

# **BROADWAY**

# **Instruction**

# **Manual**



# ORDER OF CONSTRUCTION

## SEE ENCLOSED SHEETS FOR INFORMATION

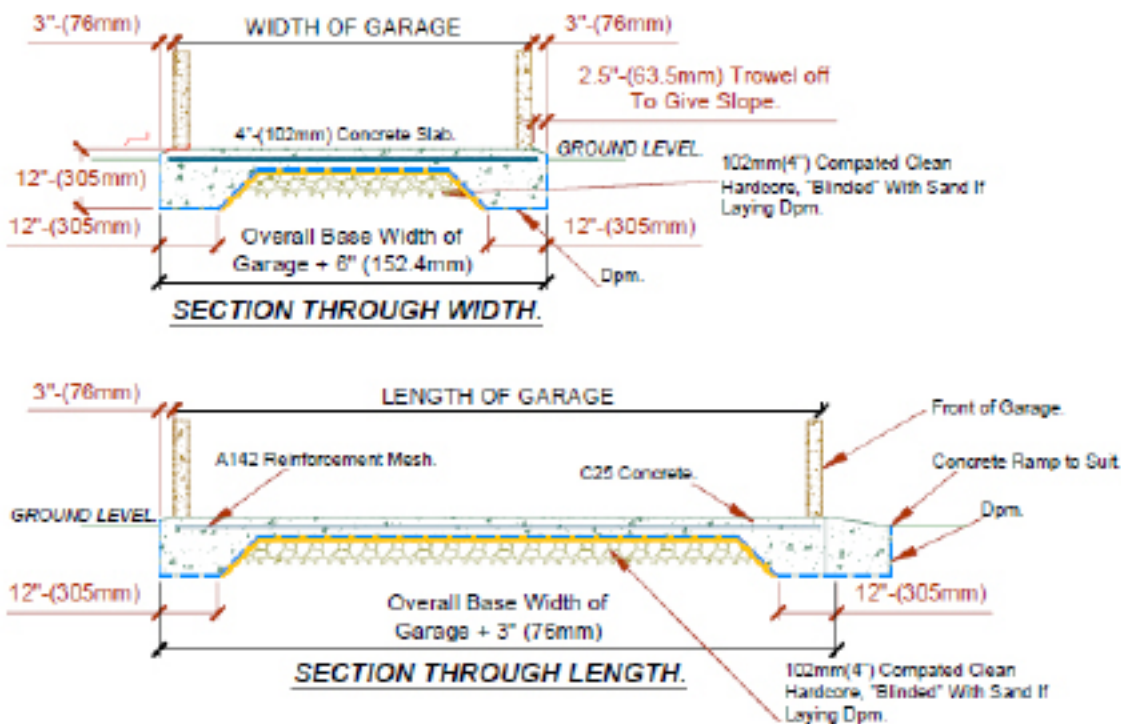
1. Mark base / Lay base seal and base angle
2. Construct walls fitting doors and windows as you go
3. Fit end fascias
4. Fit wall plate
5. Fit internal truss to wall plate
6. Lay roof membrane to roof truss
7. Fit roof batten to roof truss / end fascias
8. Fit gutter board to wall plate
9. Fit gutter to gutter board / down pipes to wall
10. Fit roof as per information sheet enclosed
11. Fit main door / attach door trim to inside of opening
12. Seal wall joints with silicone and stone
13. Lay fillet to inside of garage

# Fixing Accessories

DESCRIPTION	USED FOR	PRODUCT
M8 x 140mm MUSHROOM HEAD BOLT	Securing Wall / Wall Plates Bolt and Corner Bolt	
M8 HEX NUT	Securing Wall Bolt / Wall Plates Bolt and Corner Bolt	
M8 WASHER	Securing Wall Bolt / Wall Plates Bolt and Corner Bolt	
M8 TAPERED WASHER	Securing Panels and Wall Plate Together ( 2 Per Wall Bolt )	
GALV TWIST NAIL	To hold joist hanger	
HEX. BOLT c/w HEX. NUT	To hold Front Post to panel	
T19 WOOD TEK	To hold M1500 Bracket	
T19 DRILL SCREW		
POLY TOP ( RING SHANK ) NAILS	To fit gutter board to wall plate	
NAIL	To fit batten to truss	

DESCRIPTION	USED FOR	PRODUCT
GALV CLOUT NAIL	Roof membrane to truss	
CSK WOOD SCREW	To fix gutter bracket	
MUSH HEAD BOLT	Pipe clip bolt	
M6 WASHER	Pipe clip	
M6 NUT	Pipe clip	
MOO89 GALV PIPE BRACKET	Hang Pipe clip to wall	
M1500 ( 90 DEGREE BRACKET )	Fit to inside corner wall plate	
JOIST HANGERS	Secure internal truss to wall plate	

Ensure that you have a **CLEAR** and **LEVEL** base on which to assemble the garage.



## Concrete Garage Base

Why do I need a concrete base? Can't I use paving blocks or slabs, or just put it on tarmac?

The design of the concrete prefabricated building with panels bolted together requires a strong concrete raft base. Any movement in the base may cause the garage to move.

### **The concrete base is the customer's responsibility**

The old saying, "a building is as good as its foundations", is as true for your concrete sectional garage as it is for any other type of building. The better the specification of the base, the more peace of mind you will have in the future. If you skimp on the base, you may regret it later!

### **Concrete base design**

Your concrete base needs to be designed properly to be strong enough not to crack or sink over the lifetime of your garage. A typical concrete sectional garage will weigh between 3 and 4 tonnes.

Your garage base should be designed to suit the soil on your site. For instance, if the soil is clay, with the likelihood of movement in the future, you will need to reinforce it, and probably make the raft thicker. If your building is over 30 sq m, you will need to gain approval from your local control office, who may need to or be required to inspect and approve your concrete garage base plans.

You should thicken the edges of the base to a depth to suit the ground conditions. The thickness of the concrete in the base will also depend on the soil conditions. The concrete mix design should be suitable for a garage base – speak to your supplier and tell them what the concrete is intended for so they can provide the correct mix. A minimum concrete thickness of 100mm (4”) is normally recommended, laid over at least the same thickness of well compacted clean hardcore. The hardcore should be “blinded” with sand if you are going to lay a damp proof membrane (dpm), normally 1200g polythene sheet. Steel reinforcement mesh will further strengthen your base, your local agent or local builder will advise.

If you intend to store items in your garage once it has been built, we recommend the inclusion of a dpm. Without the dpm there is no guarantee that damp will not spread into the building. Don't forget that the base will need time to “go off” or cure, before it is built on; allow at least a week, or more in winter.

The concrete base should be square. The garage is a rectangle, and needs to sit on a base about 75mm (3”) larger all round. (In any doubt, seek advice and confirmation of the size of your building from either the company or from your local agent.) When setting out your base, make sure that the shuttering is square. To make sure your base is square, measure the diagonals AD and BC – they should be the same. If not, adjust your shuttering until they are – your base will then be square.

The concrete base should be level. There must be no slope from side to side, back to front or front to back.

If you build your concrete garage on an unlevel base, the panels may not fit together properly, the roof won't fit it may be difficult to lay the necessary concrete fillet, there could be a gap under the Up and Over door, and the roof may not fit properly. If the fall is to the rear, you may well get puddles forming at the back of the garage.

The base must be higher than the surrounding area. It should stand out of the ground by at least 25mm (1”). If not, water may stand on the base and leak under the panels.

If the ground slopes down to the base, you should ideally dig out a trench 150mm (6”) around the base, backfilling with gravel or pea shingle, after retaining the existing ground. Don't forget to take into account surrounding ground levels when you position your personal door – if the ground is higher than the base, the door will catch as you open it. Obvious when you think about it, bit late when you have built the garage! If your concrete garage is at the bottom of a sloping drive, you need to put in a gully to take rainwater away to a suitable drain. We can provide a timber weather bar to help prevent water getting under the Up and Over door, but where there is a sloping driveway, a gully is essential.

So, your base should be designed to suit your local conditions. It should be strong enough, flat, square and level, higher than surrounding ground and 150mm (6”) larger than the building size (external dimension).

Finally, your concrete base should be positioned properly. Don't forget that the Up and Over door can project up to 1220mm (4ft) in front of the building when it is being opened, so position the base so that the door doesn't foul a wall or other building when you open it. A standard 1981mm (6'6”) Up and Over door projects 910mm (3ft).

**PLEASE LOOK UP!** Trees, buildings etc can overhang, and branches and gutters can affect the positioning. Just because it fits on the base, doesn't mean it will fit at eaves height!

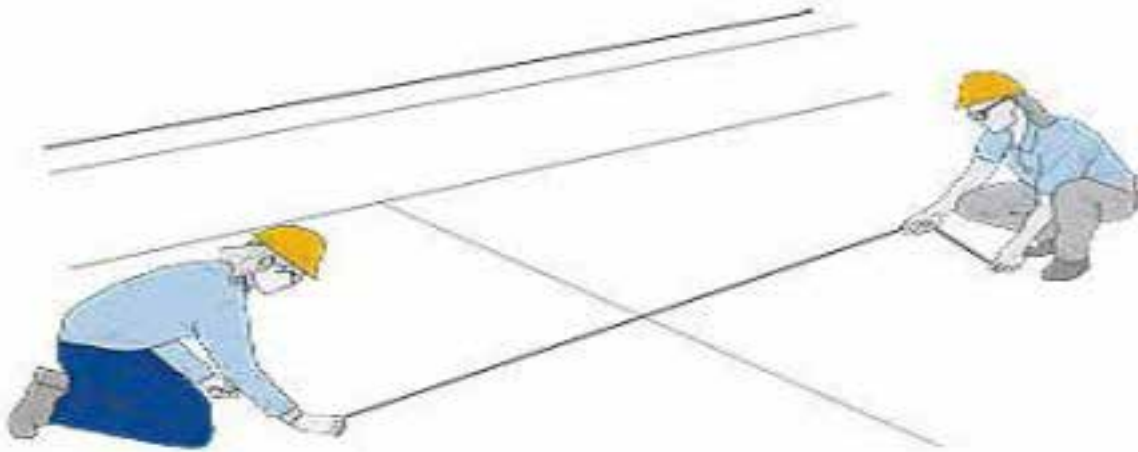
Don't position the building too close to other buildings or walls, as this can form a water trap – always specify gutters on your garage to minimise the potential for water leaking into your garage. Allow for guttering on your building if you order it – add in 150mm each side (apex) or 125mm to the length for guttering.

If you are using a local builder to carry out the base works for you, please give him this information before he starts work.



## MARKING THE BASE

With a spirit level, check the level of the laid base and take the overall measurements to make sure that the proposed building will sit level and fit within the dimensions of the laid base. Where applicable take a moisture level reading.



With a **CHALK LINE** mark out the external size of your garage ensuring that it is square, then **APPLY** black bitumen tape to the base just inside the **CHALK LINE**, so you can still see the **CHALK LINE** when your concrete panel is in position.

**ONLY remove the top layer of tape on the lines that you are working on.**

When the top layer of tape has been removed the **40mm x 40mm** white **PVC** strip is fitted to the inside of the **DPC** tape, facing inwards and fitted just past the inner face to the inside of the tape.

## BASE SEAL





## PANEL CONSTRUCTION

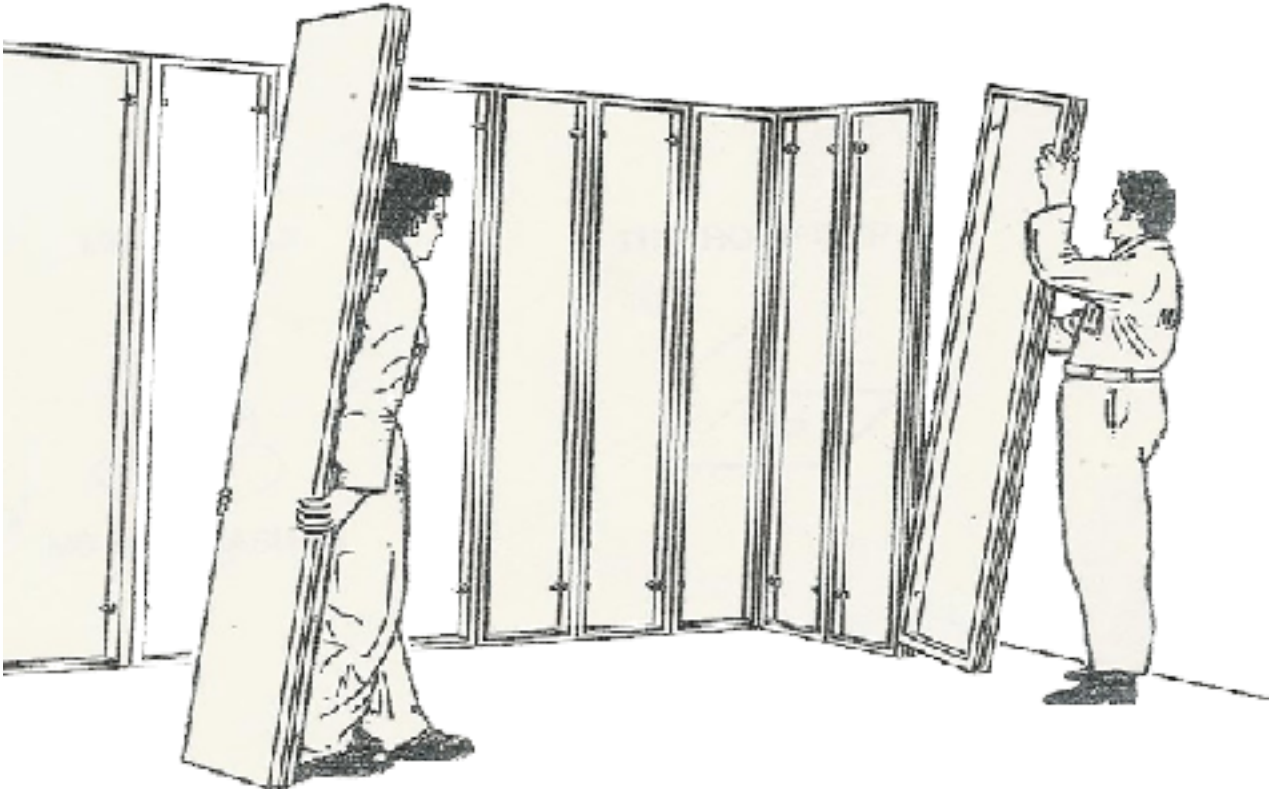
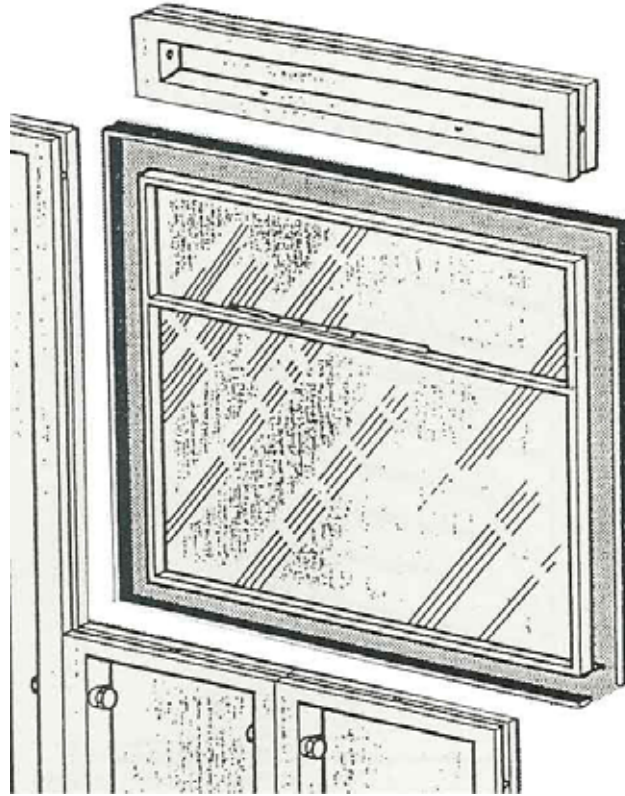


fig 4

Starting in the **LEFT** hand **REAR CORNER** assemble your corner using the **HEEL AND TOE** method of assembling. Assemble 3 panels each way loosely, then using a **SPIRIT LEVEL** upright your panel and tighten the bolts, ensuring that the tops are flush.

Once you have done this **CONTINUE** with the rest of your building keeping it fairly even until all of your concrete is assembled. (see **fig 4**) Place doors and windows where required with the header panels fitted above them.

# WINDOWS



**Where required, a window consists of the frame, one or two short panels and a lintel.**

Attach the short panels to each other and to the adjacent standard panels. Stand the window on top of the short panels, fitting the external sill **PVC** strip to the underneath of the window at the same time, so that it is square to the inside of the surrounding concrete panels.

Support the window until the lintel is secured on top of the window and to the adjoining panels.

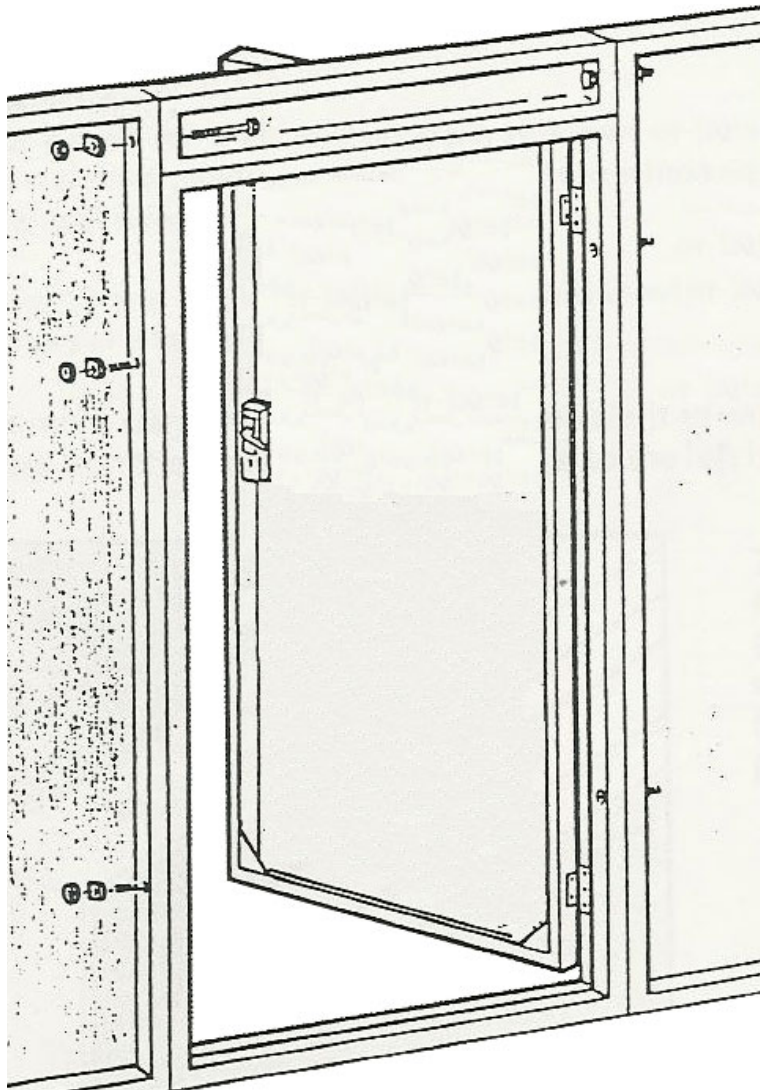
Using the existing holes in the standard concrete panels and the top holes in the short panels, secure the window in place using **TEC** screws.

## **NOTE**

There must be at least one standard panel width between windows or between a window and a personal door.

The window handle (*if applicable*) is also fitted at this stage.

# DOORS



## Fort Knox Personal Access door

Butt the door frame in the required position against the standard panel. Secure to the steel frame with **Mush head bolts**, nuts and **tapered washers**.

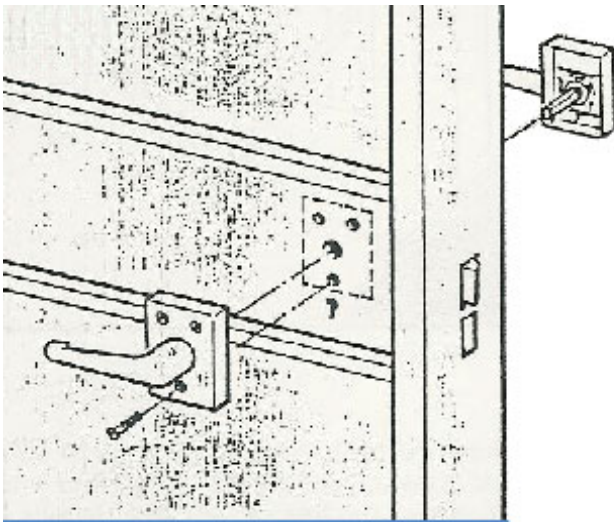
Place a lintel above the frame and fix to the standard panel with **hexagon head bolt 4"** (100mm) long, nuts and **tapered washers**.

Fix the next standard panel and secure to the frame and lintel as for the previous panel.

**NOTE:** It may be necessary to remove and refix the weather strip from the steel frame to gain access for the coach bolts.

**It may be necessary to drill through the frame into the concrete to fix the door to the surround.**

**IF NOT engaging correctly** use the 3 sets of 3 allen head bolts on the door hinge to adjust the level until the locks fully engage.



### Closure Set

Fit square bar through the hole in the door and locate the handle / lock sets on the ends of the square bar. Fix, the handle / lock sets with the screws provided and check operation of the handles and lock.

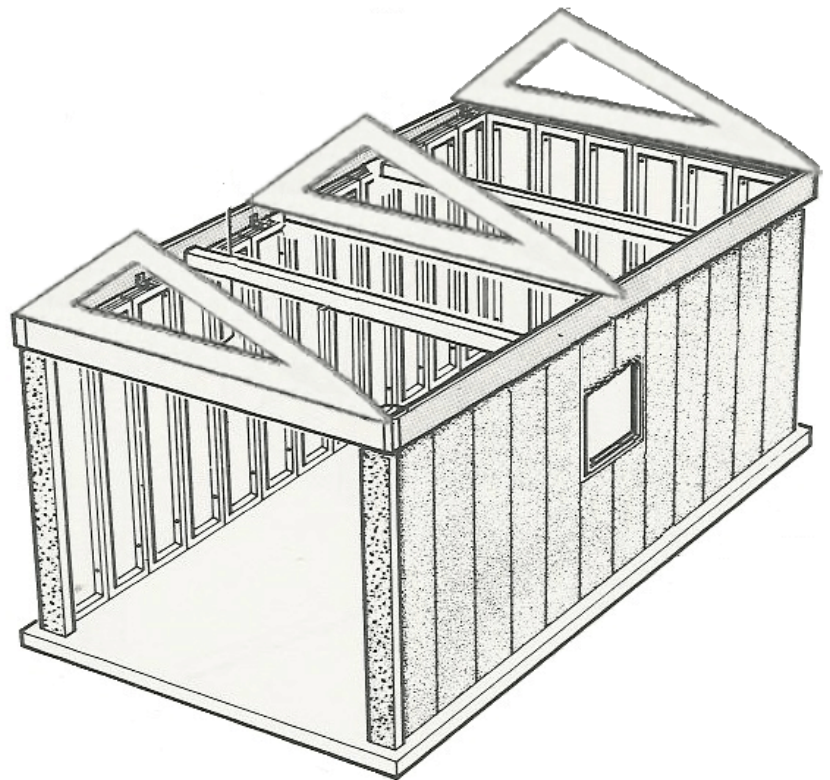
## FASCIAS

Now that you have assembled your concrete panels you need to put your **FRONT** and **REAR** fascias up, so that they are flush with the outside of the building. Once you have done this fit **WALL PLATES** on, keeping them flush with the inside of your panels and allowing an **overhang** on the outside of the building for the fascia boards.

### General

Timber fixing battens are slotted into the back of a fascia and can be slid along it's length to align with the metal support brackets bolted to the walls and front lintel of the building. Fixings through each bracket into a batten are made with **5/8" number 8 CSK wood screw**.

Where two or more pieces of fascia are required to make up the necessary length, an overlap will occur and it will be necessary to neatly cut away the top with a hacksaw.

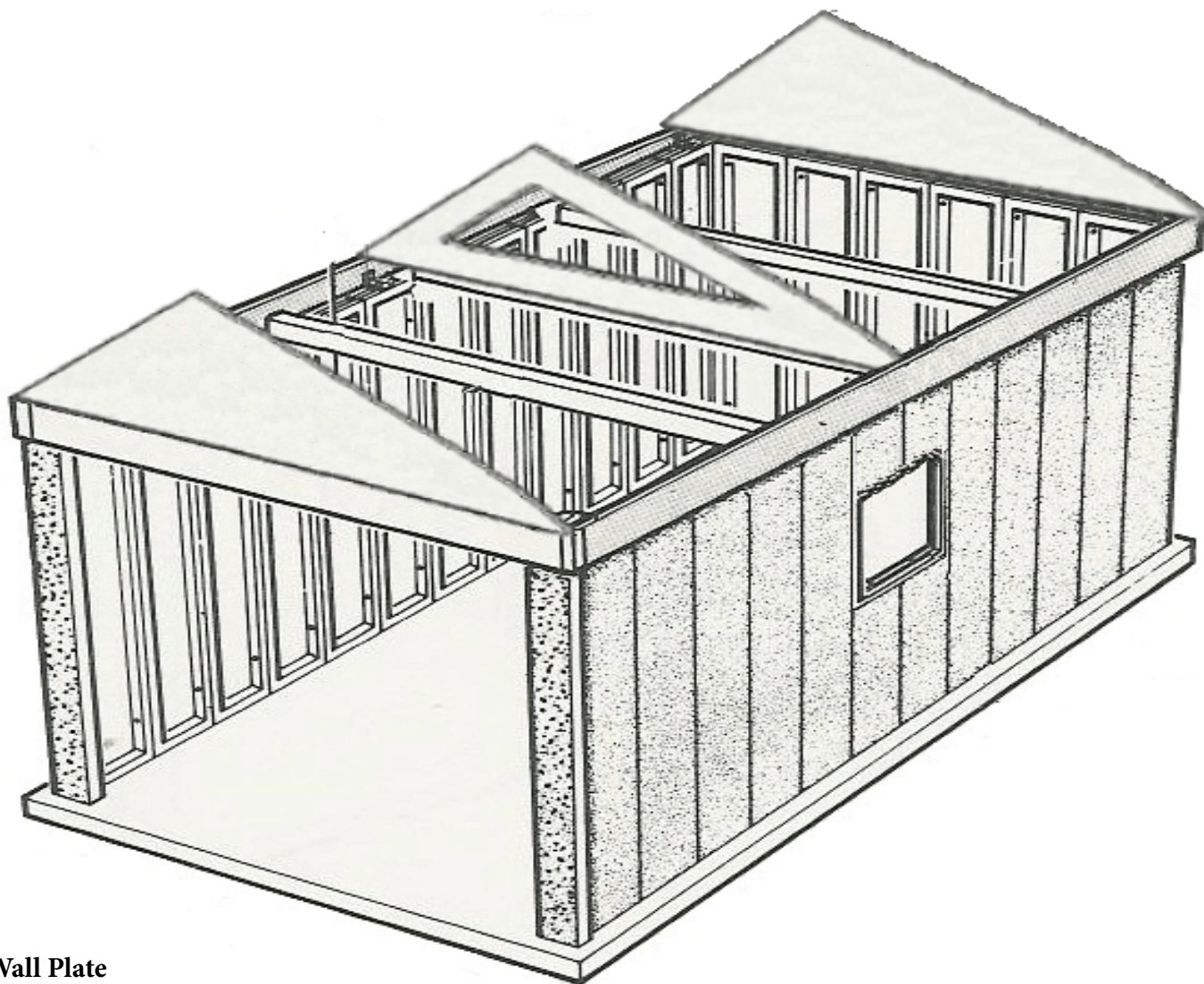




Using a drill, drill through from the top of the standard panels through the wall plate. **Mushroom head bolts** are then used to secure the wall plate from below the top of the standard panels with **tapered washers** and nuts.

Once you have assembled your concrete panels sufficiently forward from the rear, fix the rear gable to the top of the rear end wall so that it is as flush as possible with the outside of the building.

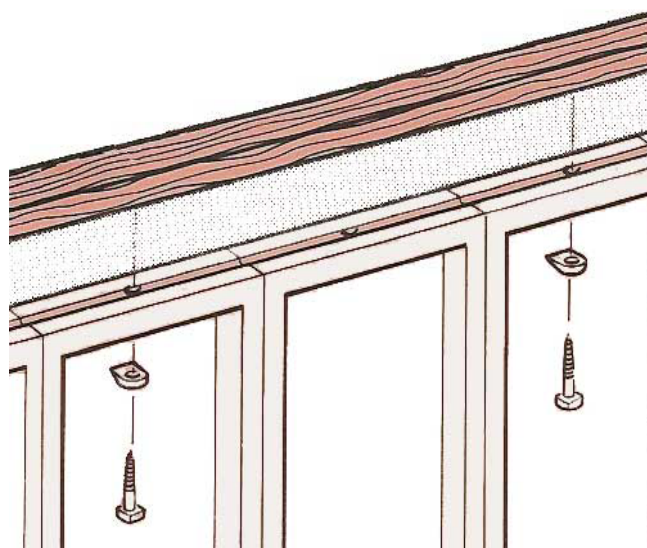
**The front gable can then be fitted as above**

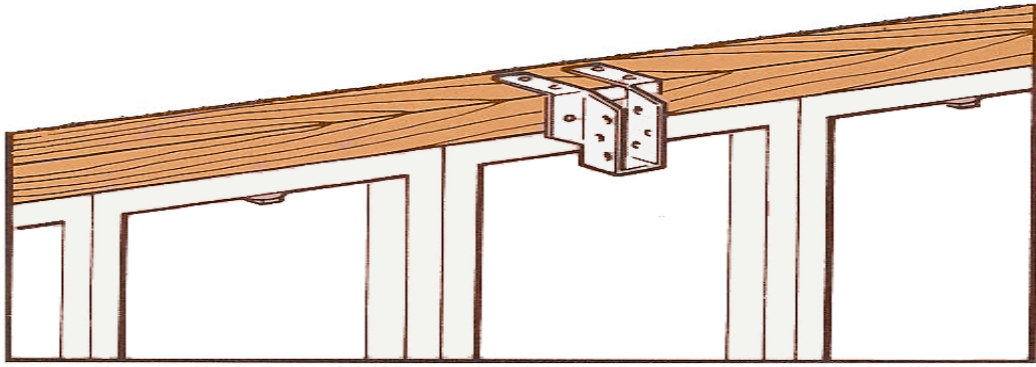


### Wall Plate

Temporarily position a timber wall plate  $3\frac{3}{8}$ " (85mm) wide by 2" (50mm) deep on top of both flank walls. Each wall plate should be extended the full length of the wall and be trimmed inwards approx 1" (25mm) from each end to allow for the end trusses. Note that each wall plate may be supplied as two separate pieces which are butted together on assembly.

Mark fixing hole position in the timber through holes in the tops of the panels at 2' 8" (800mm) intervals. Remove the wall plates and drill pilot holes  $\frac{3}{16}$ " (4.5mm) dia. into the timber approx. 1  $\frac{1}{2}$ " (40mm) deep. Reposition the wall plate and fix with **coach screws** 3" (75mm) long and **tapered washers**.





## **SIDE FASCIA**

Now attach your **uPVC** fascia boards to the sides of your building, making the two ends flush with your front and rear gable fascias using **POLY TOP (RING SHANK) NAILS**. Keep an equal distance between fixings and keep the top of the fascia level with the top of the wall plate when fixing.

If the fascia boards are in more than one piece, they will be clearly marked either **A** or **B** showing which go together, and the joining strip will already have been fixed in place.

## **ROOF TRUSS**

The roof trusses are fitted in position, as per the issued drawing, either directly to the wall plate (**STEEL**) or via truss hangers (**WOOD**). Once all of the trusses have been fitted in place, one purlin is fixed from each gable end and attached to every truss after it has been checked for being level and upright.

Each purlin is then attached, after being cut if necessary, to the front and rear gable via **ROUND HEAD NAILS** and attached to each truss, securing them in the correct position with **NAILS**.

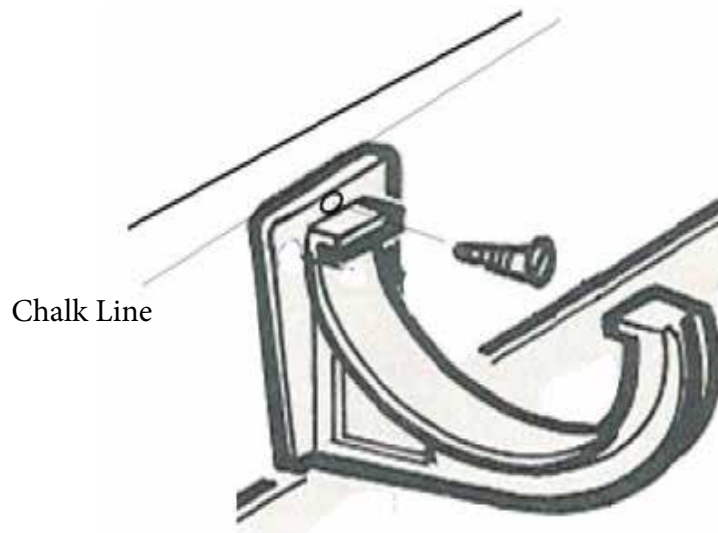
The temporary “**first**” purlin can be secured correctly in the right position if required.

# GUTTER

## Fixing gutter brackets to wall plate

Using a string line mark positions for the gutter brackets on the outside edge of the wall plate. A fall is necessary for the gutter and depends on whether it is required at the front or the rear of the building.

A fall should be taken from 1" down to 2" and marked with the chalk line. Fix a gutter bracket 1" (300mm) in from each end of the wall plate with a **wood screw**, at the top of the bracket making sure the remaining brackets are spaced evenly between there end brackets, but **NOT** more than 900mm apart.



Now you can attach your guttering. Fit the end cap and down pipe fittings so that they are level with the end of the front and rear gable fascias

## Corner Pieces

Where two fascias meet at a corner, fit the corner trim. Drill two 1/8" diameter holes through the bottom edge of the trim and the fascia and secure with two 1/2" **No. 8 self tapped screws**. The galvanized corner capping will be fitted after the flashings have been secured. Remove the bottom bolt of the corner panel in line with the downpipe, position and refit it with a **M0089 90 degree angle bracket** as shown in the diagram. (fig 2)

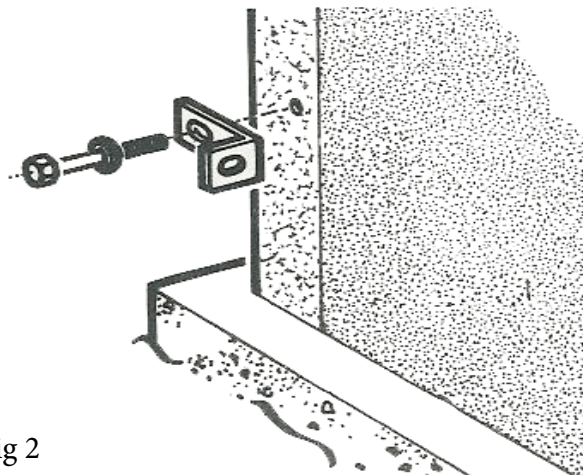


Fig 2

The circular clip on the downpipe can then be secured to the free end of the **M0089 angle bracket** securing the downpipe in place. The downpipe may need to be cut to fit depending on the base.



# GUTTER

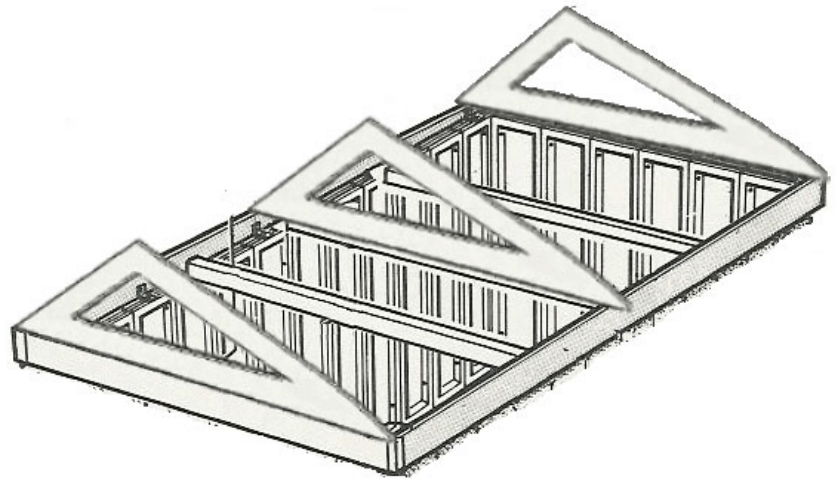
Decide at which rear corner the downpipe is to be fitted as the guttering, when finally secured, should be given a slight fall to the downpipe position.

Lay out the gutter components on the fascia in their correct order and using a string line to determine the fall available, position the front gutter brackets accordingly, securing each with two 5/8" **No. 8 screws** at not more than 3" centres to a batten.

Bolt the complete fascia assembly to the rear wall and clip the length of guttering into the brackets, cutting to correct length where necessary with a fine tooth hacksaw. Where it has been necessary to cut a gutter to length, notches must be made at the ends to accommodate the gutter joint straps.

# INTERNAL TRUSS

Fix your internal **ROOF TRUSSES** in position into **TRUSS HANGER** fixed with **TWIST NAILS** at **4ft INTERVALS** then once you have done this prop them up so they are upright and attach your **TIMBER PURLINS** to the roof.

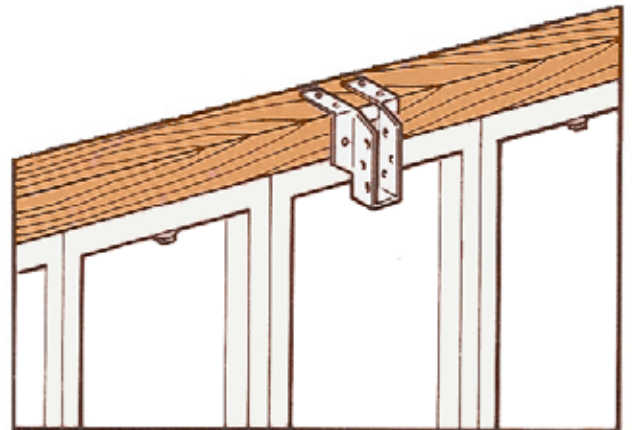


## Truss Hangers

Place truss hangers evenly along the wall plates at a maximum distance of 3'4" (1m) apart.

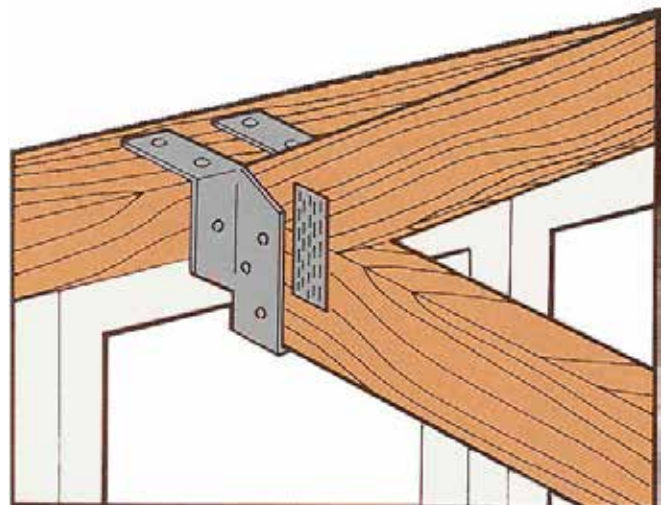
Ensure hangers on opposite walls are in line with each other so the intermediate trusses will be square to the walls.

Fix truss hangers by nailing **square twisted nails** 1 ½" (40mm) long into the tops of the wall plates. The inside face of each truss hanger must be flush with the inside face of the wall plate.



## Intermediate Trusses

Lower intermediate trusses into truss hangers and fix in position with **square twisted nails** 1 ½ (40mm) long.

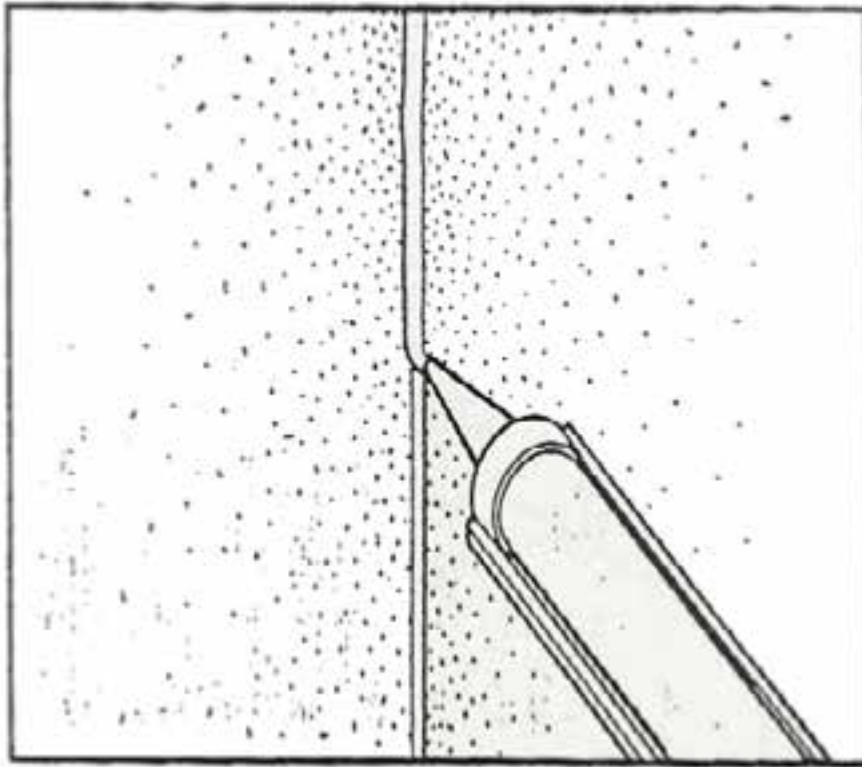


# ROOF

Please review the **Installers Guide for panels** on how to fit the steel roof.

# JOINTS

FIT your garage door as per the instructions attached to the door. Once you have done this silicone all internal joints with clear silicone.



## Silicone External Finish

Ensure joints are clear then seal the external joint between panels by applying mastic with the gun provided. Cut the nozzle of the cartridge so that a bead of approximately 1/4" (6mm) is delivered. After applying to the outside of all joints press the finishing spar granules into the surface of the mastic on every joint, covering the panel joints.