



SOUTH AFRICA/AFRICA
Hartbeespoort/ Sunplace Lodge
 realized 2014

Holms and Friends



DOMESTIC HOT WATER & UNDERFLOOR HEATING SYSTEM

Description:

Sunplace Lodge with 500m² of under-floor space heating (UFH), consists of 11 en-suite bedrooms, living room, dining room, kitchen and 3 office rooms & a venue hall. The system has a 2 500-litre buffer tank (with no pressure), which supplies the UFH manifold for both the ground floor (venue hall) and the upper floor (Lodge and office space). The buffer tank is loaded with a solar collector which has a true north orientation, but very high tilt angle (75°). The solar collector has an area of 36.75 m² and designed as a lowflow system with 15kg/m² per hour flow. The maximum temperature in this system is set at 80°C. The collector is managed by a AT UVR 61-3 differential solar controller which runs high efficiency WILO pumps. The water supplied to the UFH manifold is pre-mixed to max 45°C. This manifold has different zones in the total 500 m² floor area and managed by two separate temperature sensors. The individual zones can be balanced to avoid over-heating of certain rooms. The whole site is run by solar energy and backup energy needs to be generated during the best possible sunshine hours. The 1 000 litre tank is charged with 4,34 m² high flow SUNDA vacuum tube collectors (4 x Seido2-8 collectors), serving as balcony railings for the four north facing bedrooms. The domestic water heating system has a 7,2kWth backup heat pump which can manage temperatures up to 65°C (at a lower CoP of 2,8). The water is supplied to the consumer through a fresh water station by LME Austria(LME-WW26) and controlled by a controller from Technische Alternative. This supplies five (5) bathrooms, two (2) guest bathrooms and a kitchen.

Geographical position:

Lines of latitude: -25.763198 S

Lines of longitude: 27.935208 E



KEY DATA

COLLECTOR AREA

41 m²



SOLAR PEAK PERFORMANCE
28,7 kW_{th}



ENERGY SAVINGS

51 120 kWh



STORAGE CAPACITY

3 500 liters



For more information go to:
www.holmsandfriends.co.za