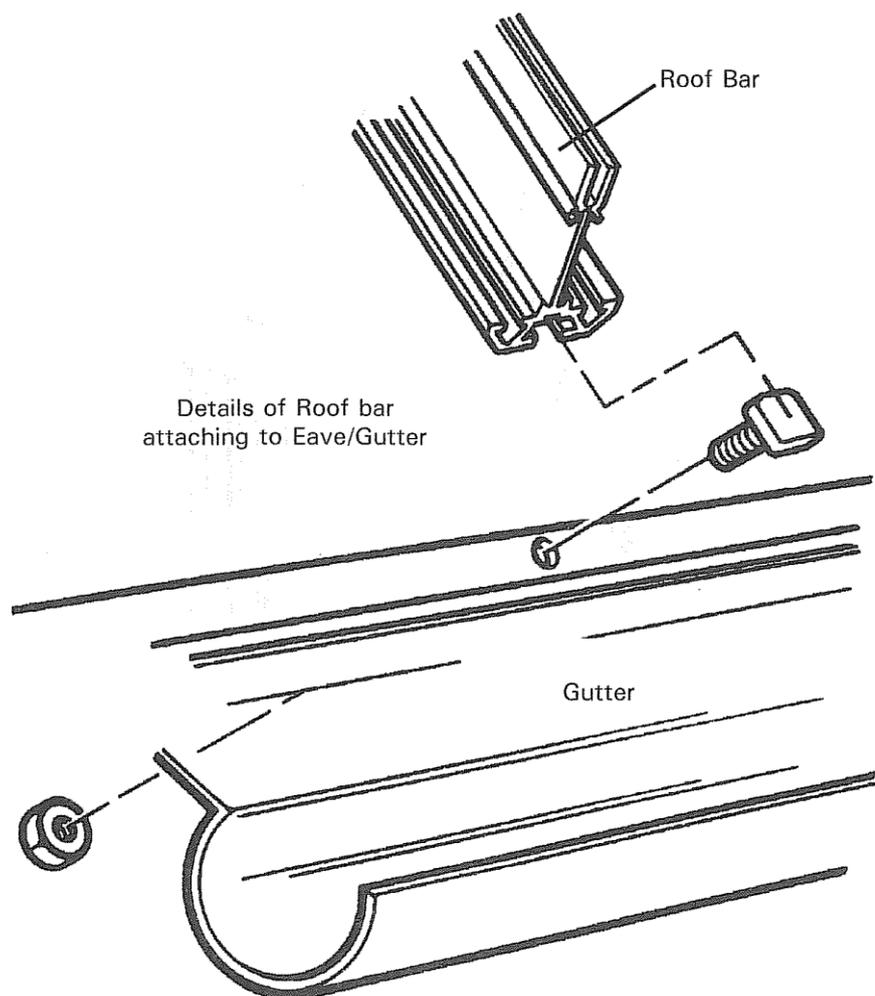
3. Now stand up the door end assembly (double or single door end are attached in the same way) and repeat the above procedure.
4. Stand up the other side frame and repeat the operation outlined in 1 and 2 above at both corners.
5. The bottom cill of the sides attaches to the corner bars in a similar way. Undo the nuts and bolts inserted in the gable end assembly, move the cill under the corner bar so that the elongated hole in the vertical flange of the side cill lines up with the bolt slot in the corner bar. Move the bolts down the slot into the slotted hole, put a nut on and tighten up, ensuring that the corner bar is pushed right down into the angle of the cill. Do the same at the other 3 bottom corners.



6. The ridge bar is fitted next, but first you must thread the glazing beading into the 2 grooves on the ridge. (Key Point). Lift the ridge bar up to the apex and standing on a pair of sturdy and safely placed stepladders push the ridge into the small gap between the roof corners so that the 2 flanges which form the angle of roof are tight up against the inside edge of the corner bars. The vertical part of the ridge is outside and pointing skywards. Undo the nuts and bolts previously inserted during gable end assembly and push them upwards into the slotted holes of the ridge. Tighten the nuts.
7. The roof bars can now be attached to the structure but first you must slide the glazing beading into the bars and trim to suit. (Key Point). Attach the bars firstly at the ridge, sliding a bolt into the bolt slot of the roof bars and placing the bolt through the holes in the flanges of the ridge. Put a nut on and immediately prior to tightening ensure that the roof bar is pushed up hard against the ridge. Do not attach the bottom of the bars to the eave until all the roof bars are bolted to the ridge. (Key Point)
8. Now attach the bottom of the roof bars to the eave/gutter bar into the holes in the upper flange. Start with the middle bars either side of the ridge. You will need to insert extra bolts into each bar that has a vent opening and a cantilever tee-bar brace.  
 The 2.43m x 3.80m has 3 small tee-bar braces – 3 in the roof & 6 large tee-bar braces – 3 each side.  
 The 2.43m x 5.04m has 13 large tee-bar braces – 5 each side and 3 in the roof.

You must remember to insert one extra bolt per cantilever T-bar brace and one per vent per bar. In addition one extra bolt would be needed on the bar next to the middle where you require the vent to go. If you have purchased a partition with your greenhouse you will be 2 roof bars short of a full pack. Omit one each side of the ridge at the point where the partition is to be situated i.e. at the same place where you omitted the side glazing bars.

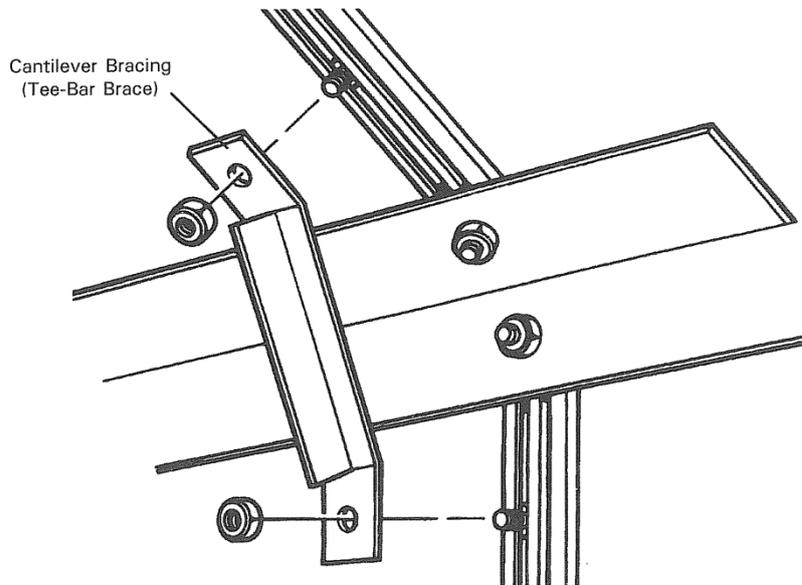
Before tightening the nuts that hold the roof bar to the eave you must ensure that the roof bar is tight up against the small flange immediately above the gutter. (Key point) Failure to observe this point and the previous one of keeping the roof bar tight up to the ridge could result in a slight outward bow of the gutters and a slight downward dip of the ridge.



9. At this point you will need to lift the structure onto a firm footing or the greenhouse base if you haven't already done so.
10. On the 3.80m model there are 2 roof diagonal braces. On the 5.04m model there are 4. You attach these to the point where the ridge bolts to the corner bars at the rear end. The angle travels diagonally down to the first glazing bar at the eave/gutter. You fit one each side at the rear of the greenhouse. If you have the longer house you put another 2 at the front end.
11. You can now attach the T-bar cantilevers, which bolt to the sidebars and roof as indicated in point 8.

Before tightening these cantilevers up make sure there is no sag in the ridge or outward bow in the eave. (Key point) If you do have this problem you must straighten it out before tightening the cantilevers up. A bow or sag can easily be removed with 2 people pushing the gutters towards each other until straight, hold it in position whilst a third person tightens up the cantilevers.

**The main structure is now complete and it must be lifted onto its base for securing down.**



## SECURING GREENHOUSE TO BASE

### BRICK BASE, TIMBER OR CONCRETE

Having built your base level and square and to the outside measurements given on page 4, sit the greenhouse onto the base. The 4 cills will lip over the edge of the base and will protrude approx. 7mm all the way round.

Drill through the cill and into the timber/brickwork; screw through the hole using a treated screw and washer. Create an anchor point every 610mm i.e. at each glazing bar.



### Angle Brackets

The aluminium angle brackets are bolted to the cill and then with the use of screws are secured to the base. Timber screws are available on request.

## EXTERIOR SINGLE DOOR TRACK

This door track is the same as the partition & bolts to the door track support by inserting bolts into the bolt slot of the door track, pushing them through the corresponding 3 holes in the door track support, put nuts on and tighten them up. Fit the door, carrying out the up/down movement previously described to get the correct position in the bottom door guide. Attach the small angle support to the top right of the right hand roof corner bar. "Fine tune" as before if necessary.



Align end of door track with door in fully closed position.



Use slot located under here

## EXTERIOR DOUBLE DOOR TRACK

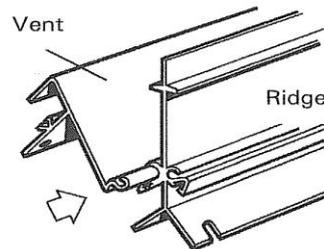
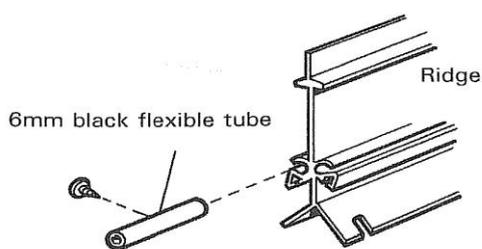
This fits in exactly the same way as the single door track and is "fine tuned" accordingly. However it has a small angle bracket on the left hand roof corner bar as well as the right corner bar.

The small glazing bar above the **MIDDLE** of the door can now be fitted. Put the glazing beading into the grooves and trim to suit. Insert 2 bolts into the bar and put them through the holes in the top door track and apex gusset plate. Put nuts on and tighten up.

### NOW YOU CAN FIT THE VENT TO THE RIDGE

Before sliding the vent into the ridge, slide a piece of black tube into the vent hinge socket. Slide the vent into position, insert a small self-tapping screw into the tube approximately  $\frac{1}{2}$  way along then tighten the screw. The tube will expand and lock into position thus preventing sideways movement of the vent. N.B. There is no hole for the screw but it will easily push into the tube and screw up. (**Key point**)

You only require one tube per vent on the left hand side of the vent socket (viewed from inside the greenhouse).



Having slid the vents from the end of the ridge to the desired position, you can now fit the "slam bars" to the 2 glazing bars. Utilise the bolts you inserted during general assembly and position the "slam bars" just under the vent allowing the casement stay to effectively close. The slam bar can be adjusted later to facilitate good opening and closing of the vent.

### FITTING THE DOOR TO THE STRUCTURE

The door slides on to the frame from the left hand side.

Put the door bottom rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end glazing bars. Carefully ease the door past the glazing bar and feed in the second wheel. Push further to the right until both draught excluders are butting up to both end-glazing bars. Carefully ease the door past the two glazing bars. The door will now run quite freely. To square up the door with the spacing, undo the upper bolts holding the door track. There is a little play to facilitate "fine tuning" of the door.

N.B. sometimes the door can be a little stiff prior to glazing but once the glass has been inserted (the last job of the construction) the extra weight will make for smooth running. (**Key Point**)

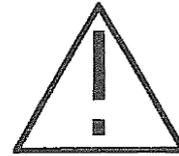
# GLAZING THE STRUCTURE

PLEASE NOTE: DIAGRAMS BELOW SOME MODELS MAY BE SUPPLIED WITH OPTION 1 AND/OR OPTION 2

**Always handle glass with extreme care as failure to do so can result in injury.**

There is a choice of glazing:

- 1) 3mm horticulture in standard panes.
- 2) 3mm toughened in larger panes.
- 3) 3mm toughened in standard panes.



Start with the bottom pane of glass on the side, ref. A (610mm x 610mm) Insert 4 stainless steel clips as illustrated, 2 on either side of the pane. The upper 2 clips approx 13mm from the top edge of the glass, the bottom 2 approx. 200mm from the bottom edge of the glass.

Put one overlap clip on the upper edge of the glass with the long "tail" outside and the short return inside.

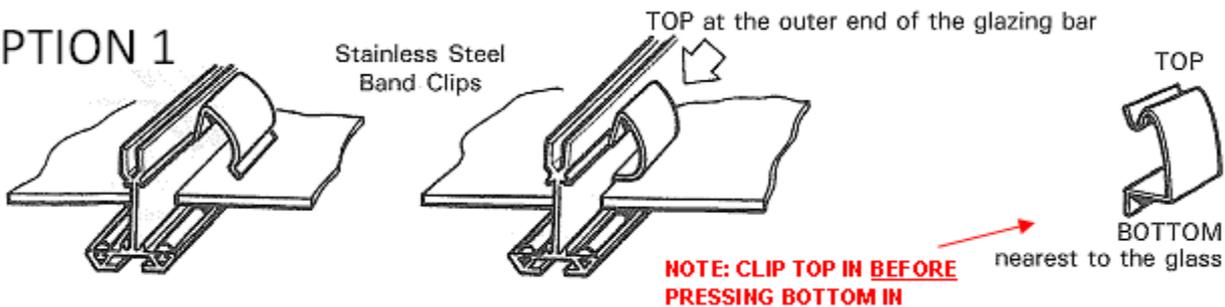
For No's 1) & 3) proceed as follows:

Offer the next pane of glass ref. B (610mm x 457mm) to the panel, sitting the pane of glass on to the 2 upper clips of the panel below. Exerting a little pressure on the B pane with one hand, bend up the tail of the overlap clip to form a hook or letter "S" (see diagram).

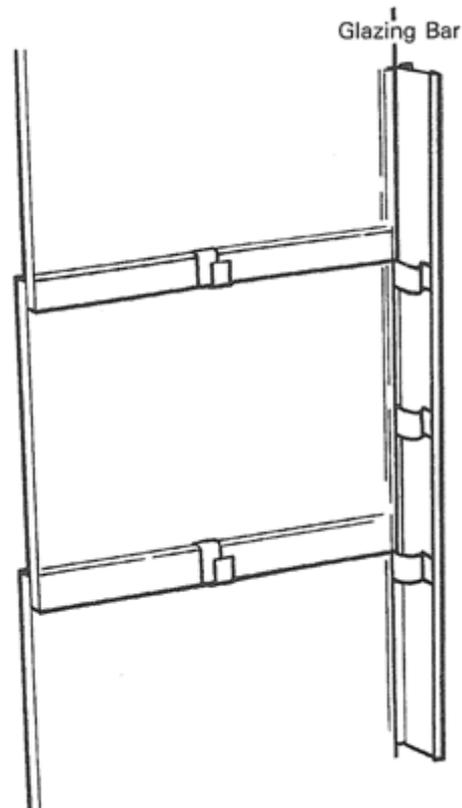
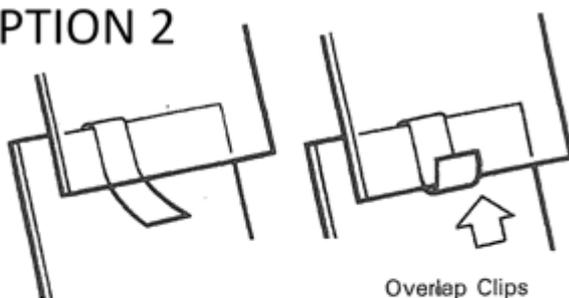
Put 2 clips on each side of the pane of glass, the upper 13mm from the top of pane B. The bottom 200mm from the bottom of the pane i.e. from the overlap.

Repeat this procedure for the upper pane of glass ref. B

## OPTION 1

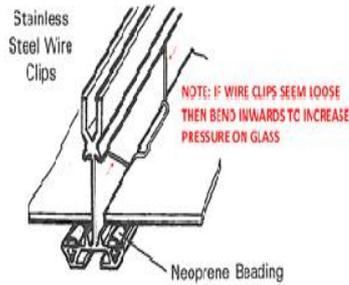


## OPTION 2



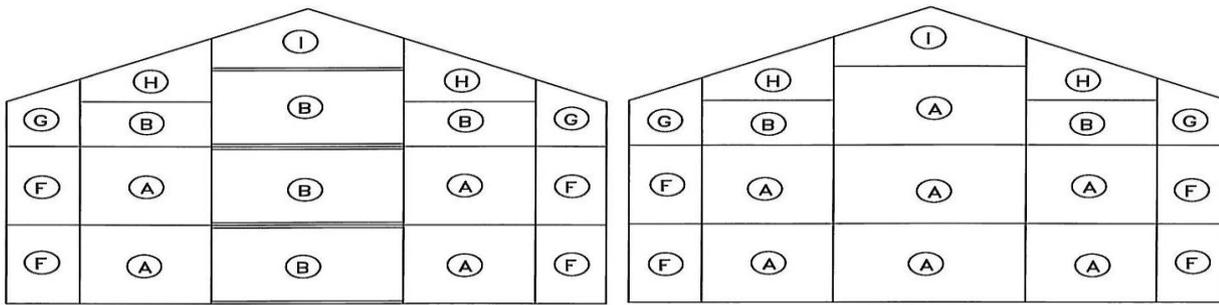
N.B. there are a small number of wire clips which you use behind the door and under the vents instead of the band clips.

Images of wire butterfly clips option to hold cladding:



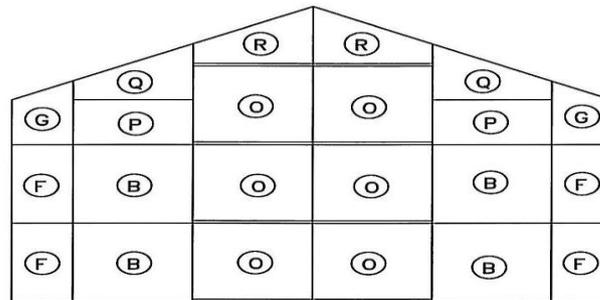
**3.80 & 5.04 GLASSHOUSE FOR standard 3mm LAP SHEET GLASS LAYOUT ONLY.**

**Note: The 4mm full height glass has different sizes**

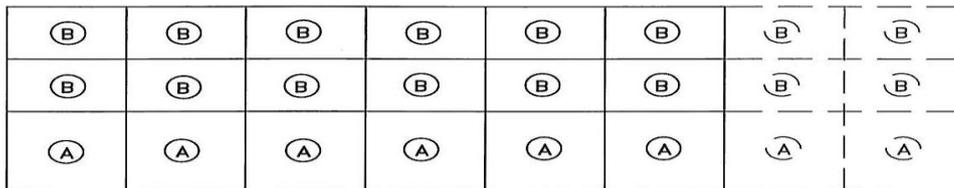


SINGLE DOOR END

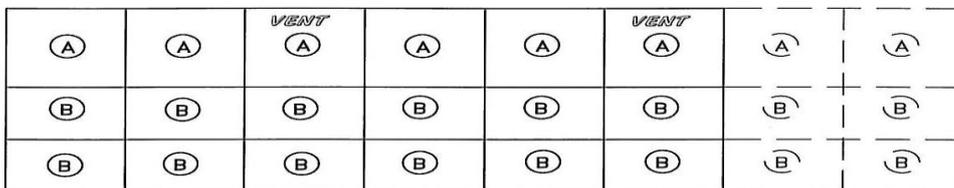
BACK WALL



DOUBLE DOOR END (IF SUPPLIED)



SIDE VIEW X2



OVERHEAD VIEW X2

5.04 MODEL

Glass will be supplied from your local merchant. (The glass IS NOT freighted with the glasshouse due to the high likelihood of the glass being damaged in transit). Redpath will advise your local merchant's for delivery. **The cut list above is for the standard 3mm lap sheet glass only. Full height 4mm uses different sized glass,**

**PLEASE TAKE CARE WHEN HANDLING GLASS DURING ASSEMBLY OR USING THIS GLASSHOUSE – GLASS CAN BREAK FROM IMPACT OR STORM DAMAGE, STAY OUTSIDE OF THE GLASSHOUSE IN HIGH WIND OR STORM CONDITIONS**

## **Redpath Glasshouses – 10 year Warranty Conditions**

The supplier (Redpath Pacific Ltd) offers the above warranty on a Pro-rata basis.

The warranty "warrants" that the goods are supplied without manufacturing fault & are designed to provide a minimum useful service life of ten years.

The warranty conditions:

1. The Pro-Rata warranty applies from invoice date of goods
  2. The pro rata warranty is for the buildings framework, nuts, bolts, brackets only and does not include those parts that are beneath the ground or any flexible cladding, fastening systems, or other non metal parts.
  3. The pro rata warranty does not cover those items that may be judged to be damaged or caused by "fair wear and tear" during the daily use of the building.
  4. The pro rata frame warranty does not cover damage from storm, accident damage, unstable or loose ground, in any form that may affect the buildings integrity.
  5. The buildings frame & parts includes various coatings for improved resistance to corrosion. These include hot dipped galvanized parts; zinc coatings, powder coating, and paint coatings anodized surfaces, mill finish alloy surfaces. The warranty offers that these coatings will meet the supplier's specification for the building. The warranty does not cover corrosion that exceeds the expected "typical" protection that these coatings are able to offer. This might include damage from chemical sprays or paints, excessive humidity etc.
  6. The warranty is not transferable and only applies to new building sales.
  7. This pro rata warranty requires that basic maintenance completed by the customer E.G regular cleaning, avoidance of poor operating conditions.
  8. Any warranty claim must be advised in writing to Redpath Pacific Ltd immediately upon its discovery. Damaged parts are to be kept and returned to the supplier at the suppliers cost on request.
  9. Any warranty for any parts or labour supplied may not be honored if payment for the building is incomplete or not made as per the payment schedule contract.
  10. The warranty does not cover any consequential losses or claims of the customer
  11. The supplier's liability shall be at minimum the pro-rata cost of the material value only (not labour) of the parts that are claimed to be faulty under the warranty.
  12. The warranty assumes that the glasshouse has been located in a suitable site that is protected from strong winds. Open plain sites, exposed hill tops, locations with natural wind funneling from buildings or landforms etc should be avoided.
  13. The glass cladding IS NOT included in the ten year warranty. Unless the glass cladding exhibits a manufacturing fault or is damaged prior to use.
- This warranty does not remove any rights that the customer might have under New Zealand Law