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polarwall
insulating concrete formwork

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A Quantity Surveyor who lives and works on the island of South Uist built this unusual project.

“The plot is in the most beautiful location imaginable with incredible views. However it is bleak and harsh, so an earth sheltered home had the attraction of giving high levels of thermal efficiency without impacting upon this incredible landscape.” said owner Martin



The Polarwall part of the build was straightforward and without incident, and the only problem encountered by the builders was the lack of a concrete pump on the island so all concrete placement was made by a small crane and a skip. A welded wire mesh was used to provide the reinforcement to the retaining walls.

The U-value of the walls is estimated at about 0.17w/m²K, which is fairly typical for a basic Polarwall basement structure in that type of ground.



The house was built with the 251mm Polarwall core to all walls. Walls were tanked to the outside and a drain installed around the slab perimeter. Curved glulam beams were used to shape the roof, which was waterproofed and covered in turf.

Key facts
Core size Retaining walls 251mm
Insulation Standard 0.27W/m²K



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