

Article 4: Heat retention effect of aluminium wrapped glasshouse walls

One of the more unusual solutions seen during this study was a greenhouse that was wrapped with aluminium and bubble wrap. The aluminium was used to reflect the heat back into the greenhouse to minimise losses through the walls, while the bubble wrap layer between the glass and the aluminium was helping reduce heat loss through the glass.

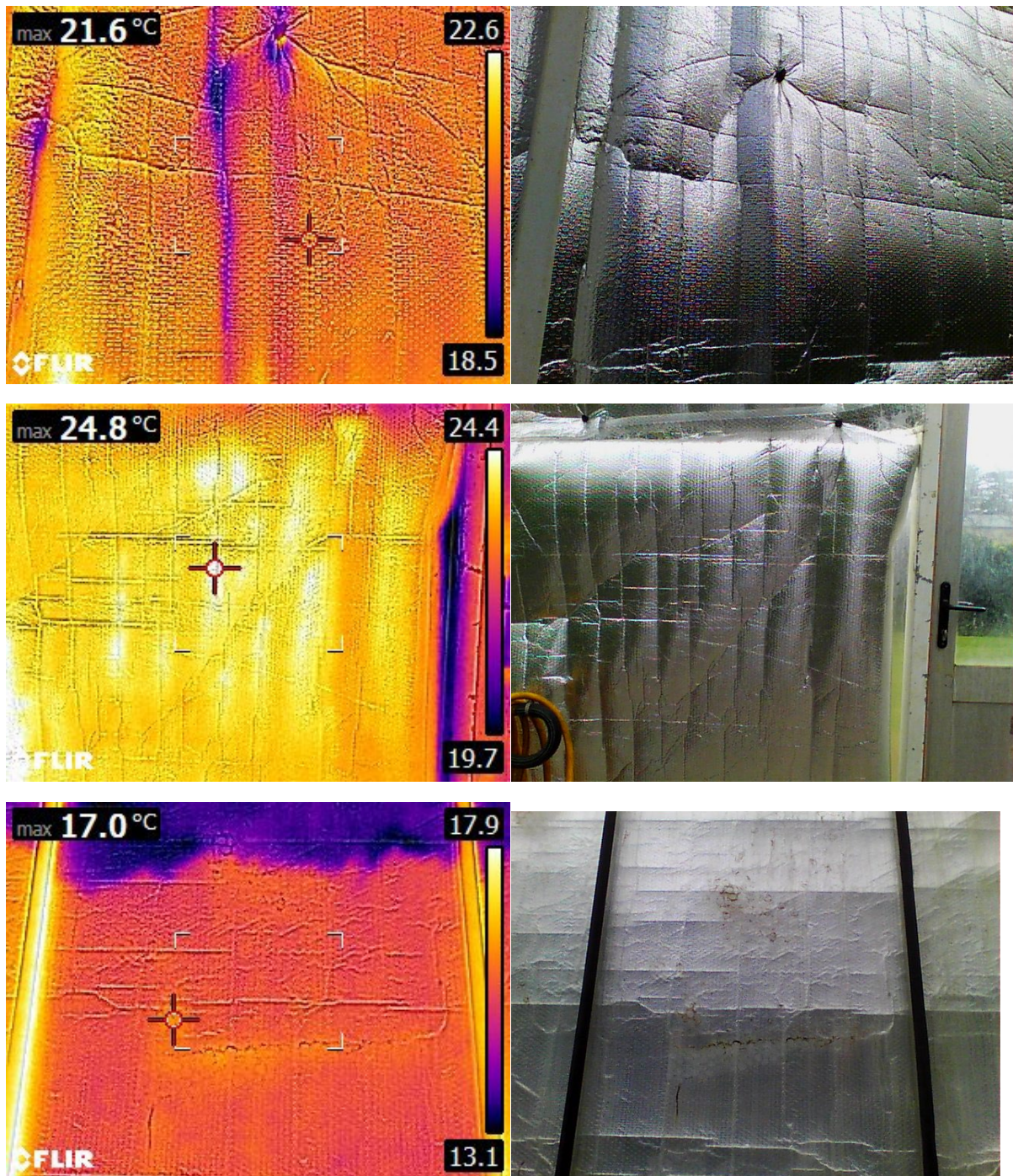


Figure 1: Pictures of aluminium wrapped glass house windows, both inside (top and middle photo) and outside (bottom photo)

From Figure 14, it is clear the surface of the aluminium is warmer than the bubble wrap, which only had surface temperatures of 19.6°C, as seen in Figure 12. In some areas of the greenhouse, the aluminium surface reached temperatures of 24.8°C, which was a full 5°C warmer than the bubble wrap.

The outdoor glass temperature, however, was warmer than the outdoor glass temperature of the bubble wrap as well. The outdoor temperature of the bubble wrapped glass was 16.5°C, compared to the 17°C of the aluminium wrapped walls.

What this indicates is that the aluminium foil wrap was conducting more heat from the greenhouse and was transferring more of this heat through the glass walls than the bubble wrap and plastic wrapped greenhouses.