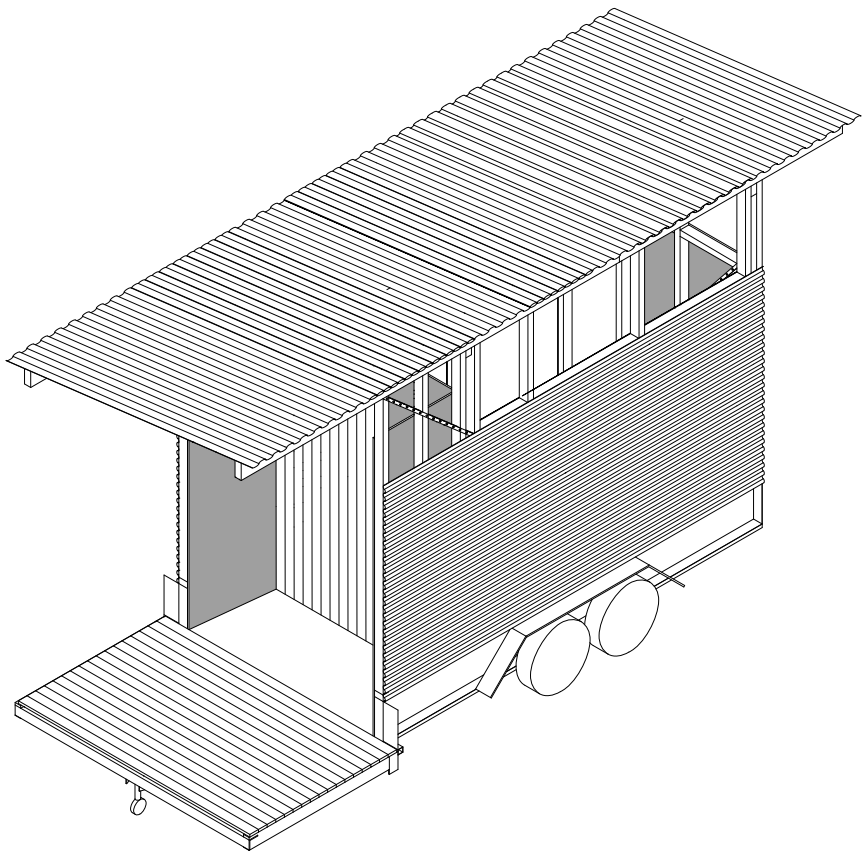




TOILET AT MOONLIGHT FLAT

CONSTRUCTION METHODS A

WORKBOOK 2

ABPL90286

Aleksandar Bandilovski

1356564

CONTENTS

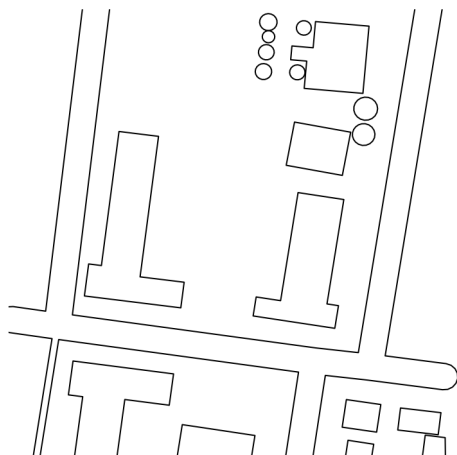
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A. INTRODUCTION

ACKNOWLEDGEMENT

I acknowledge the traditional custodians of the land on which this toilet was built, the Wurrundjeri people and the people of Djaara Country. I pay my respects to Elders past, present, and future.

A.01 SITE PLAN



CONSTRUCTION SITE

The initial construction of the following items occurred off the final site:

- Frames
- Decking
- Painting of frames
- Installation of exterior corrugated steel cladding
- Door

This off-site work took place at the University of Melbourne's Dookie campus, located at 960 Dookie–Nalinga Road, Dookie College, VIC. The Dookie site was used purely as a staging area where materials were delivered and the majority of the toilet was built before transport to Nalderun.



FIGURE 1. NALDERUN BUSH TUCKER FARM

SITE OF TOILET

Location: 950 Fairbairn Street, Chewton VIC 3451.

This is the location of the Nalderun Bush Tucker Farm in Castlemaine. The trailer, along with all constructed materials, was transported here in a flat-pack arrangement to allow for quick on-site assembly.

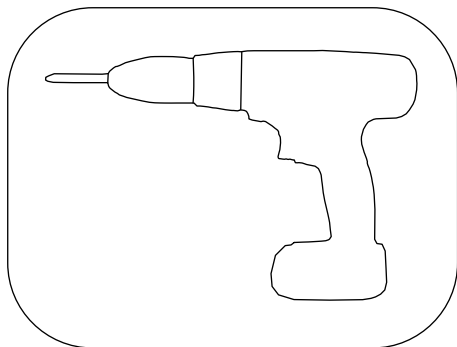
The toilet was built onto a trailer to ensure that an accessible toilet would be available next to the newly built community centre (shown to the right of the red circle in Figure 1). Mounting it on a trailer also allowed the project to work around the council guidelines that apply to fixed toilets, such as the

need for a sewage system and a septic tank.

Meeting those requirements would have taken years, and in the meantime the existing port-a-loo would have remained the only option on the farm. Because this toilet is not fixed to the ground and can be moved on its trailer, those restrictions no longer apply.

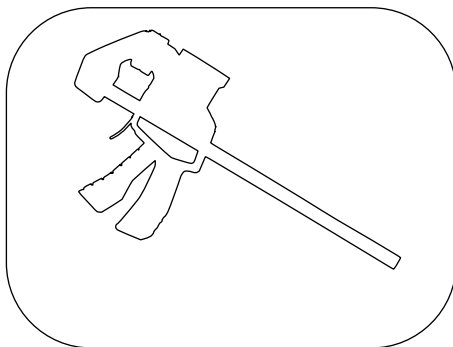
The toilet is located in the red circle in the top-left of Figure 1, directly next to the community centre. This gives users easy access and frees up the rest of the bush tucker farm for ongoing work, with the toilet always close by.

A.02 TOOL KIT



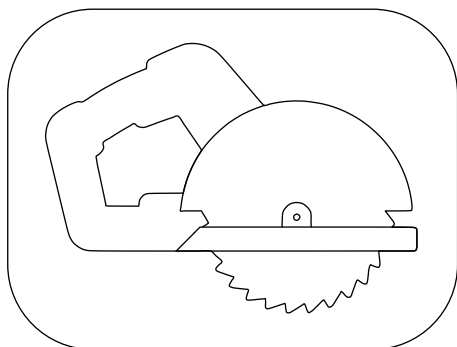
CORDLESS DRILL DRIVER

Used for all fixings except nails, in both timber and stell.



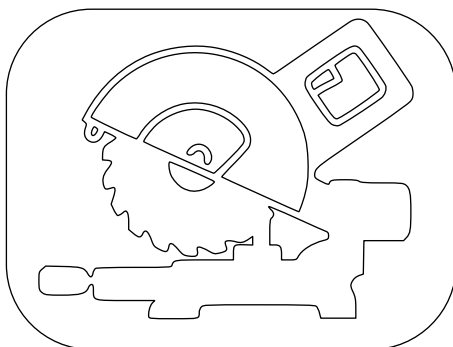
CLAMP

Used to hold studs and noggins together while they are being fixed.



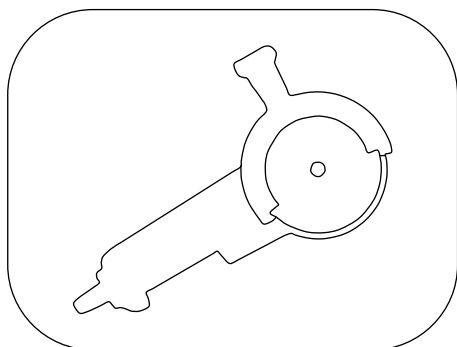
CIRCULAR SAW

Used to cut bracing channels into frame walls.



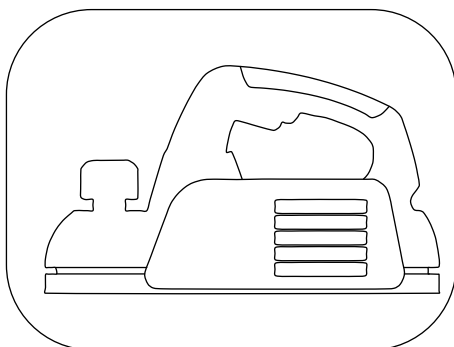
DROP SAW

Used to cut all timber for framing.



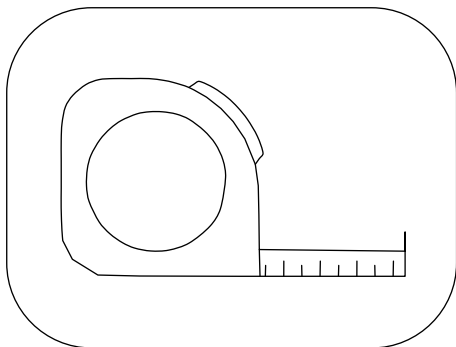
ANGLE GRINDER

Used to grind down the steel braces for the deck and frames.



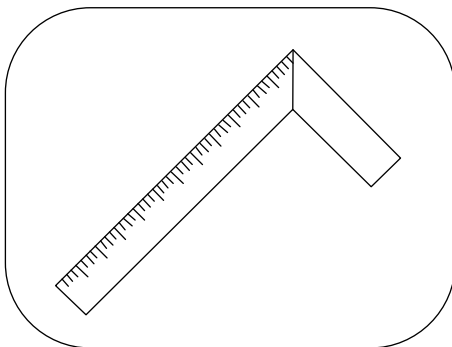
PLANNER SAW

Used to grind down pieces of the frame where the angle brace is attached.



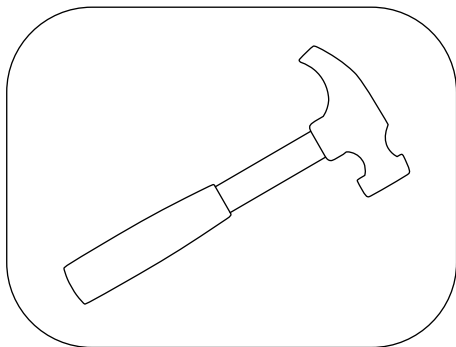
TAPE MEASURE

Used for any task requiring an exact measurement, such as bracing and material lengths.



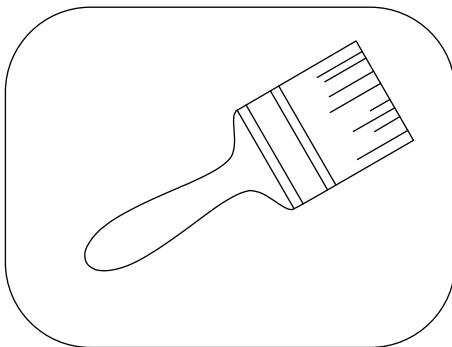
L SQUARE

Used to ensure straight lines and accurate cuts in materials.



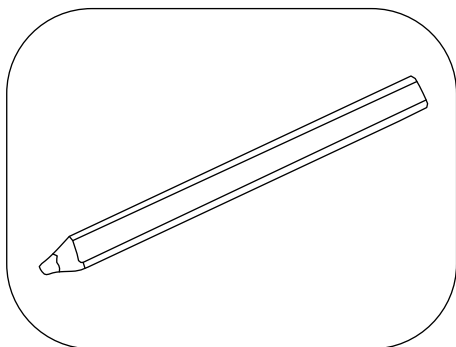
HAMMER

Used to drive fixings such as brad nails and decking nails.



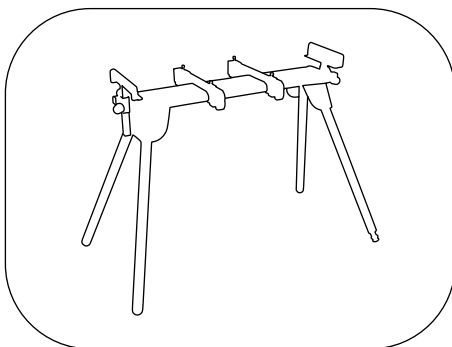
PAINT BRUSH

Used to paint the frames.



PENCIL

Used for markings on materials to indicate cut lines.

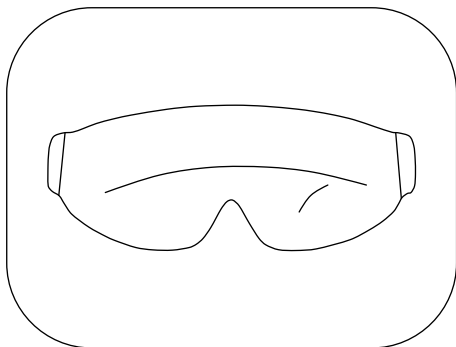


SAW STAND

Used to support materials while cutting.

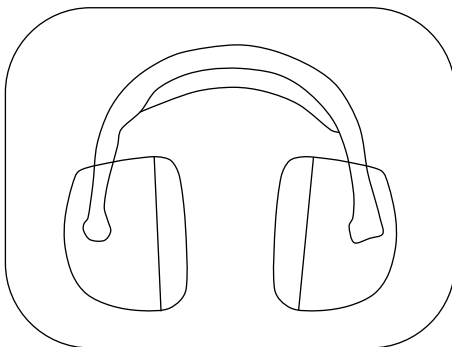
Optional use

A.03 SAFETY EQUIPMENT



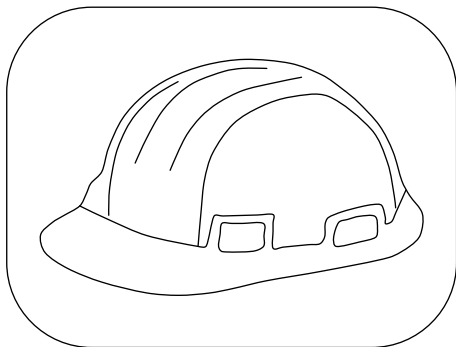
PROTECTIVE EYE WEAR

Worn when cutting any materials.



PROTECTIVE EAR WEAR

Worn when working with tools that emit loud noises.



HARD HAT

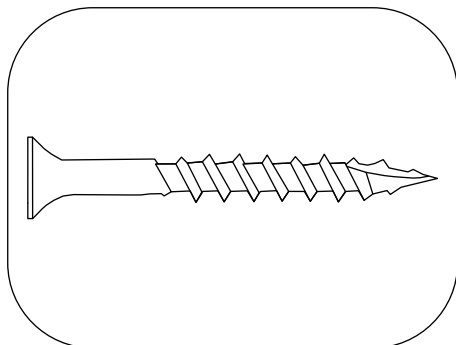
Used for carrying objects above the head, such as the frame walls.



STEEL CAP BOOTS

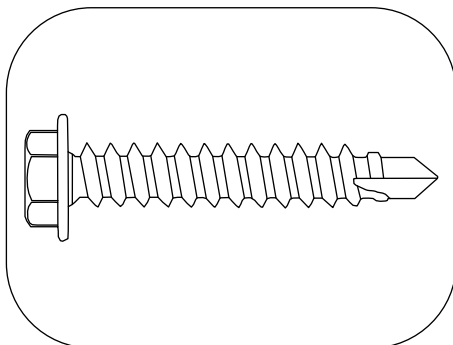
Worn at all times.

A.04 FIXINGS



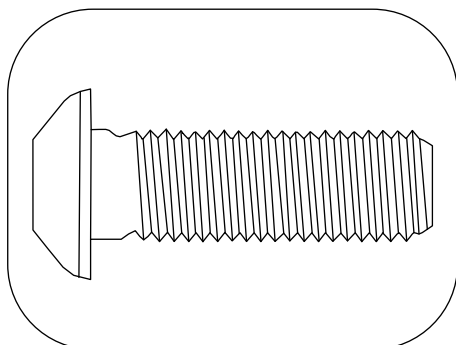
BATTEN SCREWS 100mm

Used for timber-to-timber connections in the frames and decking.



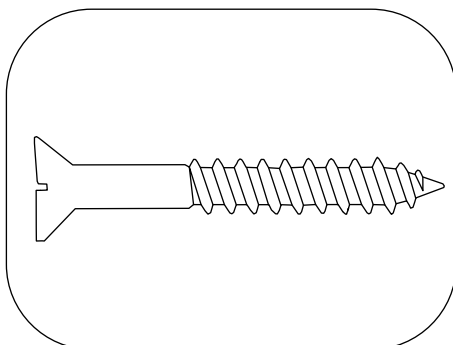
TEK SCREW (25mm and 50mm)

Used to drill into timber-to-timber or steel-to-timber connections without needing to pre-drill.



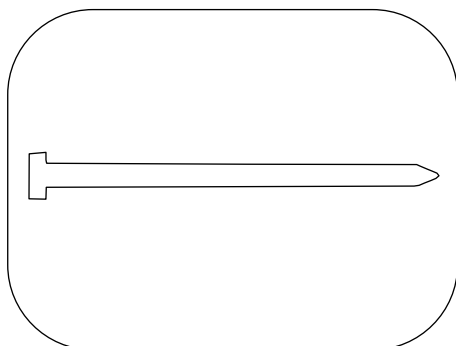
BUTTON SCREW (25mm)

Used to fix the interior wall-art cladding to the frame.



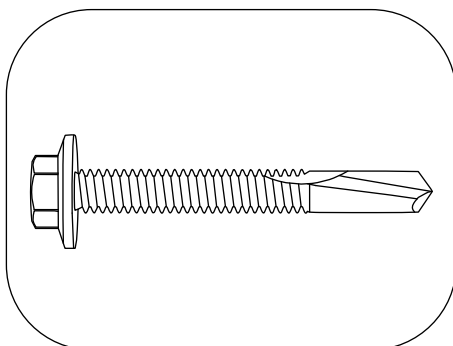
EXTERNAL TIMBER SCREW (75mm)

Used to fix the timber frames together.



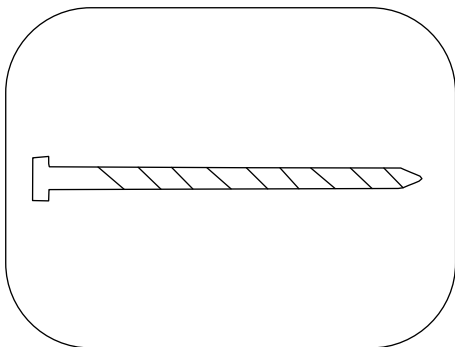
BRAD NAIL

Used on the bracing and the connectors for the wall art.



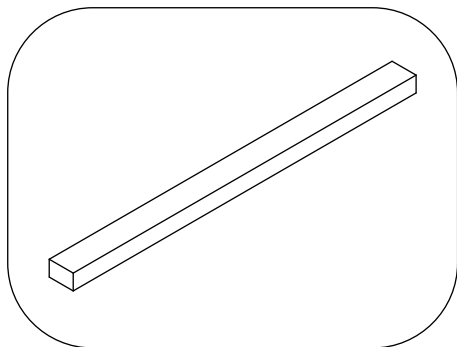
SERIES 500 SCREW

Used on the steel frame for the decking.

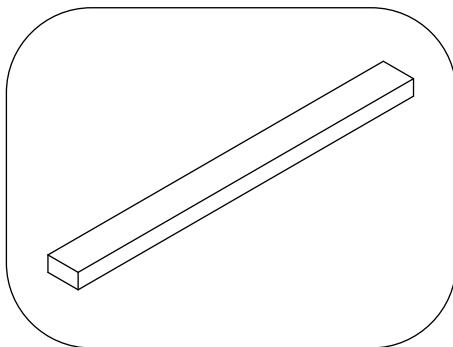
**DECKING NAIL**

Used for the decking; its twisted shank holds far better than an ordinary nail.

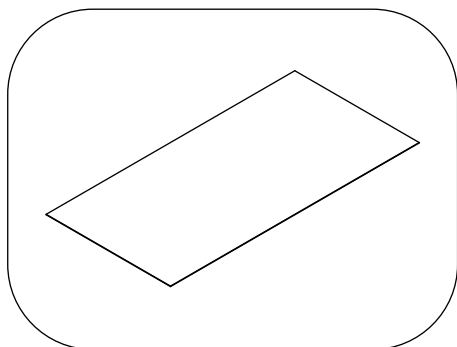
A.05 MATERIALS



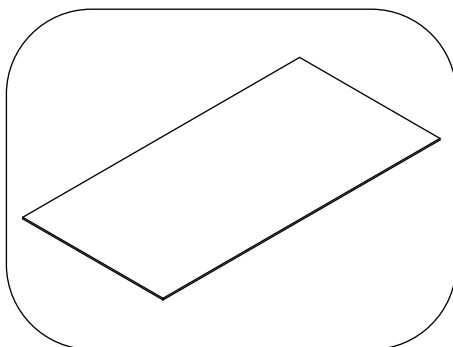
PINE T2 MGP10 BLUE 70x45



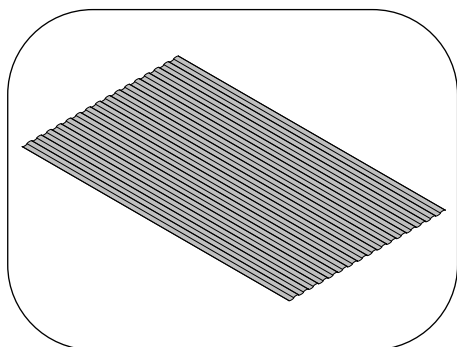
**PINE T2 BLUE MGP10 H3 TRUSTED JOIST
TREATED 90 x 45**



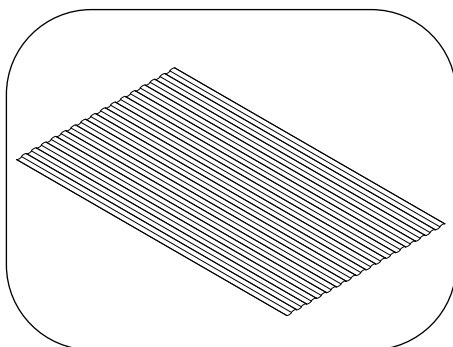
WALL ART 1800 x 900 x 3 SNOW WHITE



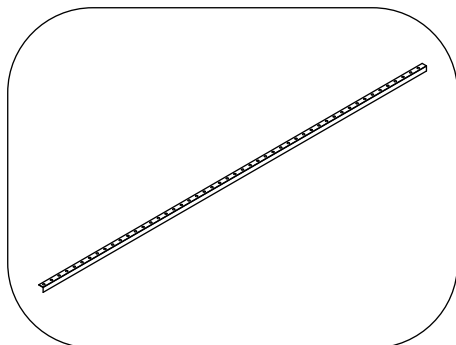
PLY SHADOWCLAD 12mm SHT RAW



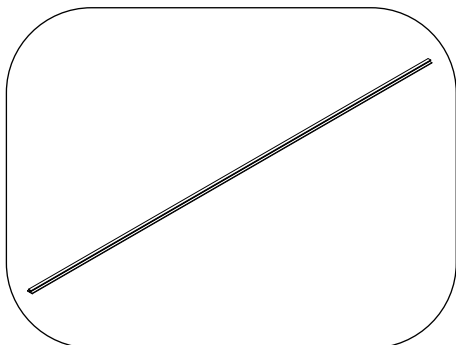
**STEELINE CORRUGATED 0.42 762
GALVANISED**



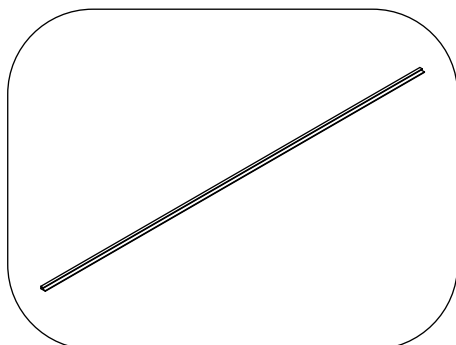
LASERLITE 2000 CORRUGATED CLEAR



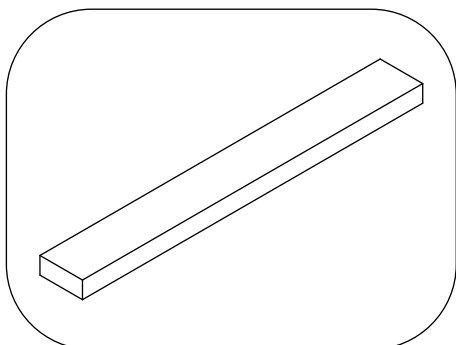
ANGLE BRACING STEEL 20x20x1



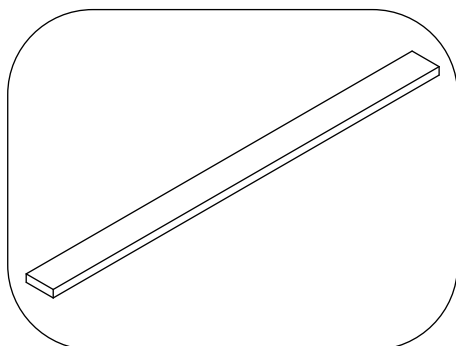
WALL ART PVC SHEET JOINER



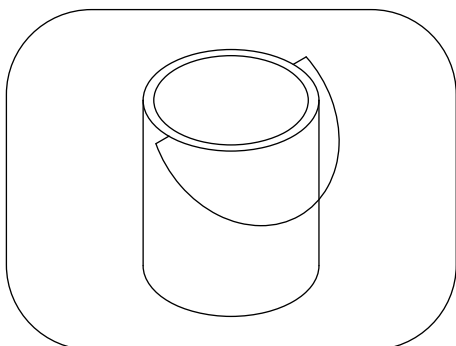
WALL ART PVC TOP / END CAP



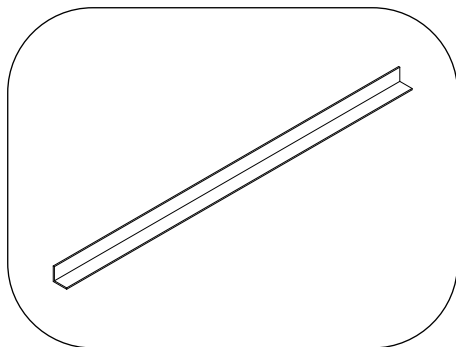
OREGON FASCIA BEAM 50 x 125



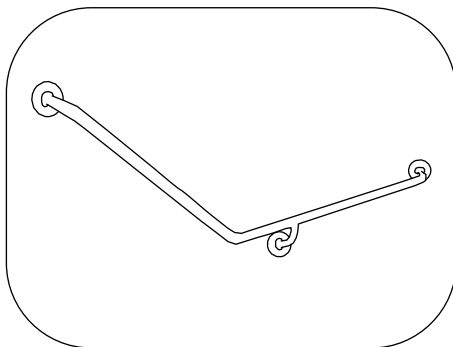
**RECYCLED HARDWOOD DECKING
70 x 19**



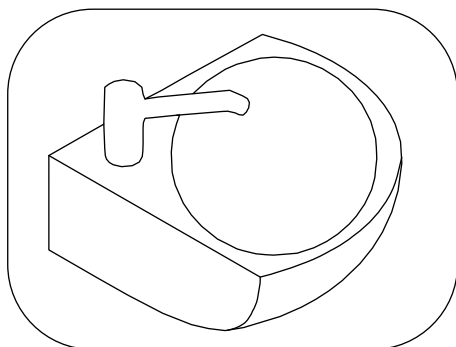
**DULUX LOW SHEEN WEATHERSHIELD
BLACK PAINT**



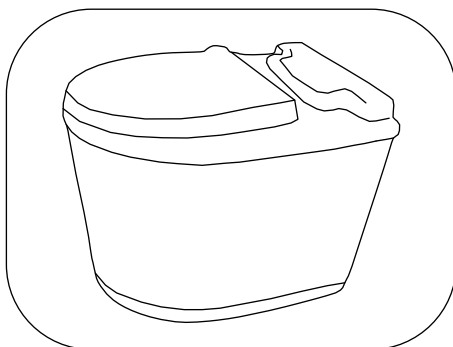
EQUAL ANGLE GALVANISED BRACKET
70 x 70 x 6



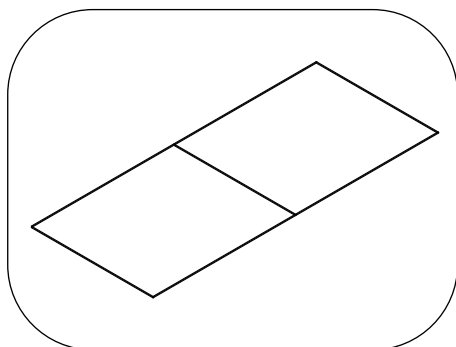
HAND RAIL



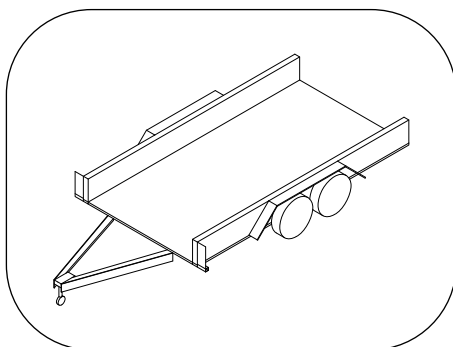
CORNER BASIN



GREEN LOO DRY COMPOSTING TOILET



DOOR FRAME



TRAILER

A.06 CUT LIST

ITEM	SPECIFICATIONS
Pine T2 MGP10 Blue	70 x 45
Pine T2 Blue MGP10 H3 Trusted Joist Treated	90 x 45
Steelline Corrugated 0.42 762 Galvanised	17mm
Laserlite 2000 Corrugated Clear	17 mm
Ply Shadowclad Sht Raw	12mm
Angle Bracing Steel	20x20x1
Wall Art PVC Snow White	1800 x 3
Wall Art Sheet Joiner	1800 x 5
Wall art PVC Top/End	1800 x 5
Oregon Fascia Beams	120 x 45-50
Recycled Hardwood Decking	70 x 19
Equal Angle Galvanised Bracket	70 x 70 x 6
Sink and Basin	
Door Frame	
Green Loo Self Composting Toilet	
Trailer	

QUANTITY	USE	STORE
2/3070, 1/1515, 1/1470	Bottom Plates	WB Hunters (Trade/ Rural and Hardware)
8/2255, 8/2055, 4/1420. 12/250, 4/2300, 2/2478.5, 1/2345	Studs	
4/387.5, 4/260, 2/817.5, 2/855, 4/480, 2/525, 2/945, 2/427.5, 1/900	Noggins	
2/1200, 2/1190	Plates for Decking	
5/2400, 6/3070	Roof and External Cladding	
1/2400		
1/1515 x 1800, 2/ 2100 x 670, 1/2100 x 570	Ply Wood Cladding	
2/3260, 1/2356	Bracing frames	
4/900, 2/450	Internal Cladding	
4	Sheet Joiner for Internal Cladding	
4	Sheet Cap for internal Cladding	
2000, 2/2300, 3900, 3300, 3100, 2900, 2800, 2500	Beam over hanging	Bower Studio Scrap Yard
17/1895, 13/2100	Decking and Door	
1/1895, 2/ 90	For Decking	
1	Sink and Basin	
1	Door Frame	
1	Toilet	Green Loo
1	Trailer	Donation from Nalderun

B. CONSTRUCTION PROCESS

B.01 TALL WALL FRAMES

TOOLS:

- Drop Saw
- Circular Saw
- Planer saw
- Angle grinder
- Hammer
- Clamp
- Drill

NOTE: *The instructions are identical for both the long tall wall and the long short wall. References labelled "A/B 0#" refer to materials for the long tall wall (A) and the long short wall (B). Complete the process once with the A materials, then repeat with the B materials.*

MATERIALS:

Angle Bracing Steel 20x20x1

- 2/ 3260

Pine T2 MGP10 Blue 70 x 45

A. Lengths for long tall wall

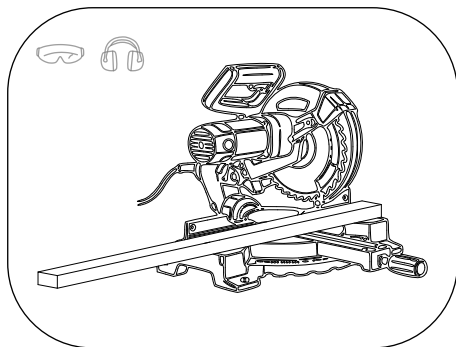
01.	3070
02.	8/ 2255
03.	2/ 1420
04.	6/ 250
05.	2/ 387.50
06.	2/ 260
07.	817.5
08.	855

B. Lengths for long short wall

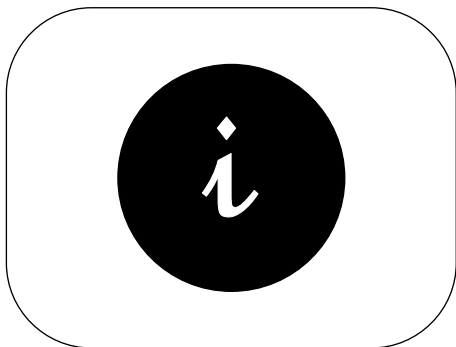
01.	3070
02.	8/ 2055
03.	2/ 1420
04.	6/ 250
05.	2/ 387.50
06.	2/ 260
07.	817.5
08.	855

FIXINGS

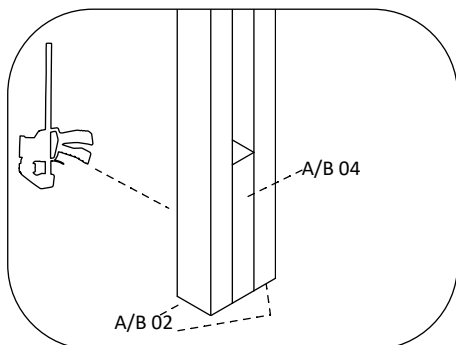
- External Timber Screws x 144
- Brad Nail x 32



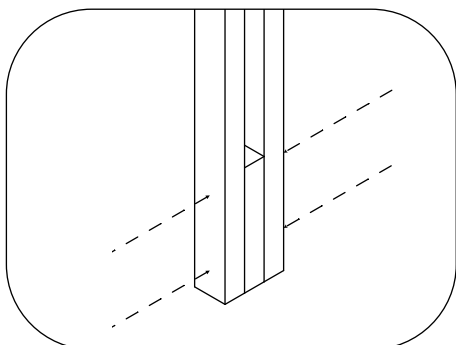
1 Using a drop saw cut all required *Pine T2 MGP10 Blue 70 x 45* lengths as listed on previous page (A01-A08, B01-B08)



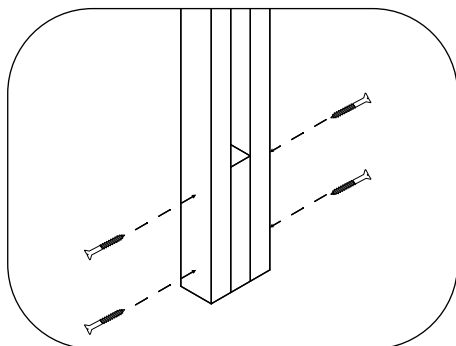
2 Always over-cut, never under-cut. Do not cut exactly on the line - the blade has a 5 mm kerf that offsets the length. Always cut to the longer side of the marked line.



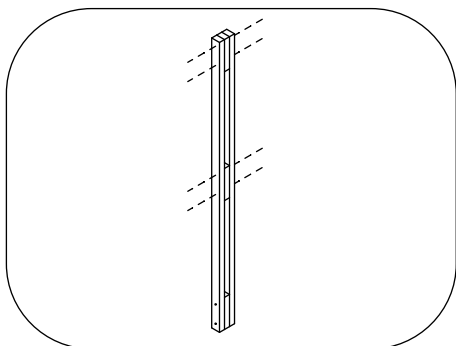
3 Gather materials 2 x A/B 02 and 1 x A/B 04. Use a clamp to ensure the 3 studs are held together and that it is flush at the bottom.



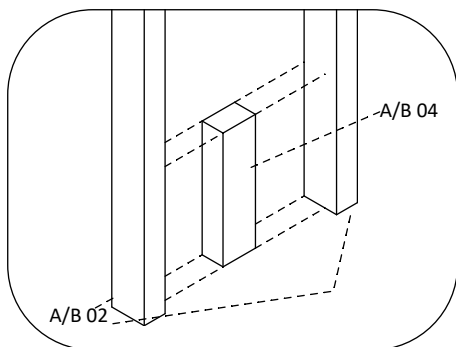
4 Drill 4 pilot holes. Keep the holes well away from the edges and roughly centred on the stud. *(Pilot holes are drilled before every screw from this point onwards, unless stated otherwise.)*



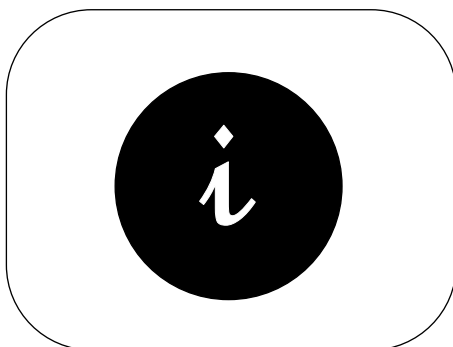
5 Drive 4 External Timber Screws to fix the three studs together. Apply heavy pressure behind the drill to make the screws bite cleanly.



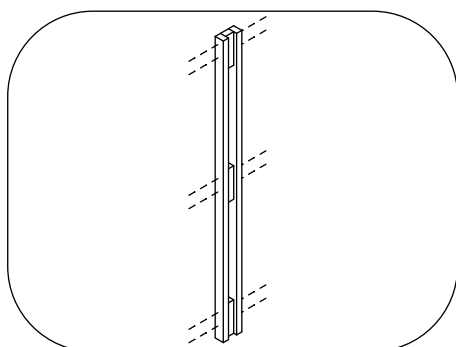
6 Take another 2 x A/B 04 and 8 x External Timber Screws and repeat steps 3–5 for the other two studs along the top.



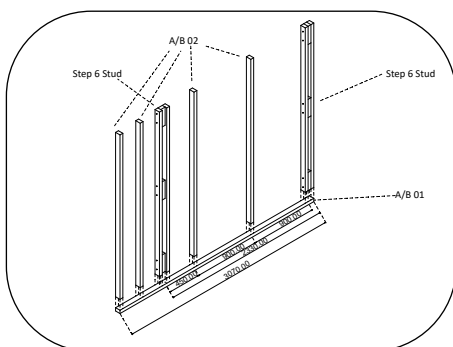
7 Gather materials 2 x A/B 02 and 1 x A/B 04. Repeat steps 3-5, with the alignment shown above have the internal stud rotated 90 degrees. Using 4 x External Timber Screws



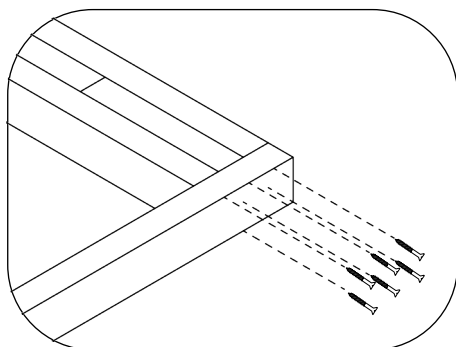
8 The internal stud is rotated so that, when joined to the door wall, it sits flush and allows the fixings to be driven easily.



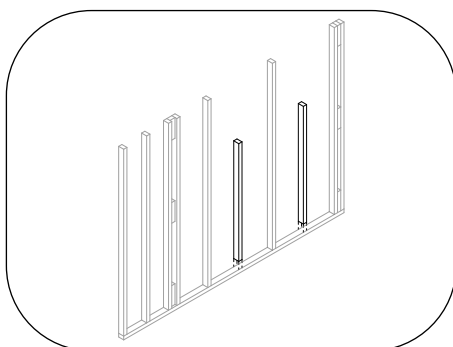
9 Gather 2 x A/B 04 and repeat process 6 to finish the top line. Drive 8 x External Timber Screws.



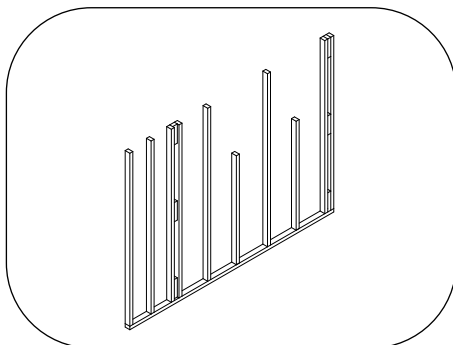
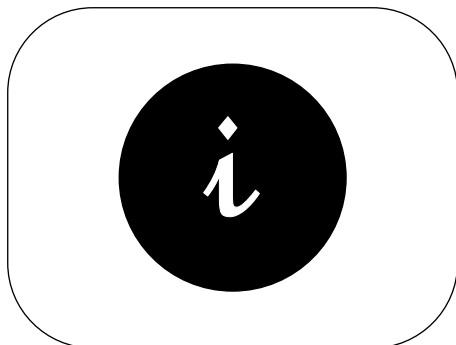
10 Gather 4 x A/B 02 and the assembled studs from steps 6 and 9 and align them on A/B 01. (For the long short wall, the step 6 stud must be flipped 180 degrees.)



11 Drive 2 External Timber Screws per stud, for a total of 20 (including the 6 already shown in the image), to fix the studs from step 10.

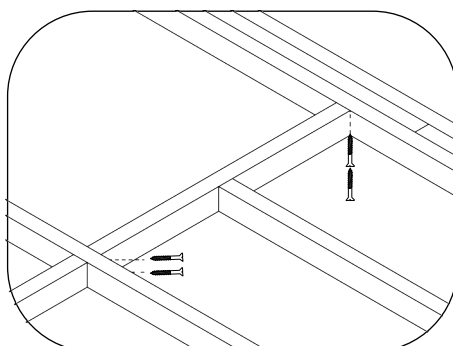
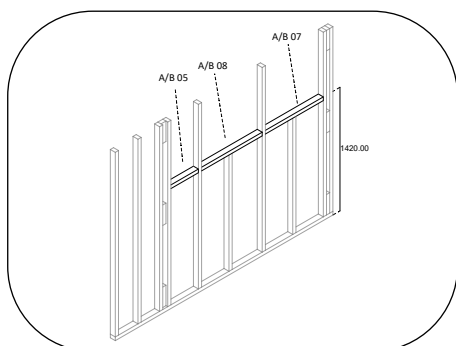


12 Gather 2 x A/B 03 and align them so that the spacing between them is equal.



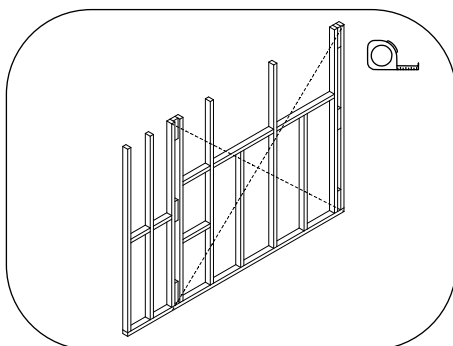
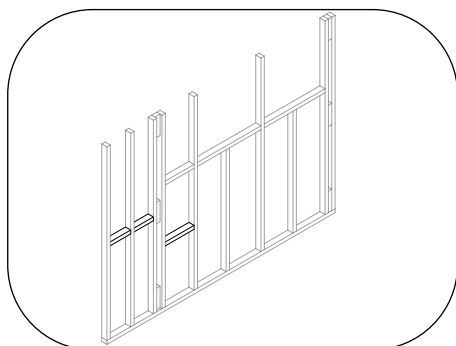
13 The middle studs stop at 1420 mm to allow the internal lining to be screwed in. The middle studs are also positioned so that the 900 mm internal lining can be fixed without flexing.

14 Screw the Studs as shown in Step 13. 4 x External Timber screws required.



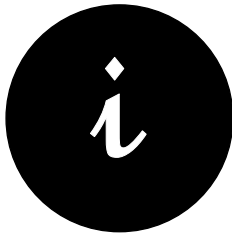
15 With materials A/B 07, A/B 08, and A/B 05. Place these noggins in the positions as shown.
DOUBLE CHECK that they are 1420 from the bottom for the internal cladding

16 The noggins are screwed at an angle because they cannot be reached from behind. 12 x External Timber Screws are required in total for all noggins.

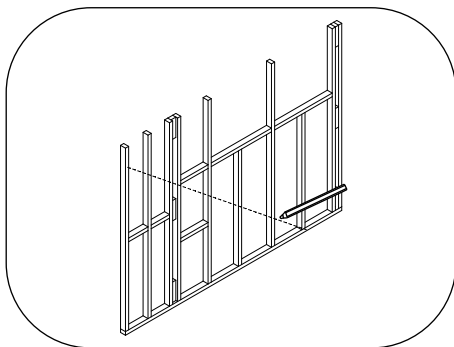


17 Final noggins are added, 1x A/B 05, 2 x A/B 06. 12 x External timber screws. Noggins are screwed as per step 16.

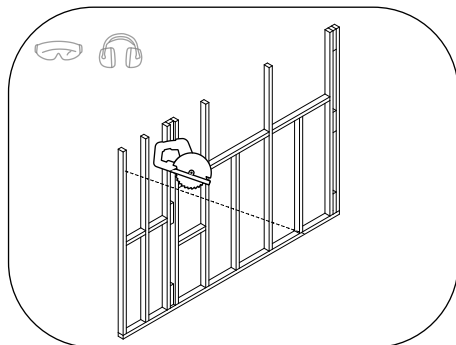
18 Before bracing it is essential that everything is aligned. Using a tape measure, measure the diagonal measurements across the frame.



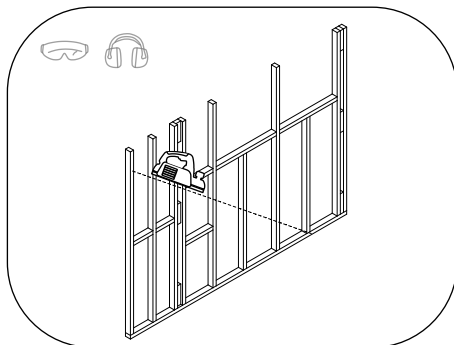
19 To make it square, brute force will be required. Using hammer to hit the top and move in edges. As well as possibly shaking the structure to move it square.



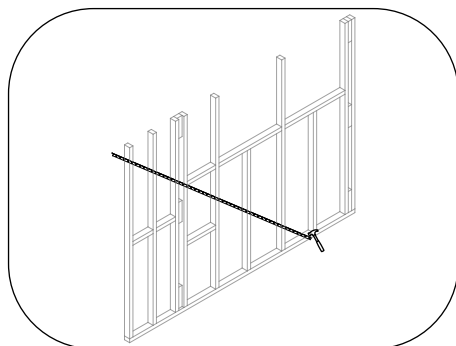
20 Once the frame is square, mark the line where the angle brace will sit. The brace is positioned so that it is hidden by the cladding rather than visible through the windows at the top.



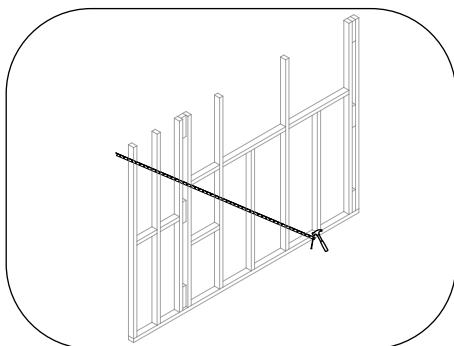
21 Using the circular saw, cut along the marked lines to create an indentation that the angle brace will sit into.



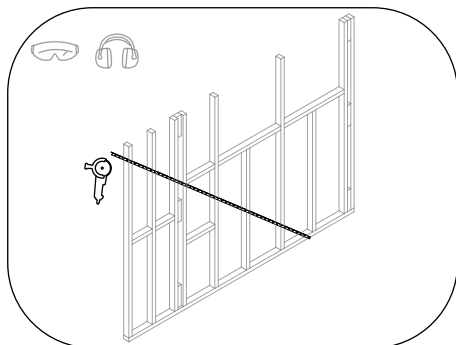
22 Using the planer saw, run over each cut mark to grind it down slightly so the angle brace sits flush on the stud frame.



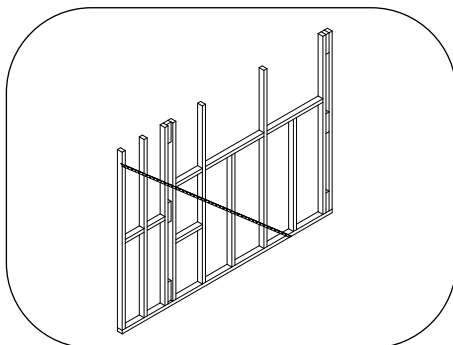
23 Take 1 x Angle Bracing Steel 20 x 20 x 1 and hammer it into the cut line, making sure it sits flush.



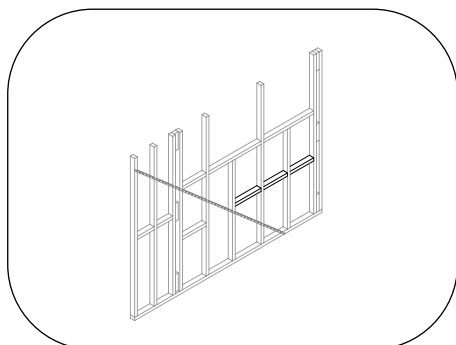
24 Drive 16 x Brad Nails — two at each point where the angle bracing crosses a stud — to fix the brace to the wall.



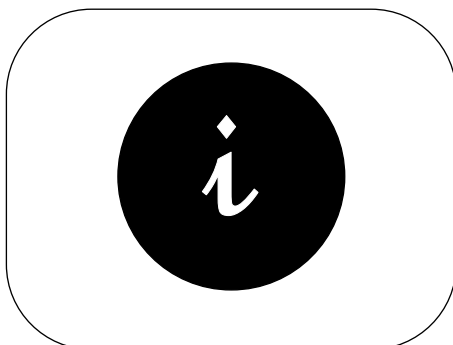
25 Using the angle grinder, cut off the excess angle bracing at the ends of the frame.



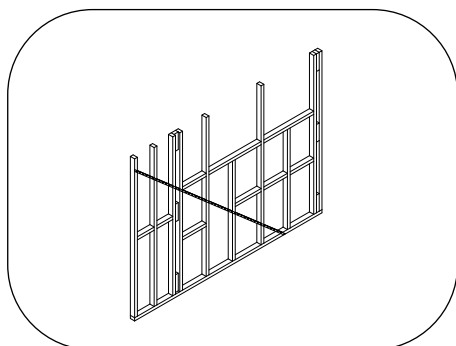
26 Finished angle bracing on frame wall.



28 On the long tall wall only, cut three extra noggins and place them roughly halfway between the existing noggins to support the handrail.



29 We do not know location of hand rail so this is done post construction phase.



30 Completed Frame wall.

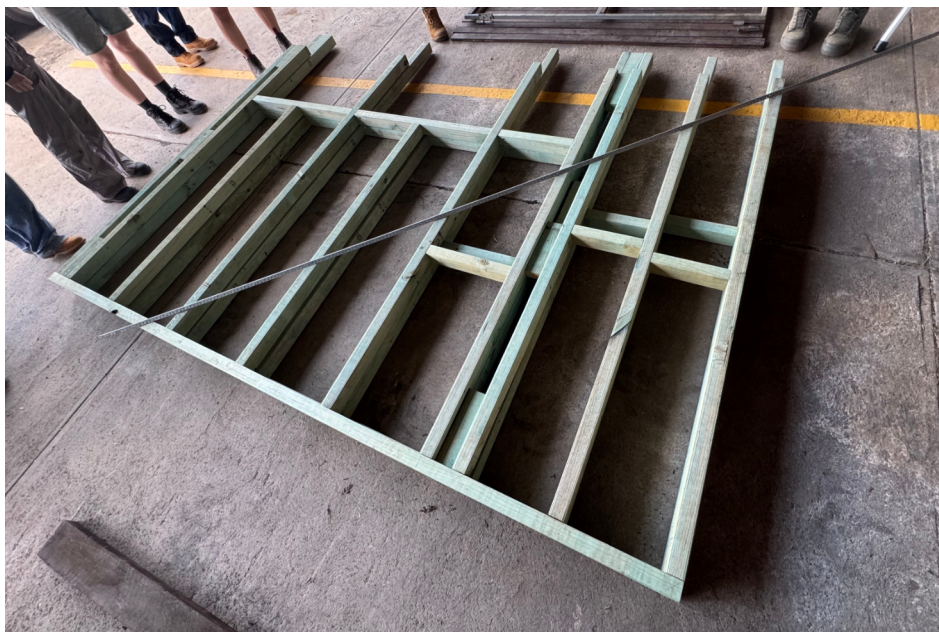


Figure 1.1 Construction of the framing on site.

B.02 BACK WALL

TOOLS:

- Drop Saw
- Circular Saw
- Planer saw
- Angle grinder
- Hammer
- Drill

NOTE: Many of the fixings and joints are identical to those described in B.01. Steps such as pre-drilling pilot holes are not repeated here but should still be carried out unless stated otherwise.

MATERIALS:

Angle Bracing Steel 20x20x1

- 1/ 2356

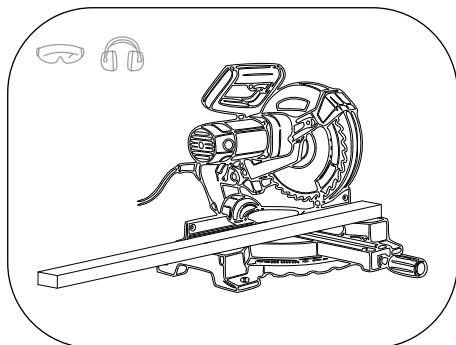
Pine T2 MGP10 Blue 70 x 45

A. Lengths

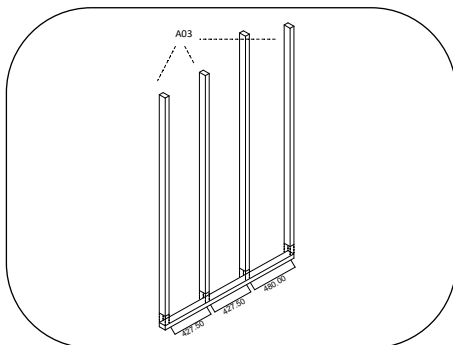
- | | |
|-----|-----------|
| 01. | 1/1515 |
| 02. | 1/ 2478.5 |
| 03. | 3/ 2300 |
| 04. | 1/ 525 |
| 05. | 1/ 945 |
| 06. | 2/ 480 |
| 07. | 2/ 427.5 |

FIXINGS

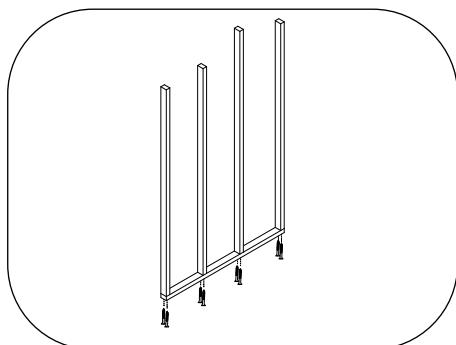
- External Timber Screws x 34
- Brad Nail x 8



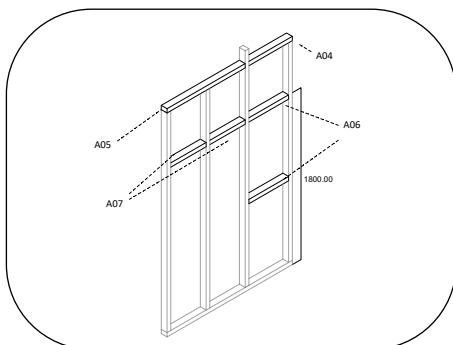
1 Using a drop saw cut all required *Pine T2 MGP10 Blue 70 x 45* lengths as listed on previous page (A01-A07)



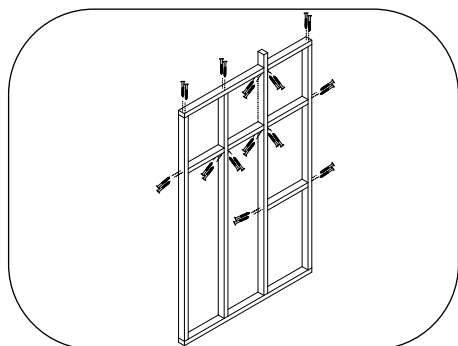
2 Take A01 and lay this base plate on the floor. Align A02 and A03 studs along the frame wall.



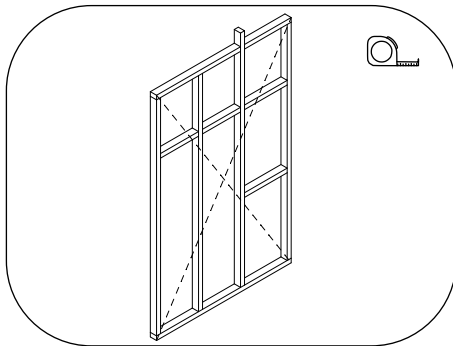
3 Drive 8 x External Timber Screws (with pilot holes as before) to fix the base plate to the three studs.



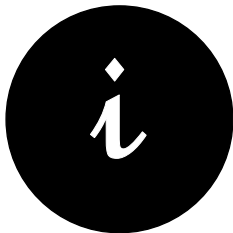
4 Gather the remaining noggins A04–A07. The key measurement is for noggins 2 x A07 and 1 x A06, which must sit at 1800 mm so the internal cladding can be aligned to them.



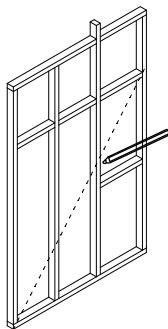
5 Drive 26 x External Timber Screws to secure the noggins. **Use the angled screw technique from the previous wall. **



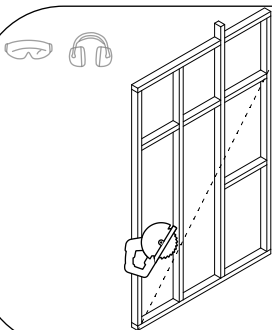
6 Measure from each corner of the frame across the diagonals. The two measurements must match for the frame to be considered square.



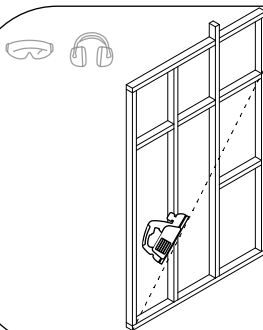
7 To make it square, brute force will be required. Using hammer to hit the top and move in edges. As well as possibly shaking the structure to move it square.



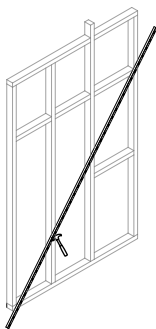
8 Once square, mark the line where the angle brace will sit. The brace is positioned so that it is hidden by the cladding rather than visible through the windows at the top.



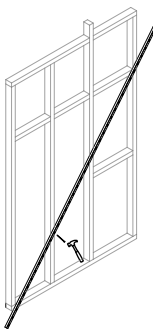
9 Using the circular saw, cut along the marked lines to create an indentation for the angle brace.



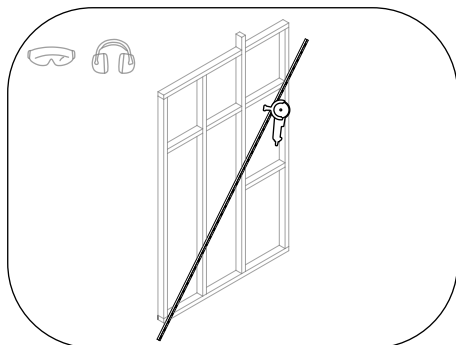
10 Using the planer saw, run over each cut to grind it down slightly so the brace sits flush on the stud frame



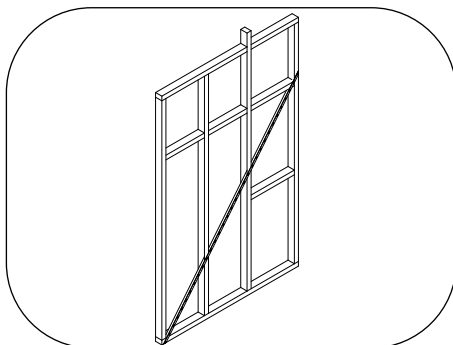
11 Take 1 x Angle Bracing Steel 20 x 20 x 1 and hammer it into the cut line, making sure it sits flush.



12 Drive 8 x Brad Nails — two at each point where the brace crosses a stud — to fix the brace to the wall.



13 Using an angle grinder, cut off the excess brace.



14 Finished back door wall frame.



Figure 1.2 Back wall frame.

B.03 DOOR WALL

TOOLS:

- Drop Saw
- Clamp
- Drill

NOTE: Many of the fixings and joints are identical to those described in B.01. Steps such as pre-drilling pilot holes are not repeated here but should still be carried out unless stated otherwise.

MATERIALS:

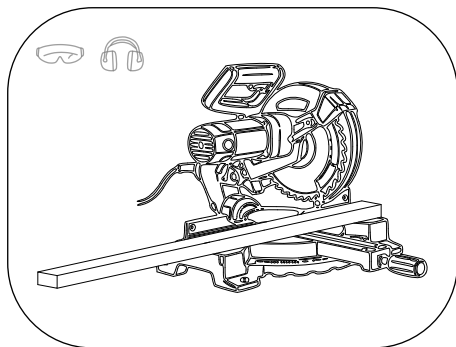
Pine T2 MGP10 Blue 70 x 45

A. Lengths

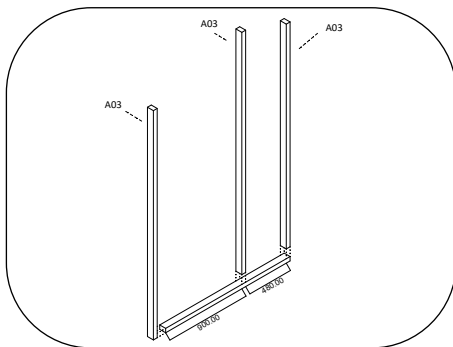
01.	1/1470
02.	1/ 2478.5
03.	1/ 2300
04.	1/ 2345
05.	1/ 525
06.	1/ 945
07.	2/ 480
08.	1/ 900

FIXINGS

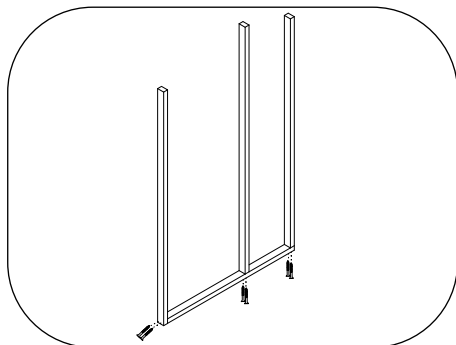
- External Timber Screws x 26



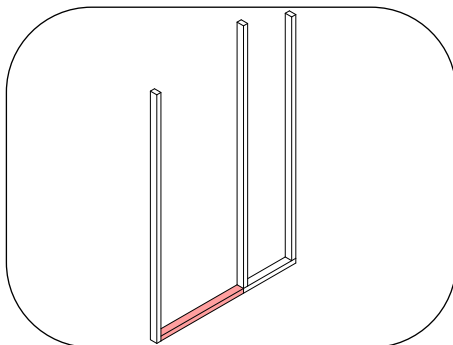
1 Using a drop saw cut all required *Pine T2 MGP10 Blue 70 x 45* lengths as listed on previous page (A01-A08)



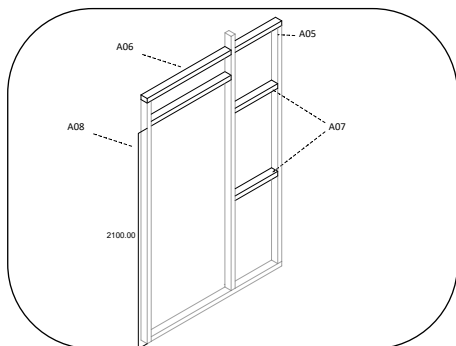
2 Take A01 and lay this base plate on the floor. Align studs A02–A04 along the frame wall.



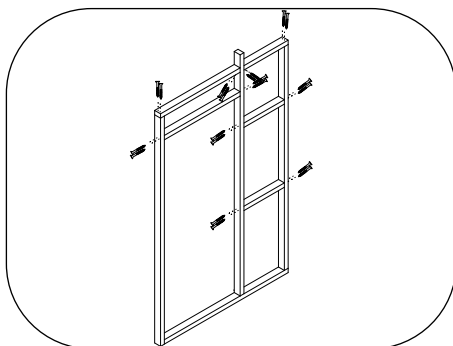
3 Drive 6 x External Timber Screws to fix the studs to the base plate



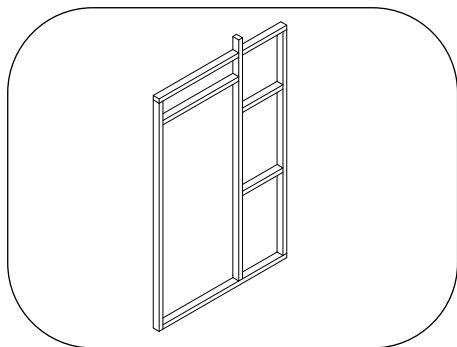
4 **The area marked red will be removed once the frame is up — that is where the door will go. The plate is only there temporarily to make assembly easier.**



5 Gather the remaining noggins A05–A08. The key measurement is for noggin A08, which must sit at 2100 mm to set the door height.



6 Drive 20 x External Timber Screws to secure the noggins into the door wall.



7 Finished Door wall frame.

B.04 OREGON FASCIA BEAMS

TOOLS:

- Drop Saw
- Circular Saw
- Drill
- Pencil
- Measuring Tape
- L square

NOTE: *Many of the fixings and joints are identical to those described in B.01. Steps such as pre-drilling pilot holes are not repeated here but should still be carried out unless stated otherwise.*

MATERIALS:

Oregon Fascia Beams

A. Long Beams

- | | |
|-----|---------|
| 01. | 1/ 3900 |
| 02. | 1/ 3300 |
| 03. | 1/ 2800 |

B. Short Beams

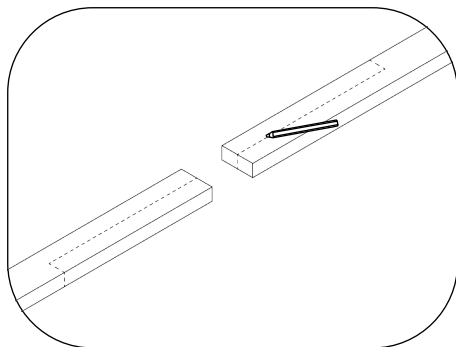
- | | |
|-----|---------|
| 01. | 1/ 3100 |
| 02. | 1/ 2900 |
| 03. | 1/2500 |

Long Tall Wall Frame

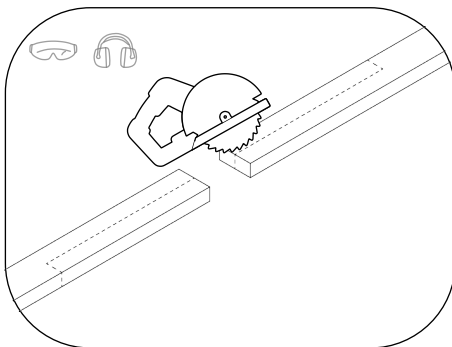
Long Short Wall Frame

FIXINGS

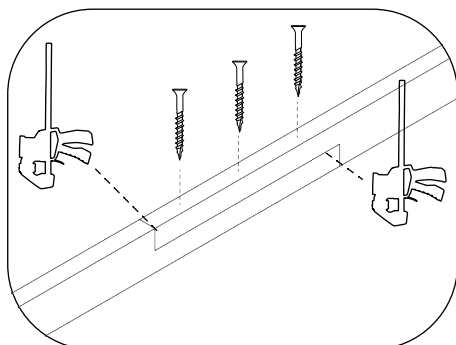
- 100mm Batten Headscrew x 47



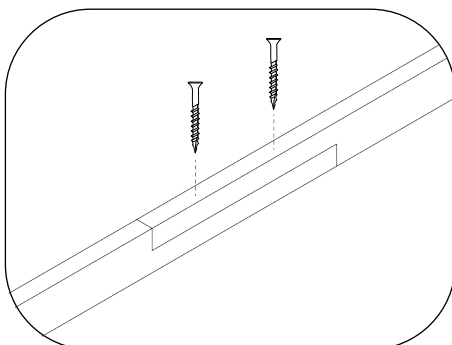
- 1** Take one long Oregon fascia beam (A1) and one short beam (B2). Mark cut lines to create a halving joint, 600 mm into each piece. **Use the L square for accuracy.**



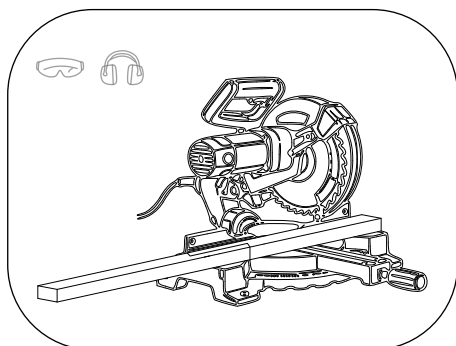
- 2** Using the circular saw, cut out the marked areas to form the halving joint.



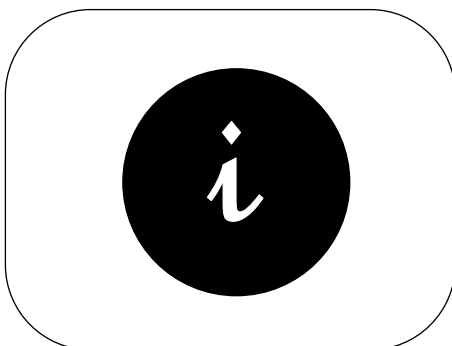
- 3** Align the Halving Joints. Drive 3 x Batten screws on one side fix together one side of the fascia beams. Using 2 clamps will make the process easier aswell.



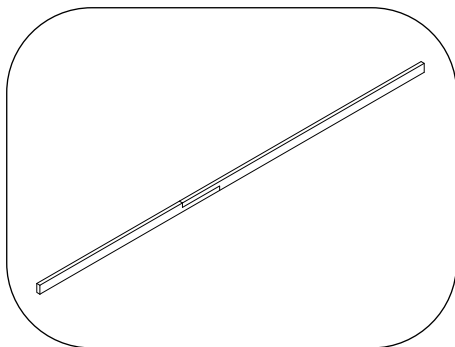
- 4** Repeat step 3 on the other side using 2 x Batten Screws.



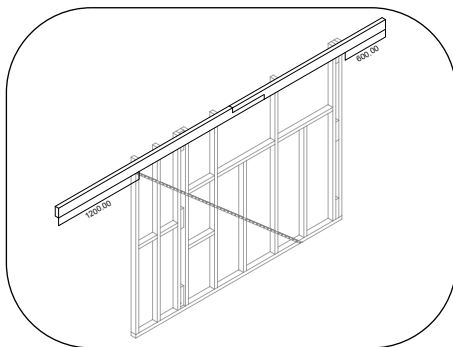
- 5** With the beam screwed together, use a drop saw to cut the beam back to a finished length of 4870 mm.



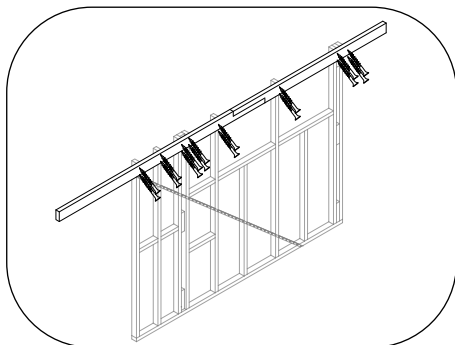
- 6** When trimming excess from the beam, always cut from the longer end. Both ends will sit as cantilevers, and the longer side gives more room to work with.



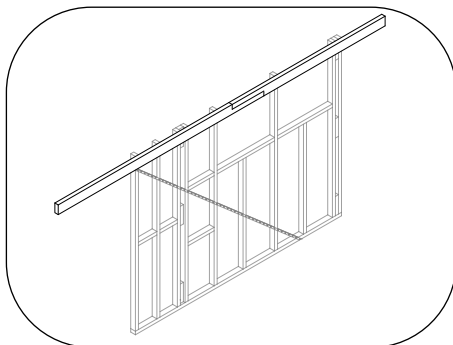
7 The Oregon fascia beam is complete. **Repeat steps 1–6 to make a second identical beam.**



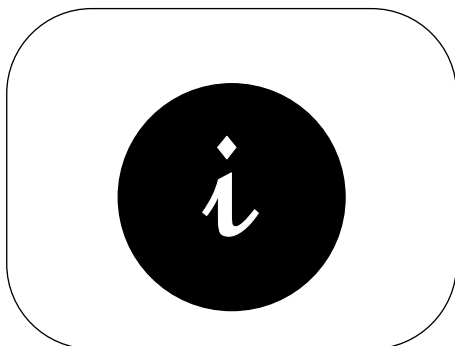
8 Take the long tall wall frame and attach one Oregon fascia beam to it, with an overhang of 1200 mm at the front and 600 mm at the back.



9 Using 16 x Batten Screws in total (2 per stud), fix the Oregon fascia beam to the long wall.
Repeat for the long short wall.



10 Final frame wall with Oregon Fascia Beam



11 Using A03 and B03, repeat the process 1-6 to create an identical beam which will be used in form work B.11.

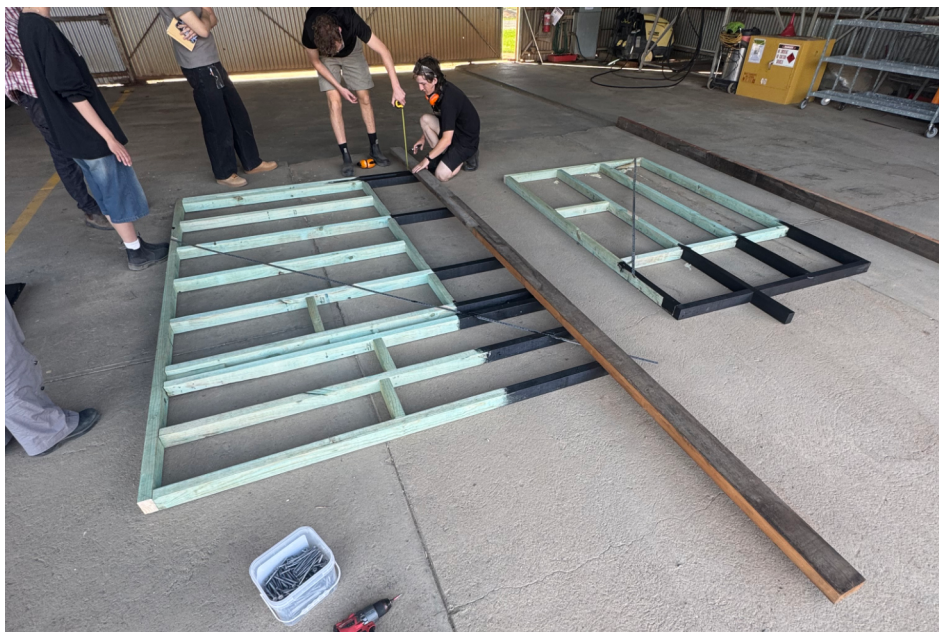


Figure 1.3 Oregon Fascia Beams being fixed on the wall

B.05 DECKING

TOOLS:

- Drop saw
- Angle Grinder
- Drill
- Hammer
- Clamp
- Circular Saw
- Paint Brush

****NOTE** alot of fixings and joinery will be done the exact same as the tall walls shown in B.01, such as pilot screws will not be reiterated as will be expected to be done unless said otherwise**

MATERIALS:

Pine T2 Blue MGP10 trusted joist treated 90 x 45

A. Lengths

01. 2/ 1200

02. 2/ 1190

Recycled Hardwood Decking

- 17/ 1895

Equal Angle Galvanised bracket 70x70x6

B. Lengths

01. 1/ 1895

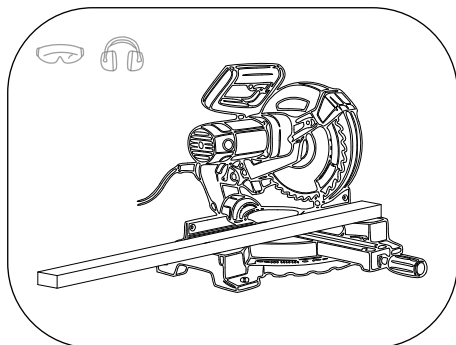
02. 2/ 90

Trailer

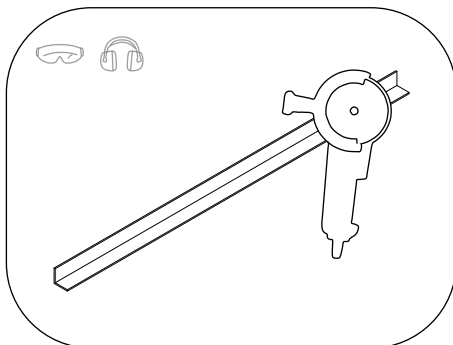
Dulux low sheen weathershield black paint

FIXINGS

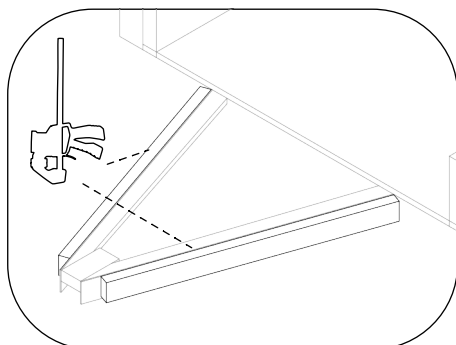
- Series 500 Screws x 14
- 100mm Batten Headscrew x 4
- 50mm Tek Screw x 4
- Decking Screws x 136



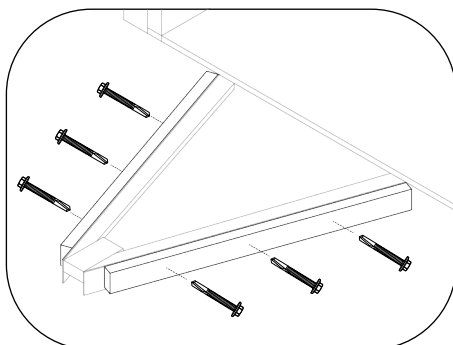
- 1** Using a drop saw cut all required *Pine T2 MGP10 Blue Trusted Joist treated 90 x 45* lengths as listed on previous page (A01-A02)



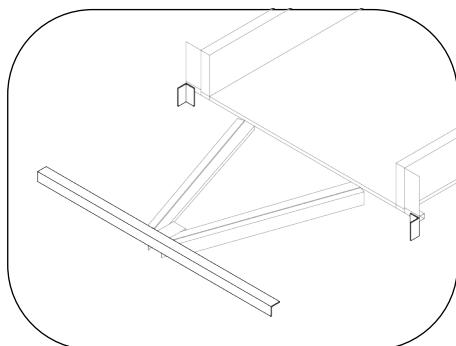
- 2** Using the angle grinder, cut the Equal Angle Galvanised Bracket to the required lengths (B01-B02).



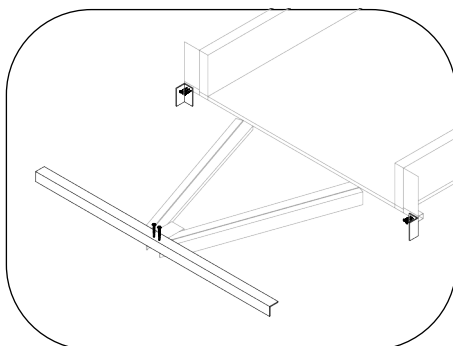
- 3** Take treated pine A02 and the trailer, and align the pine as shown. A clamp can be used to hold it in place.



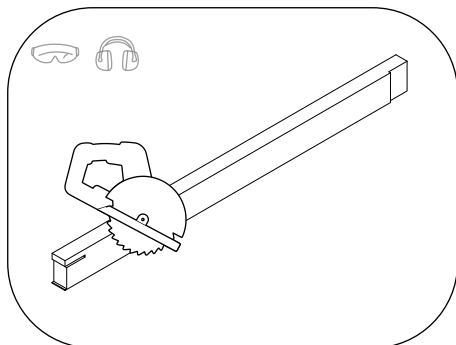
- 4** Drive 6 x Series 500 Screws in total to secure the treated pine to the trailer.



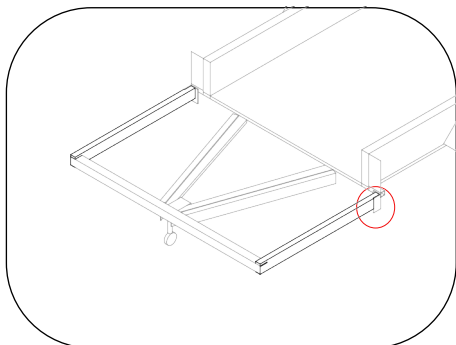
- 5** Take the Equal Angle galvanised brackets cut in step 2 and align them in the positions shown above.



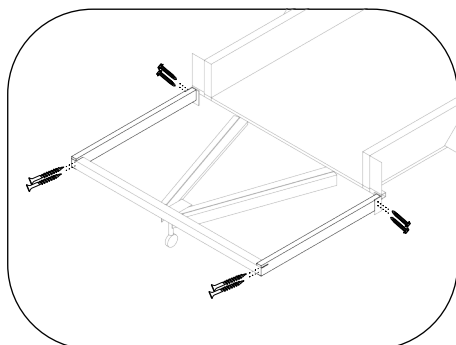
- 6** Drive 8 x Series 500 Screws to brace the EA bracket to the trailer.



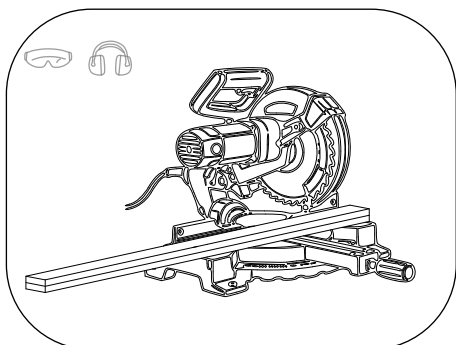
7 For the A01 pieces of pine, use a circular saw to cut a 70 x 6 mm housing as shown. This lets the timber sit checked-in to the EA bracket. Repeat for both pieces.



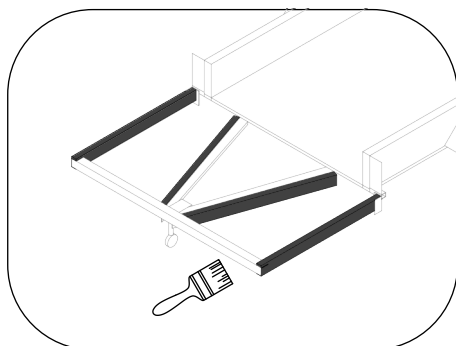
8 Once cut, dry-fit and check each piece before fixing. The area circled red is called "checked in".



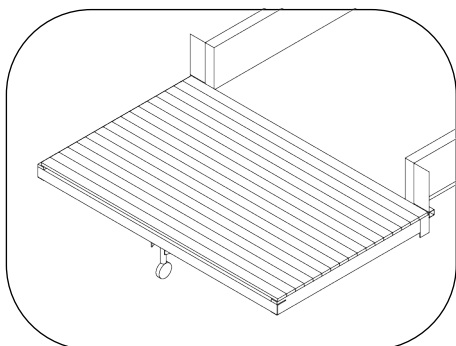
9 Drive 4 x Tek Screws and 4 x Batten Screws to fix the pine in place.



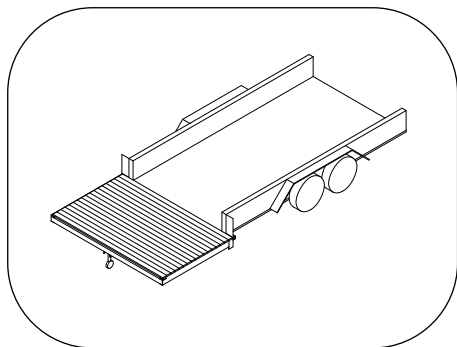
10 Using the drop saw, cut all 17 lengths of recycled hardwood decking.



11 Before fixing the timber decking, paint the pine underneath, as it may remain exposed. This is an aesthetic decision.



12 Align all 17 timber decking boards as shown. Drive 136 decking screws in total (8 per board, 2 per stud intersection) to fix the decking to the trailer.



13 Finished Trailer and Deck.



Figure 1.4 Checked in joint decking.



Figure 1.5 Decking

B.07 PAINT FRAME WALLS

TOOLS:

- Paint Brush

MATERIALS:

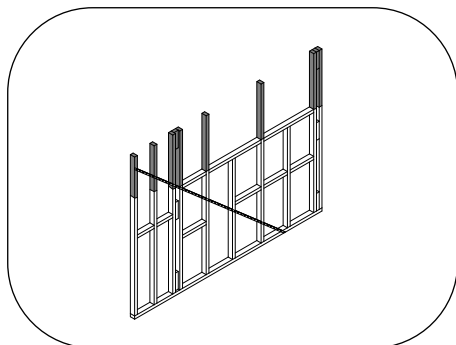
Long Tall Wall

Long Short Wall

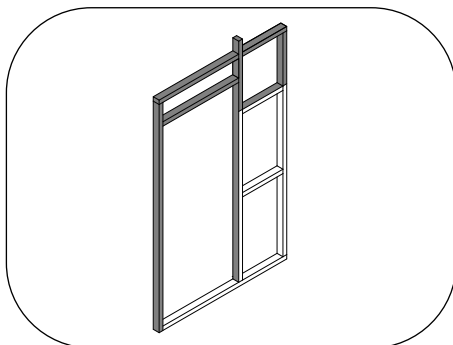
Door Wall

Back Wall

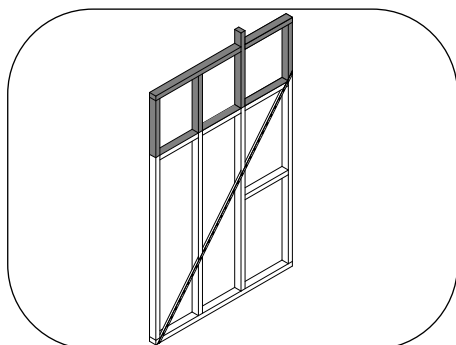
Dulux low sheen weathershield black paint



1 Paint areas marked grey. Same for long short wall.



2 Paint areas marked grey for door wall.



3 Paint areas marked grey for back wall.

B.08 BRACE TO TRAILOR

TOOLS:

- Clamp
- Drill

MATERIALS:

Long Tall Wall

Long Short Wall

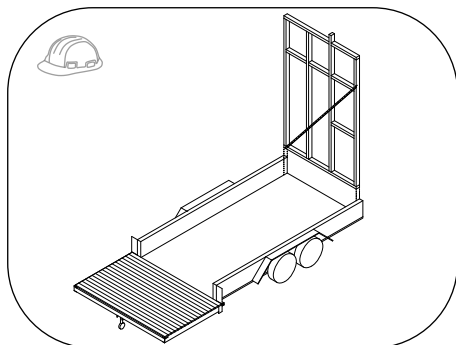
Door Wall

Back Wall

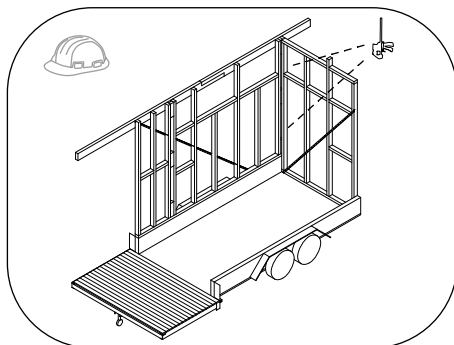
Trailer

FIXINGS

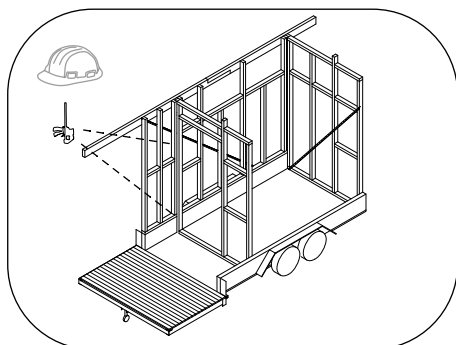
- 50mm Tek Screws x 31
- 100mm Batten Screws x 12



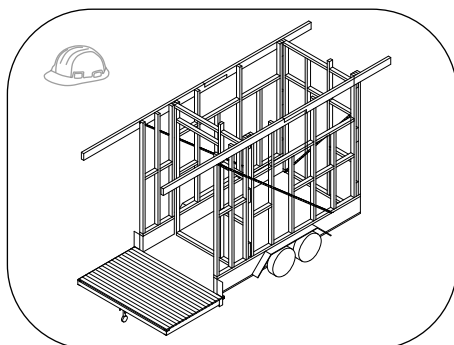
1 Take the back wall and align it at the back of the trailer as shown.



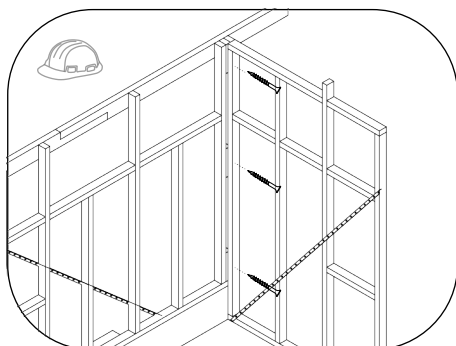
2 Place the long short wall onto the trailer as shown, then clamp it in place temporarily.



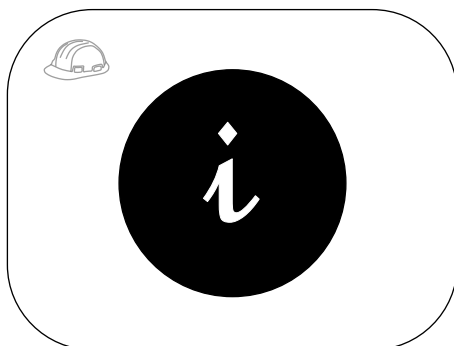
3 Align the door wall with the corresponding triple stud on the short wall. Use a clamp to hold it in place.



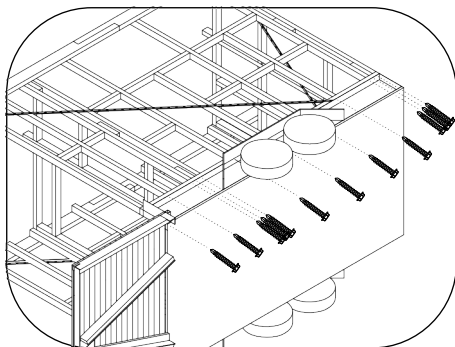
4 Align the long tall wall in its final position and clamp it to the others.



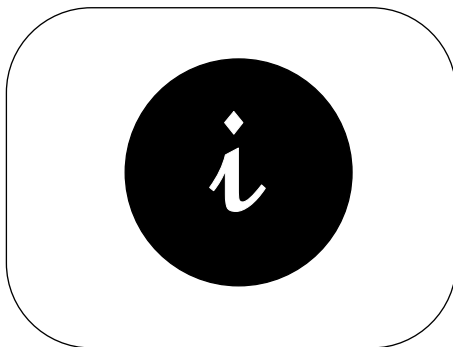
5 With the walls clamped and braced, drive 3 x 100 mm Batten Screws to fix them together.



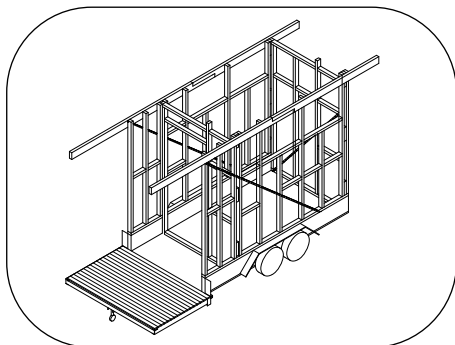
6 Repeat this process three more times at each intersection, using a total of 9 Batten Screws.



7 Drive 12 x Tek Screws to brace the frame to the trailer, with one Tek Screw per stud.



8 Repeat using 12 x Tek Screws on the other long wall, 3 x for the front wall and 4 x for the back wall.



9 Finished frame on trailer.



Figure 1.6 Process of getting the frames up.

B.09 EXTERNAL CLADDING

TOOLS:

- Clamp
- Drill
- Paint Brush

NOTE: *None of the corrugated iron or plywood needs to be cut on site, as we ordered every sheet at the exact size required.*

MATERIALS:

Ply Shadowclad Sht Raw

A. Lengths

- | | |
|-----|----------------|
| 01. | 1/ 1515 x 1800 |
| 02. | 2/ 670 x 2100 |
| 03. | 1/ 570 x 2100 |

Steelline Corrugated 0.42 762 Galvanised

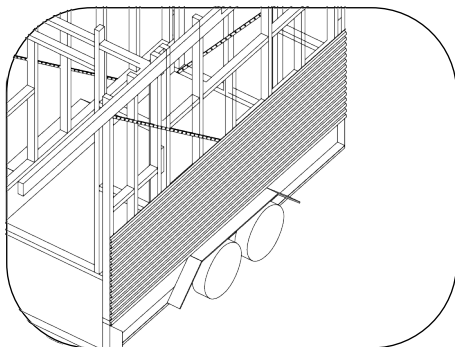
B. Lengths

- | | |
|-----|---------|
| 01. | 4/ 3070 |
|-----|---------|

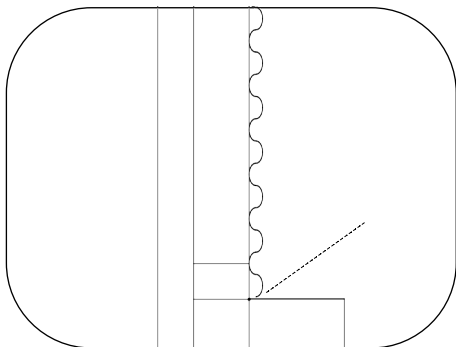
Dulux low sheen weathershield black paint

FIXINGS

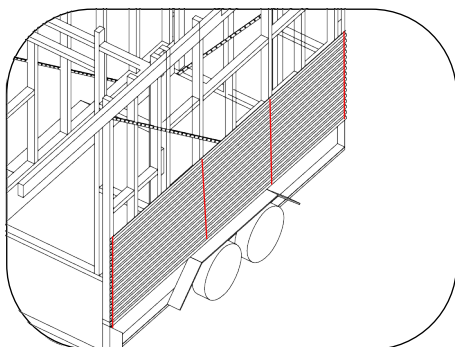
- 25mm Tek Screw x 104



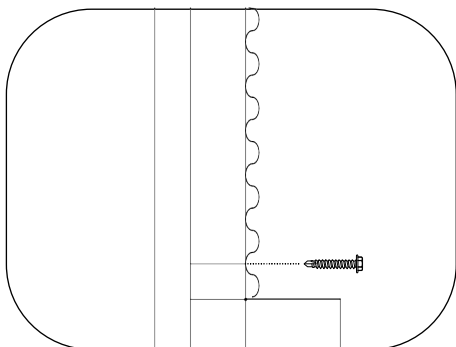
- 1** Align 1 x Steeline Corrugated 0.42 762 Galvanised sheet to the bottom of the stud frame.



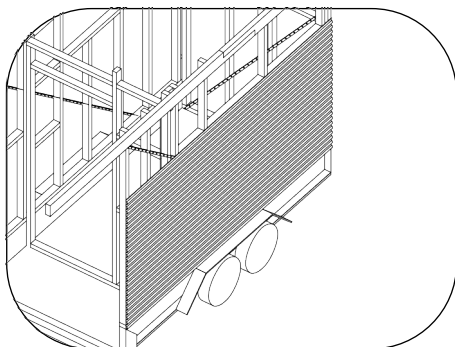
- 2** When aligning the sheet, make sure the bottom of the corrugation curls inward as shown. This prevents loose metal sticking out.



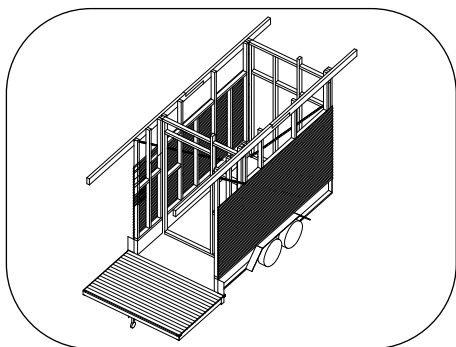
- 3** Once aligned, drive 16 x 25 mm Tek Screws — 4 along each line shown — to fix the corrugated sheet to the timber frame.



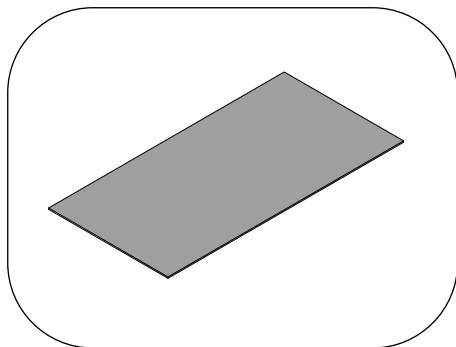
- 4** Always drill into the well of the corrugation, not the peak. Drive at a steady pace, with enough pressure to break through the sheet before the screw bites the timber



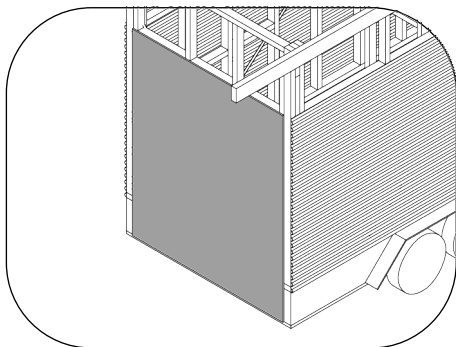
- 5** Take a second sheet of Steeline Corrugated 0.42 762 Galvanised and place it directly above the first. It should align exactly with the 1800 mm noggin.



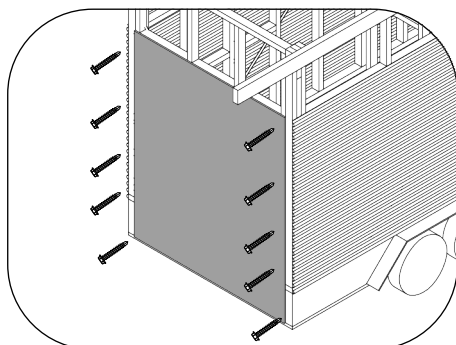
- 6** Repeat the process on the long short wall.



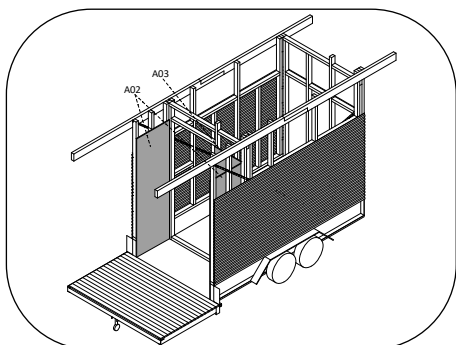
7 Before fixing them to the frame walls, paint all the Ply Shadowclad Sheet Raw panels.



8 Align A01 against the back frame wall.



9 Drive 10 x Tek Screws — five along each side of the wall — to fix the panel in place.



10 Take the remaining A02–A03 panels and align them on the door wall as shown. Drive a total of 30 Tek Screws, 10 per Ply Shadowclad panel.



Figure 1.7 External Cladding being fixed into place



Figure 1.8 Corrugated and Ply intersection.

B.10 INTERNAL CLADDING

TOOLS:

- Drill
- Hammer

NOTE: *This took place after the main construction phase, so some figures (for example, the exact number of brad nails) are estimates.*

MATERIALS:

Wall Art PVC Snow White

A. Lengths

01. 4/ 900

02. 2/ 450

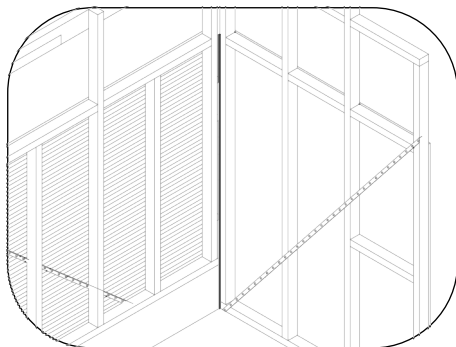
Wall Art Sheet Joiner x 4

Wall Art Top/End x 4

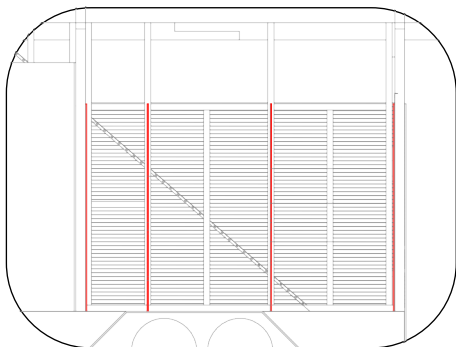
Dulux low sheen weathershield black paint

FIXINGS

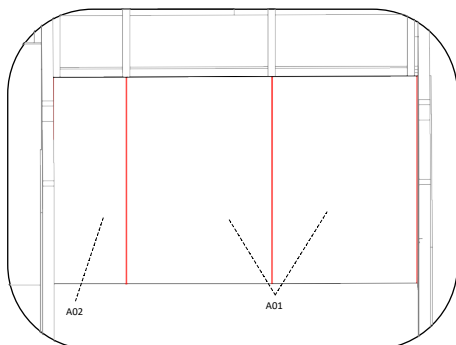
- Button Head Screw x 20
- Brad Nail x 48



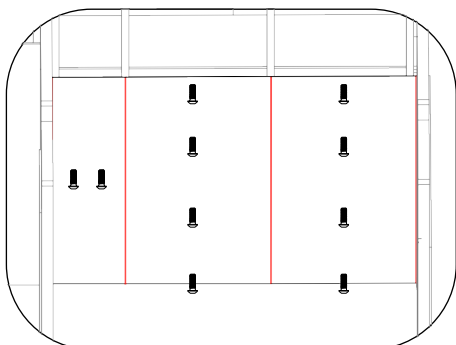
- 1** Fix the first Wall Art PVC Top/End to the corner, using two brad nails at the bottom, middle and top.



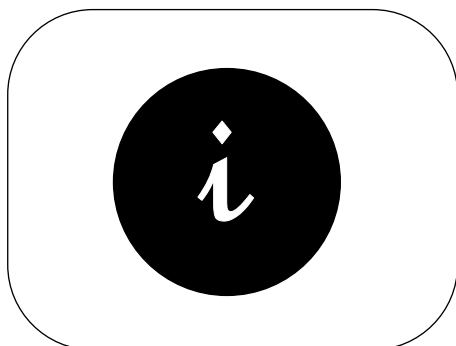
- 2** Repeat for each corresponding PVC sheet joiner and wall art panel, using a total of 18 x Brad Nails.



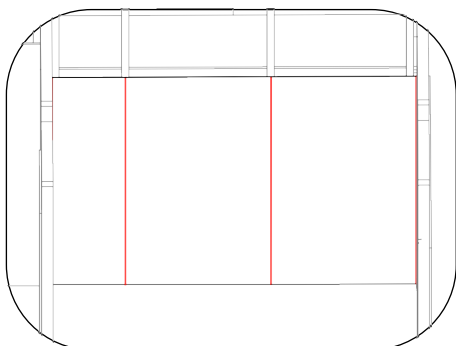
- 3** Slide the Wall Art PVC Snow White panels into the joiners — 1 x A02 and 2 x A01.



- 4** Drive Button Head Screws through the middle of each wall art panel — 10 in total.



- 5** The button-head screws are placed in the middle so the wall art does not flex inward; they hold the panel firmly to the wall.



- 6** Repeat the exact process for the other wall.

B.11 ROOF

TOOLS:

- Drill

MATERIALS:

Steelline Corrugated 0.42 762 Galvanised

A. Lengths

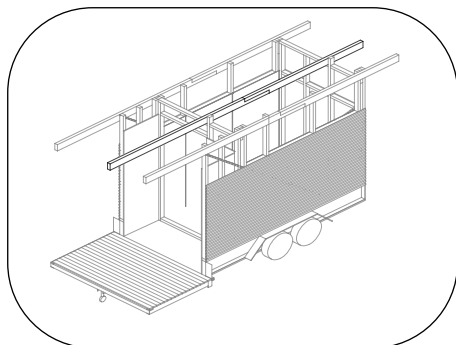
01. 5/ 2400

Oregon Fascia Beam from B.04

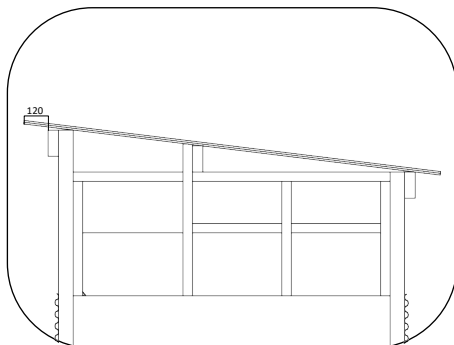
FIXINGS

- 50mm Tek Screw x 12
- 100mm Batten Head Screw x 16

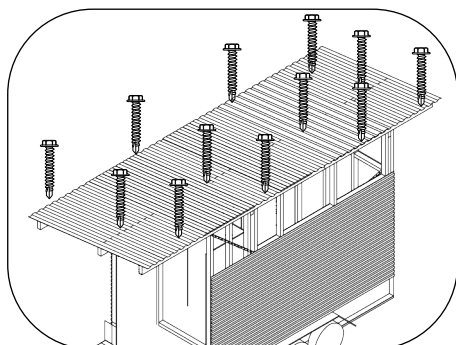
NOTE: *This took place after the main construction phase, so some figures (for example, the exact number of brad nails) are estimates.*



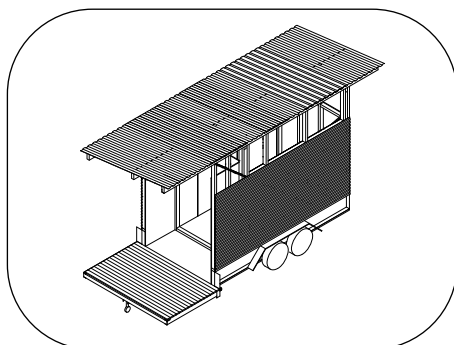
1 Drive 4 x Batten Screws to secure the last Oregon fascia beam to the middle stud of the frame.



2 Lay the 4 sheets of corrugated steel over the Oregon fascia beams, with a 120 mm overhang on either side.



3 Fix the roof sheets in place using 50 mm Tek Screws - 12 per corrugated sheet.



4 Finished trailer with roof.



Figure 1.9 Demonstration of how roofing will sit



Figure 1.10 Our final product

B.12 FINISHING TOUCHES

TOOLS:

- Drop Saw
- Drill

NOTE: *This took place after the main construction phase. The locations described below are best estimates, as the brief did not specify them.*

MATERIALS:

Recylced Hardwood decking

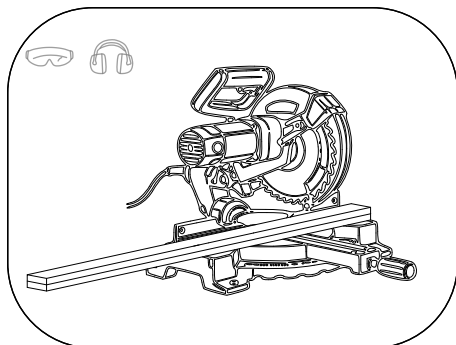
A. Lengths

01. 13/ 2100

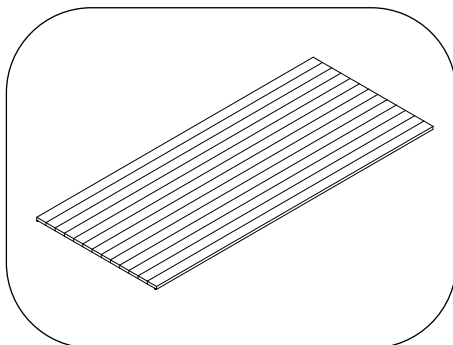
Door Frame

Sink and basing

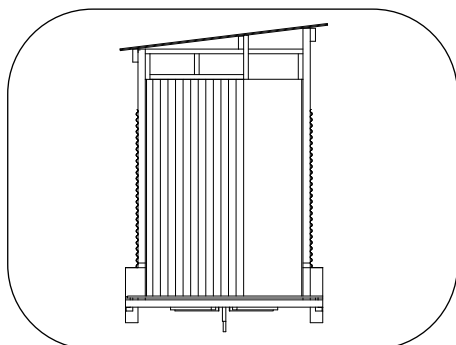
Green Loo Self Composting Toilet.



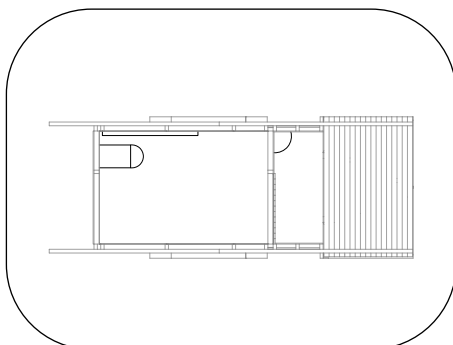
1 Cut the timber decking into the lengths specified. (A01)



2 Align the 13 timber decking boards onto the door frame. The handle and remaining hardware will be fitted post-construction.

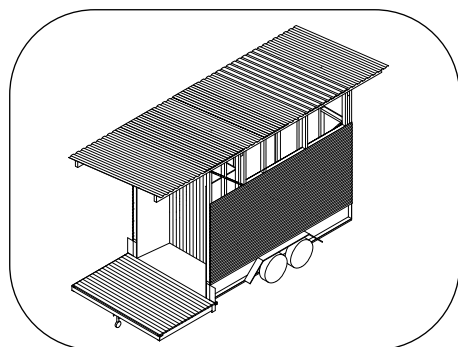


3 Door Positioned as shown.

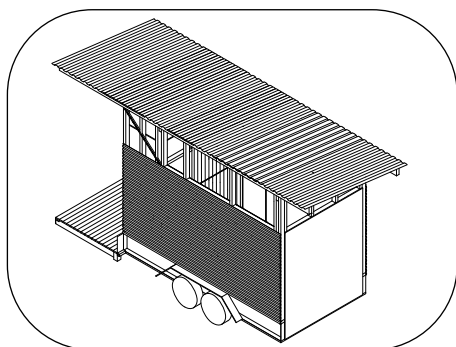


4 The aerial view shows the planned locations of the toilet, basin and handrail. **The basin must sit 900 mm above floor level.**

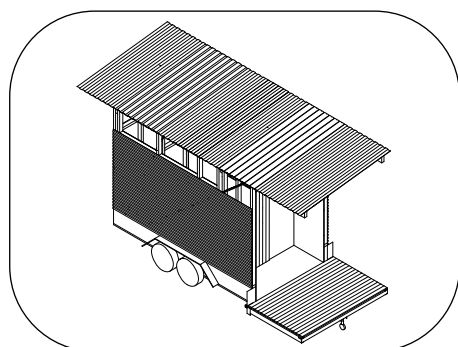
B.13 FINAL TOILET VIEWS



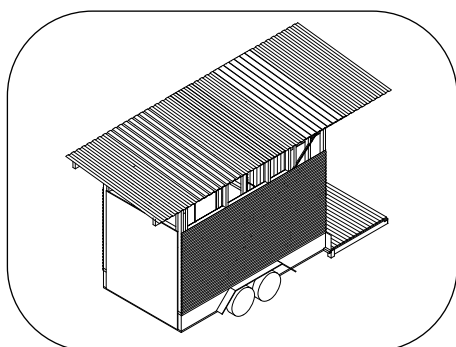
ISOMETRIC NORTH-EAST



ISOMETRIC NORTH-WEST



ISOMETRIC SOUTH-EAST



ISOMETRIC SOUTH-WEST

C. CLOSING STATEMENTS

C.01 REFLECTION

The experience as a whole was completely foreign to me; however, it was something that helped me gain a lot of insightful information and experience.

Not only did I learn how to work in a team, but I also gained experience in teamwork and delegation to ensure that the construction process ran smoothly.

The process taught me a lot about how something planned inside a room can completely change on-site once everything is put into place. This will help me in future circumstances when thinking about planning, specifically where I place walls and where studs and noggins may need to go to support elements such as cladding, wall art, or corrugated sheeting.

CHALLENGES

One of the challenges I faced was during the building stage. As I had never really used tools in this way before, it was challenging at first. Specifically, when screwing the Tek screws into the corrugated sheet, it felt like the drill was getting stuck. However, after applying consistent force and pressure, I was able to overcome this issue.

Another challenge was trying to coordinate measurements and ensure consistency in the construction of the walls. This was often difficult, especially due to the size of the group and the large number of varying measurements. However, through communication and constant checking with Damien and David, we were able to achieve consistent measurements.

If I were to undertake a project like this again, I believe communication would need to be established and maintained from the very beginning to ensure confusion with measurements does not continue throughout the process.

Overall, this was an experience I will never forget. Being part of creating something that will help

others and support the Nalderun community is something I will cherish, and I look forward to possible opportunities to do this again.



Figure 1.11 The Team

C.02 SUSTAINABILITY REPORT

Material Sustainability

Material sustainability and minimising waste were key design considerations when ordering and purchasing materials. All materials that had been pre-planned and measured, such as the corrugated sheets, wall art, and plywood, were bought at the exact size and quantity required so there would be minimal waste or leftover material.

Materials where exact quantities were not known, such as the 70 x 45 pine, were purchased in excess. However, the remaining material was not wasted, as any unused materials from the construction of the toilet were donated to the Nalderun Bush Tucker Farm for future projects.

Additionally, the toilet purchased was from a company called Green Loo, which is self-composting and collects all sewage. This waste can then be reused at the Nalderun Bush Tucker Farm, contributing to a more sustainable system with minimal waste.

As well as material sustainability, ensuring that nothing goes to waste also contributes to economic sustainability. By not purchasing in excess, we avoided throwing out unused material and wasting money. All materials were chosen in the most cost-effective way possible without compromising on quality. This was achieved by sourcing from a salvage yard, accepting donated materials such as the trailer, and using fixings and tools provided by David.

Cultural Sustainability

As well as material sustainability, there is also cultural sustainability. This project supports the continuation of teaching and activities at the Nalderun Bush Tucker Farm community centre.

The toilet was built in a manner that allows it to be used immediately or disassembled and reused in the future, whether in 10 or 20 years. The materials and construction methods were chosen for sustainability, adaptability, and longevity.

The toilet allows the people at Nalderun Bush Tucker Farm to avoid concerns in the short term about having a government-approved toilet on-site for the community, as there is now one available that was created through this project.



Figure 1.12 Material ordered straight to Dookie Site



Figure 1.13 Green Loo Composting Toilet



Figure 1.14 Pine 70x45

C.03 REFERENCES

- Figures 1.6, 1.7, and 1.9 – Taken by Bailey Florence
- Figure 1.11 – From the Bower Studio website
- Perri Sparnon – Undertook this program in 2021, and influence was taken from her workbook layout style used in 2021.