Activity 08 - Tiny House

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How to start?
Provided Drawings
Roof area 17.3 m²
3000 W

wall area 45.4 m²
700 W

$\dot{Q}_{\text{conv}}$

$43 \, ^\circ \text{C}$

$21 \, ^\circ \text{C}$

R-value for walls (includes convection on inside and outside) 0.164 m²K/W

height 2.44 m
Pertinent Information

• Average indoor air temperature of 21 °C (69.8 °F) during the heat of summer when the outdoor air temperature is 43 °C (111.2 F).
• Radiation heat transfer through roof 3000 W.

• Average indoor air temperature of 21 °C (69.8 °F) during the cold of winter when the outdoor air temperature is 0 °C (32 °F).
• Radiation heat transfer through roof 700 W.

• Roof area 17.3 m², wall area 45.4 m², height 2.44 m, R-value for walls 0.164 m²K/W, k = 0.266 W/m*K, h = 10 W/m²*K Internal volume is the height times the roof area.