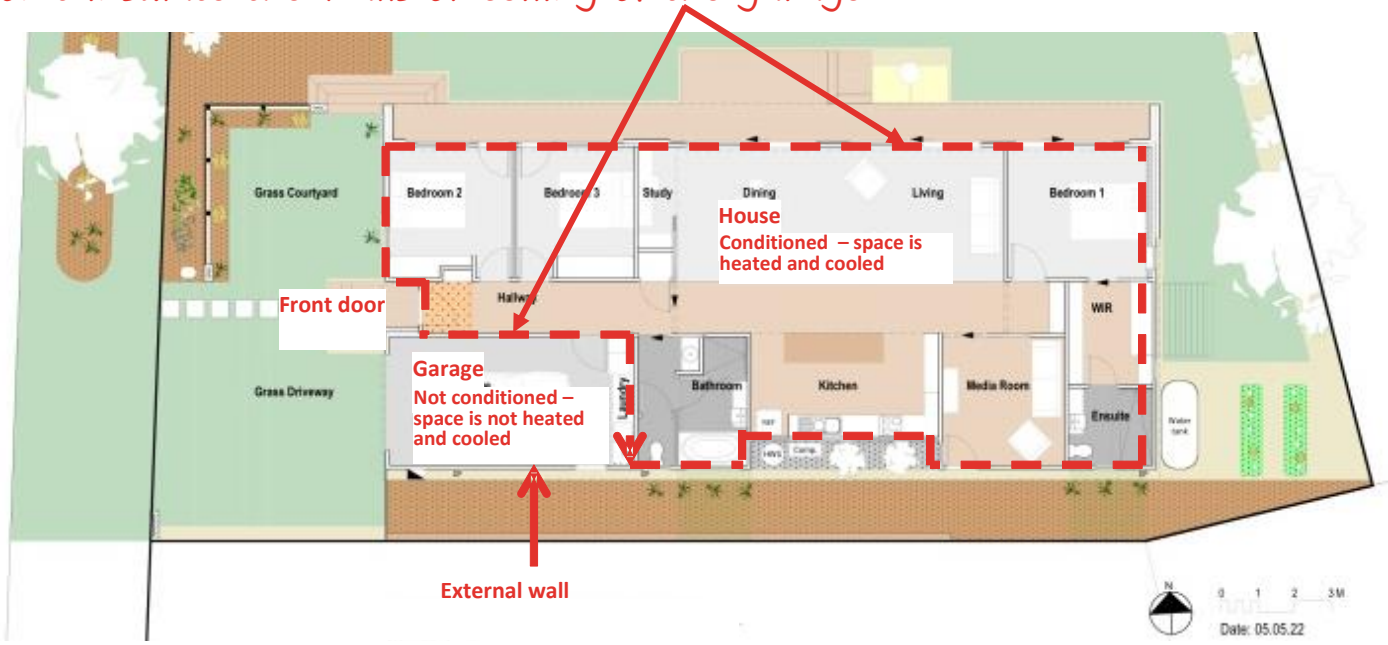
About the Trailer

- The Demonstration Home has a trailer that explains key principles used on the home. This document steps through what is covered on a guided tour regarding the trailer.
- In the construction of a house, the 'thermal envelope' insulates and protects the inside of the house from outside weather conditions.
- This trailer shows what good and bad construction techniques look like.

Thermal Envelope Information

- Airflow moves around your house trying to enter or escape to equalise the temperature.
- In summer hot air tries to get inside your house and cooler air inside your house tries to get out. In winter, cold air tries to get inside your house and warmer air inside your house tries to get out.
- Good building wrapping, sealing and insulation helps to: keep a comfortable temperature inside your house, stop unwanted air entering and exiting causing drafts, and provide moisture control and water protection.
- For more information and to see the videos noted in the following pages, visit: www.commonsss.com.au

Internal garage walls and external walls of the home form the continuous well-wrapped and insulated thermal envelope of this house. Most houses don't insulate the walls or ceiling of the garage.



1. Putting on the wrap and taping joints

(Refer to Video 3 'Putting on the wall wrap' and Video 5 'Taping up the joints').

Left side of the trailer: shows how wall wrap is generally installed.

1.1. The wall wrap is stapled on before the external cladding is installed, and gets blown around and damaged in the wind. Large gaps are often found at the top and bottom plate and wrap is often missing above windows.

1.2. On a corner junction the wall wrap is put on the outside of the building and the insulation is installed on the inside of the building afterwards, leaving areas that are only accessible from the outside not insulated.

Right side of the trailer: shows how wall wrap should be installed.

1.3. The wall wrap is securely taped at the top plate, bottom plate and along all joints to make sure no unwanted airflow is able to enter or escape from the house.

1.4. The insulation is put in from the outside before the wall wrap is installed, ensuring all areas that are only accessible from the outside are insulated.

2. Penetrations

(refer to Video 4 'Sealing around penetrations' for a demonstration).

Left side of the trailer: shows how wall wrap is generally installed around penetrations.

2.1. There are large gaps around the penetrations (brick tie, copper pipe, electrical wire and PVC pipe). These gaps let air flow enter and escape from the house.

Right side of the trailer: shows how wall wrap should be installed around penetrations.

2.2. The brick ties are fixed after the wall wrap has been put on and the pipes and wiring are completely sealed around. This makes sure no unwanted airflow is able to enter or escape from the house.

3. Sealing around windows

(refer to Video 6 'Sealing around windows' for a demonstration).

Right side of the trailer: shows how a window is typically installed.

3.1. There is a gap between the window frame and house frame.

3.2. The wall wrap is put on the outside of the building and the insulation is installed on the inside of the building afterwards, leaving lintel areas that are only accessible from the outside like these not insulated.

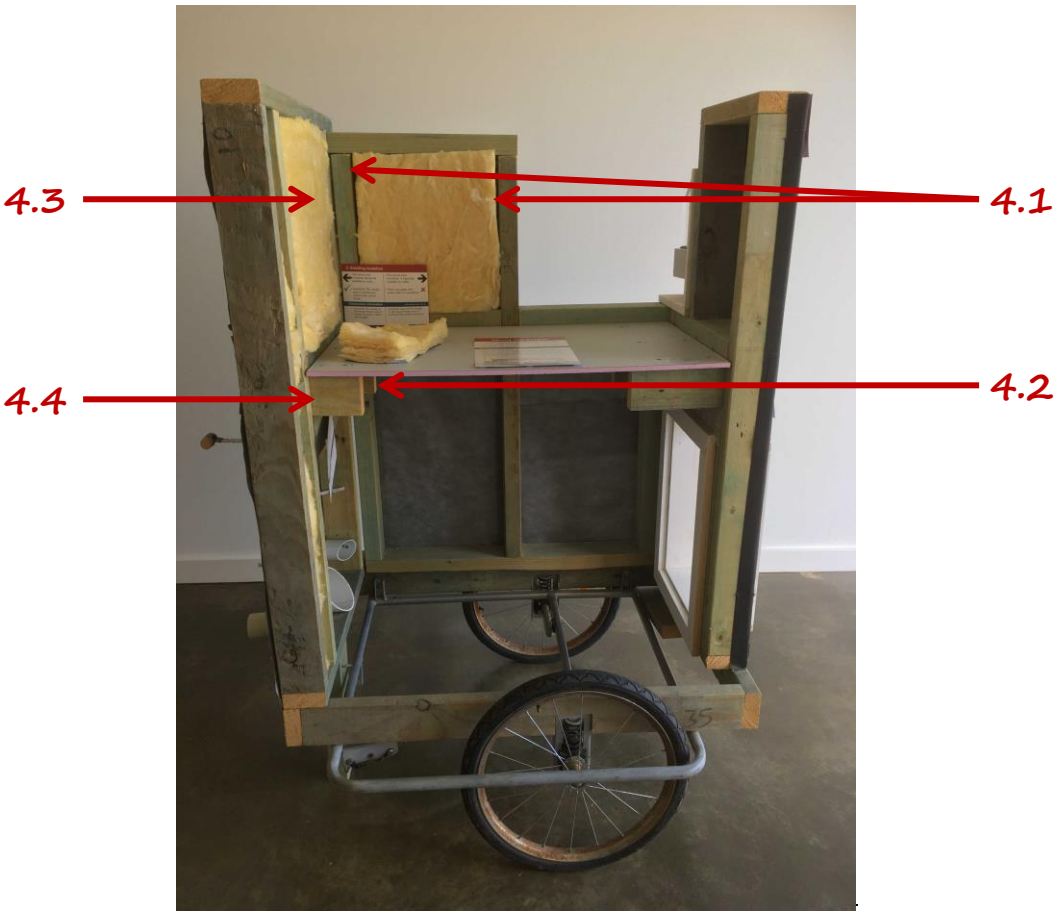
Left side of the trailer: shows how a window should be installed.

3.3. Foam insulation is squirted between the window frame and house frame to seal all gaps, and tape is fixed to the wall wrap and window frame to make sure all gaps are sealed and the window frame is completely water tight.

3.4. Insulation is put in from the outside before the wall wrap is installed, ensuring all areas that are only accessible from the outside are insulated.

3.5. This is a thermally broken aluminium window frame. There is a plastic break between all sections of aluminium to stop the cold/heat transferring from the outside frame to the inside frame.

4. Installing insulation



Right side of the trailer: shows how insulation is typically installed.

4.1. There are often gaps around the edges and it does not fit snugly in the house frames.

4.2. There is no insulation installed between upper level floor joists in two storey homes.

Left side of the trailer: shows how insulation should be installed.

4.3. There are no gaps around the edges of the insulation and the timber stud – it fits very snuggly in the house frames.

4.4. There is insulation fitted snuggly between the floor joists, which ensures there are no gaps and there is a continuous layer of insulation around the whole house.