



Bangladesh University of Engineering and Technology

Course No.	ME415
Course Teacher	Dr. Arif Hasan Mamun
Assignment Topic	Cooling load calculation
Date of Submission	23.07.2022

Submitted by,

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Design:

15th April 2022, 5.00 pm,
Roof Height: 3 m,
4th Floor,
Unconditioned space beneath the floor (3rd Floor).

Home Address:

43/R-17, Indira Road, Panthapath, Dhaka.

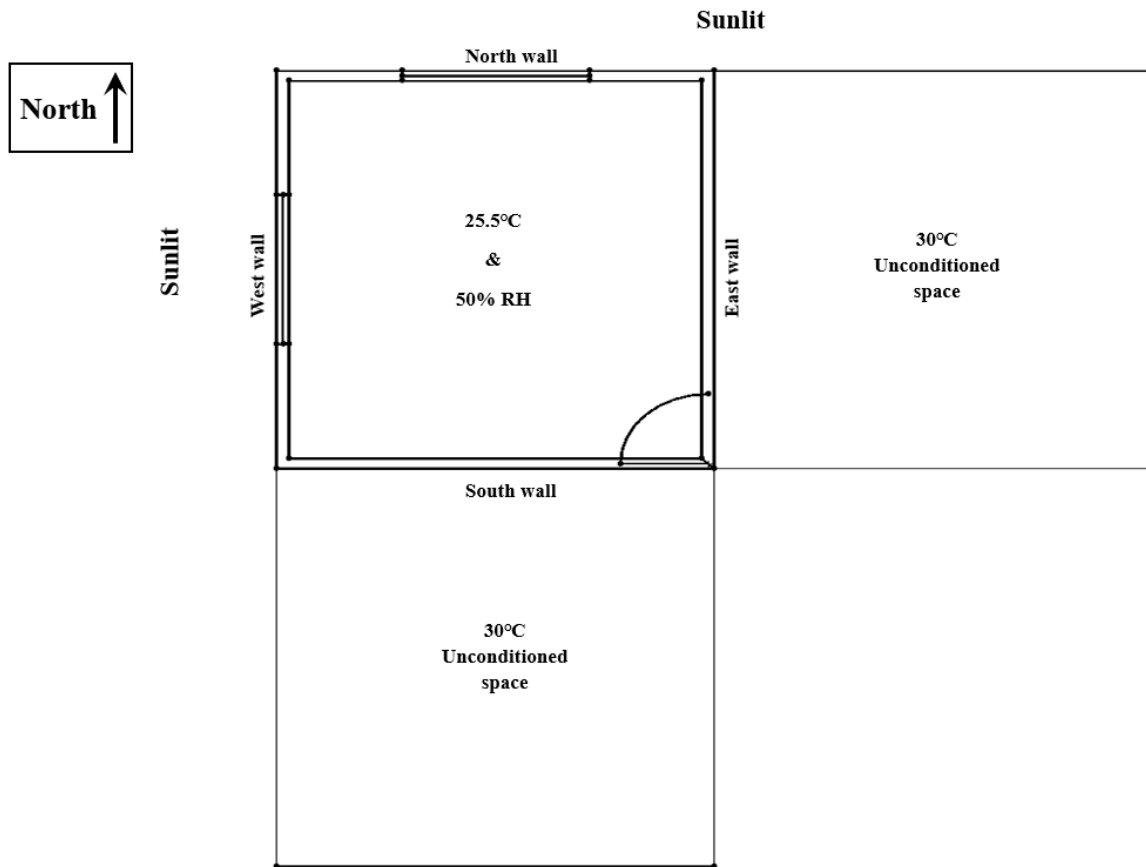


Fig. 01: Detailed design of the room to calculate cooling load.

Dimensions:

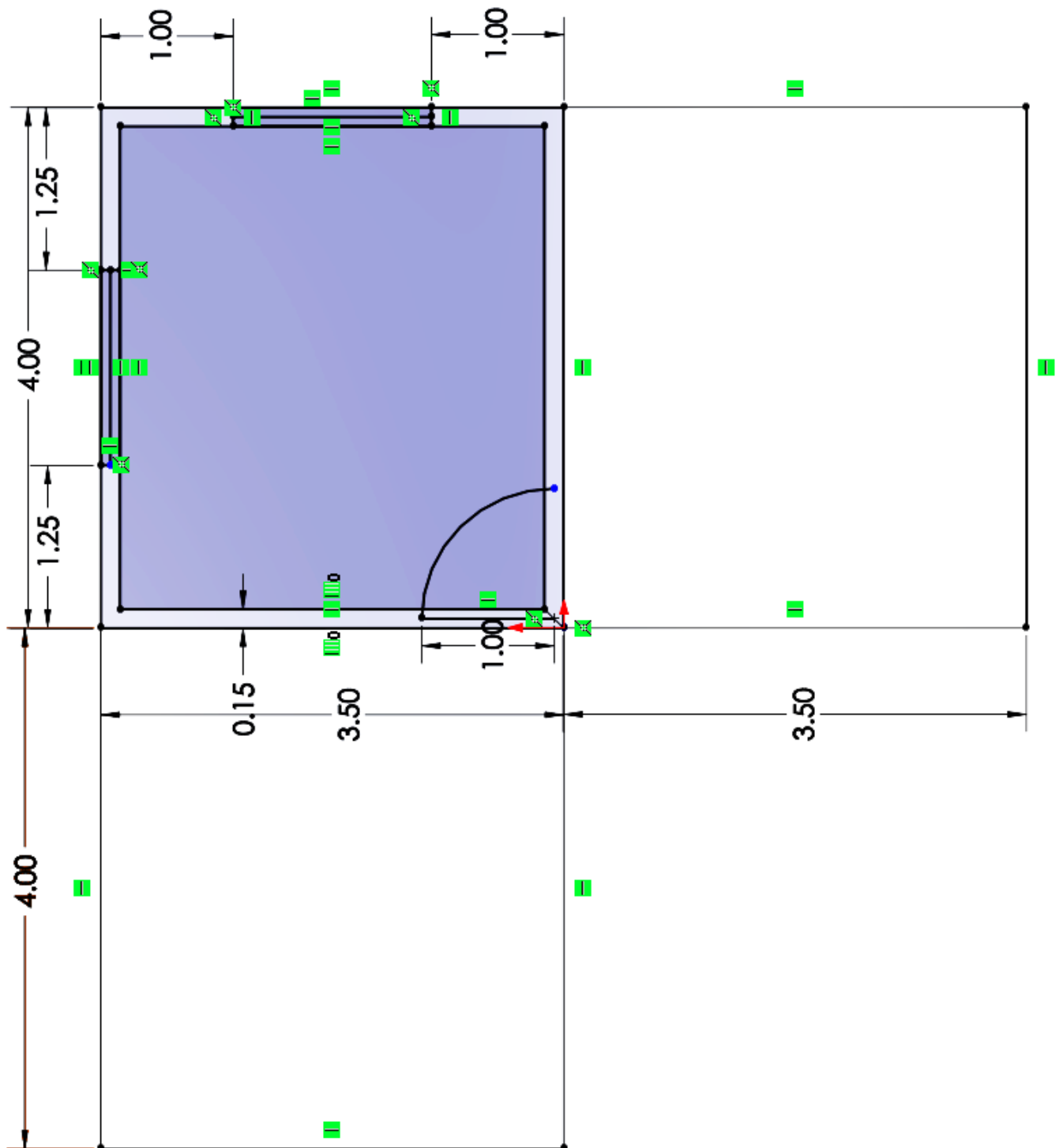


Fig. 02: Solidworks sketch and dimensions.

Descriptions:

- **Partition walls (East and South):** 120 mm brick with 25 mm plaster on both sides.
- **North and West walls:** Type D, 120 mm brick with 25 mm plaster on both sides, Sunlit, White color.
- **Roof:** Type 6, 150 mm l.w. concrete without suspended ceiling.
- **Windows:** North and West side, **2.25 m²** area,
U = 2.86 W/m²K, Light construction, Thickness = **10 mm**.
- **Floor:** Unconditioned space beneath the floor, Type 4, 25 mm insulation.
- Air exchange rate, $\frac{1.0}{h} = \frac{4 \cdot 3.5 \cdot 3m^3}{3600s} = 0.012m^3/s$.
- Light Power = 15W, 12 hours.
- 3 occupants, all day night, a TV operates for 2 hours a day.
- Door in South wall, 2m x 1m, 30 mm thick, hard wood (Mahogany).

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