

Space Heating – Design and Results

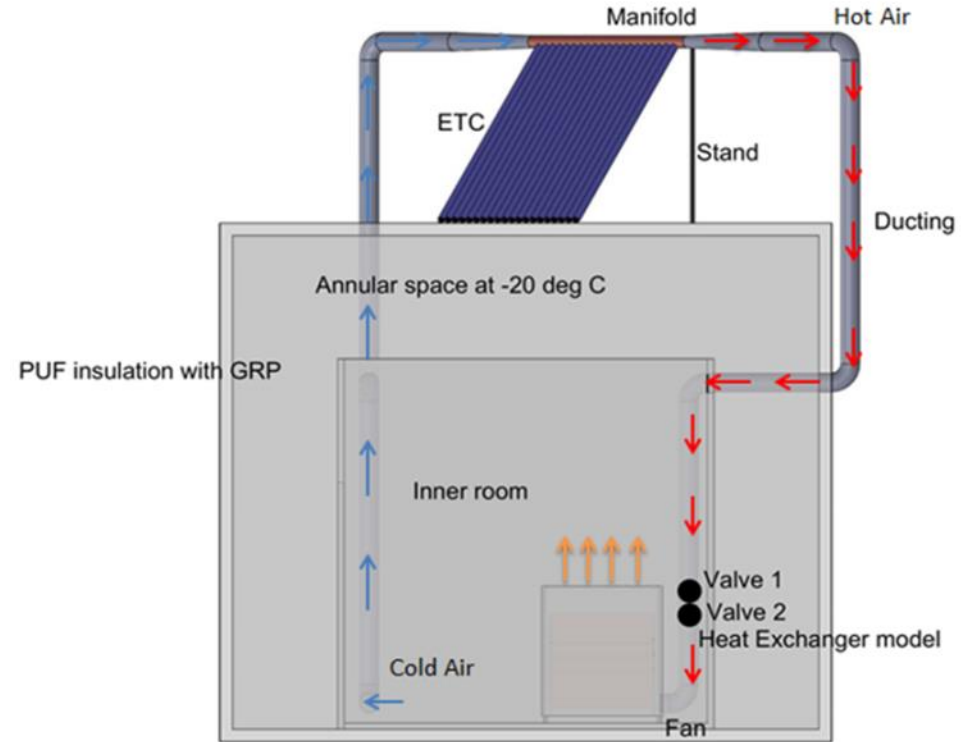
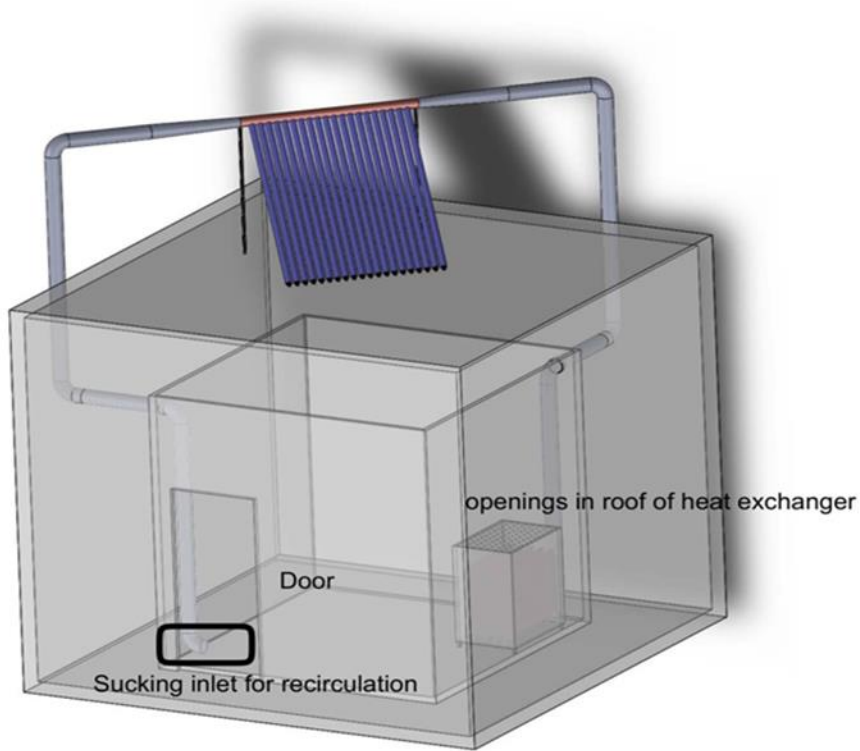
PLUS[®]

TECHNOLOGY FOR
A BETTER WORLD

save[®]

Advanced Phase Change Materials

Working Principle



Concept

Test Bed



Front view



Back view

Heat Exchanger – set up



Holes to let hot air escape from the heat exchanger

Damper to circulate air inside the room during off – sunshine Hours (discharging cycle)

Heat Exchanger – Industrial Prototype



Room heating – set up



Heat exchanger set up in the room

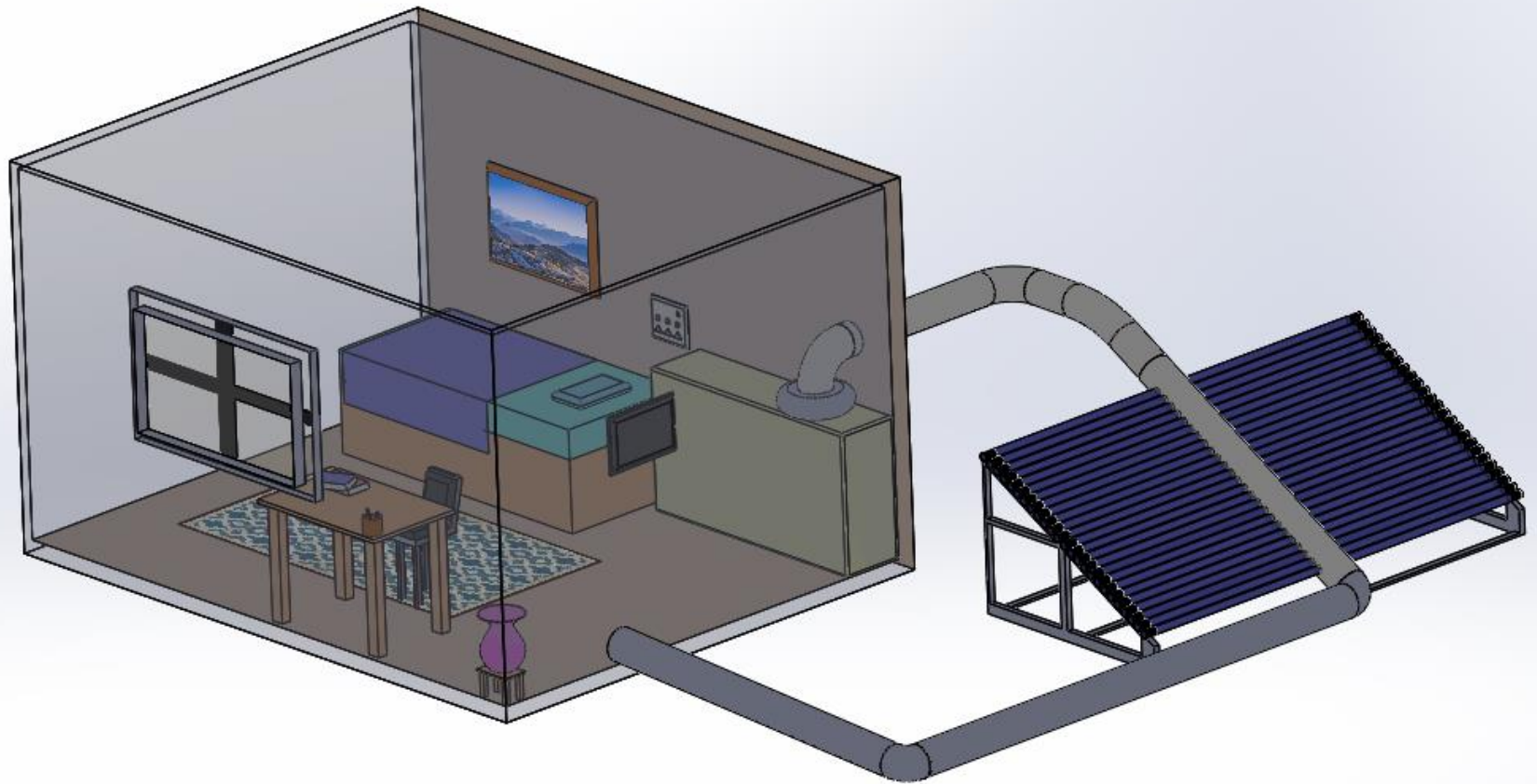


Exit pipe to solar collector for air recirculation

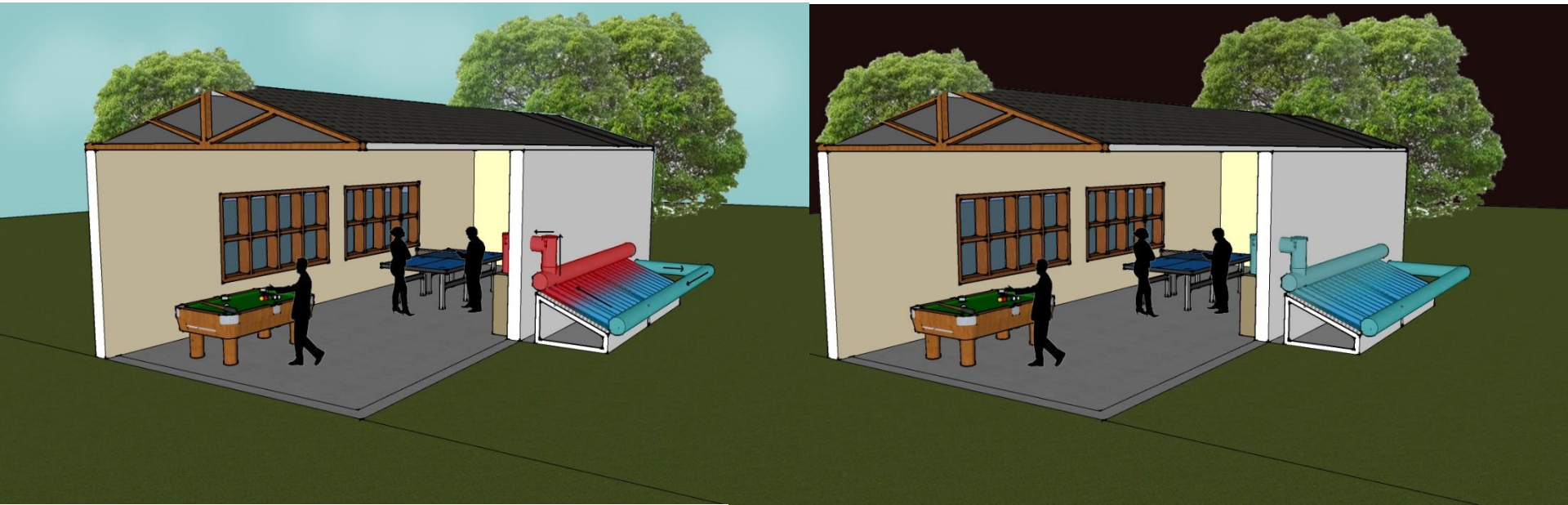
ETC Collector



Proposed conceptual images



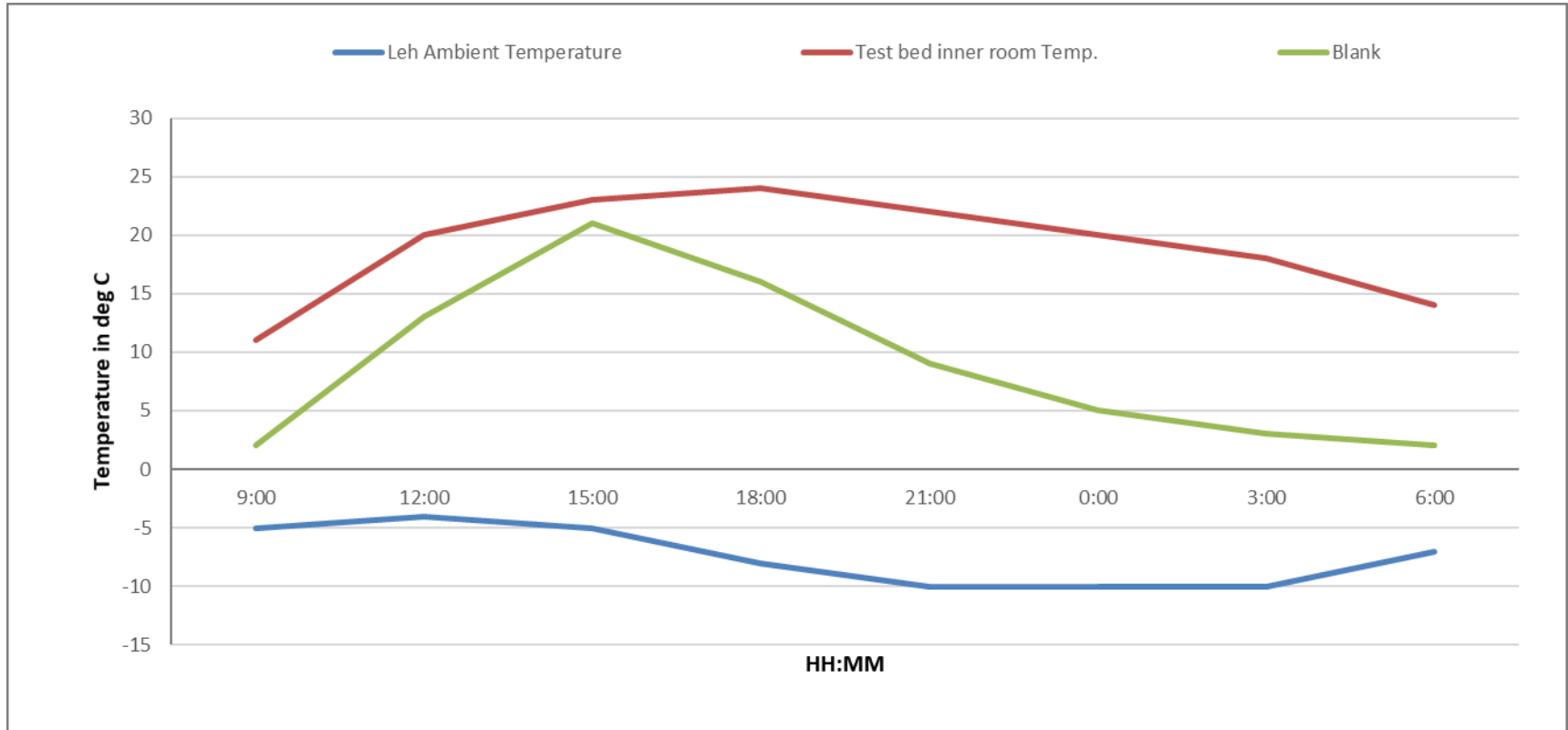
Proposed conceptual images



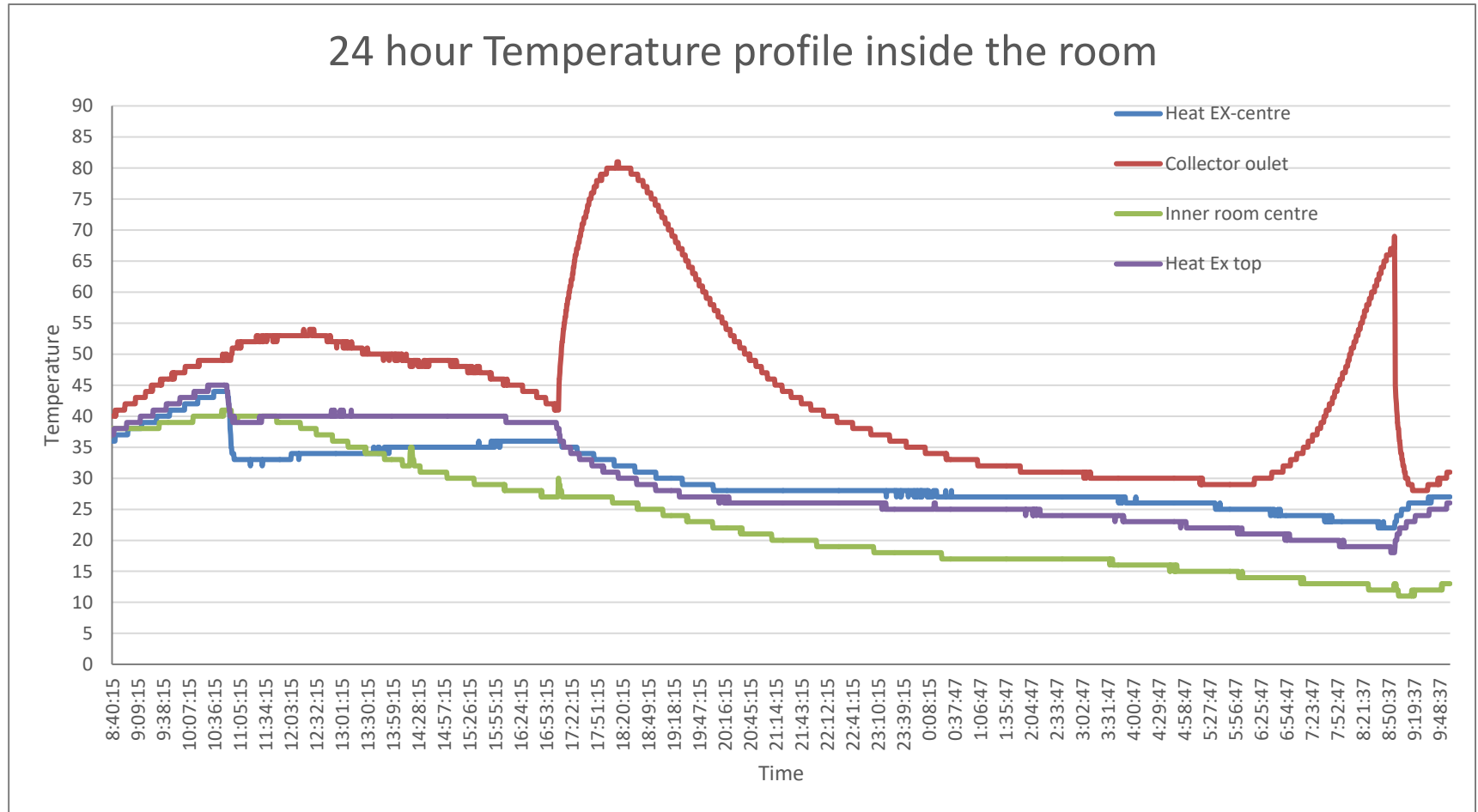
Proposed conceptual images



Temperature profile with & without PCM



Temperature inside the room when ambient is -20°C



Parameters defining the system

S.No.	Parameters	Specifications
1.	Amount of PCM	95 kg
2.	Dimensions of PCM encapsulation	570 x 285 x 15mm
3.	Mass of PCM in each panel	2.3 kg
4.	Total Number of panels required for back up	41 nos
5.	Diameter of duct	6 inch
6.	Fan wattage	60 W
7.	Air flow velocity	3 m/s
8.	Room Size	3m x 3m x 3m
9.	Target Temperature inside the room	15-20oC

