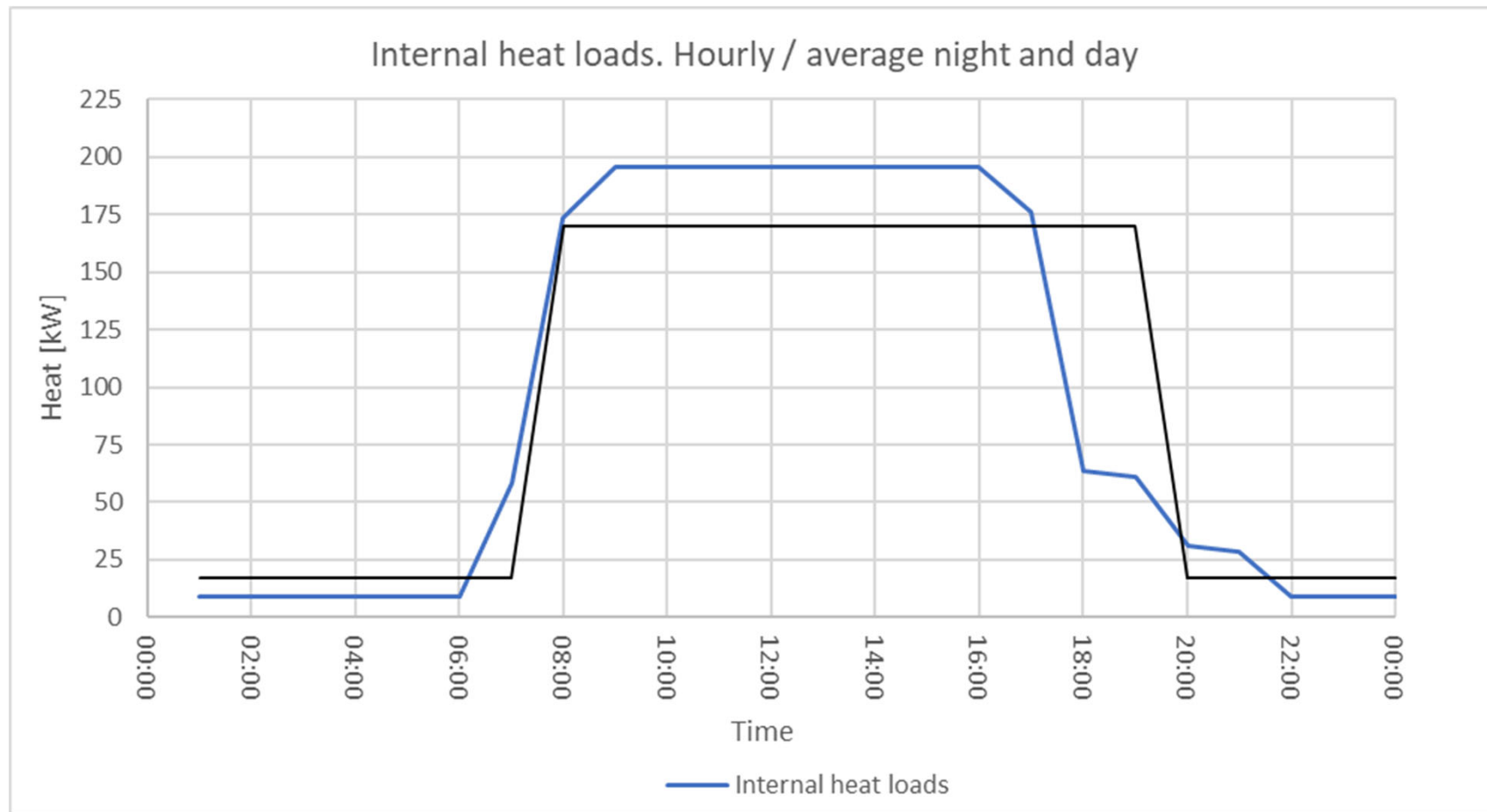
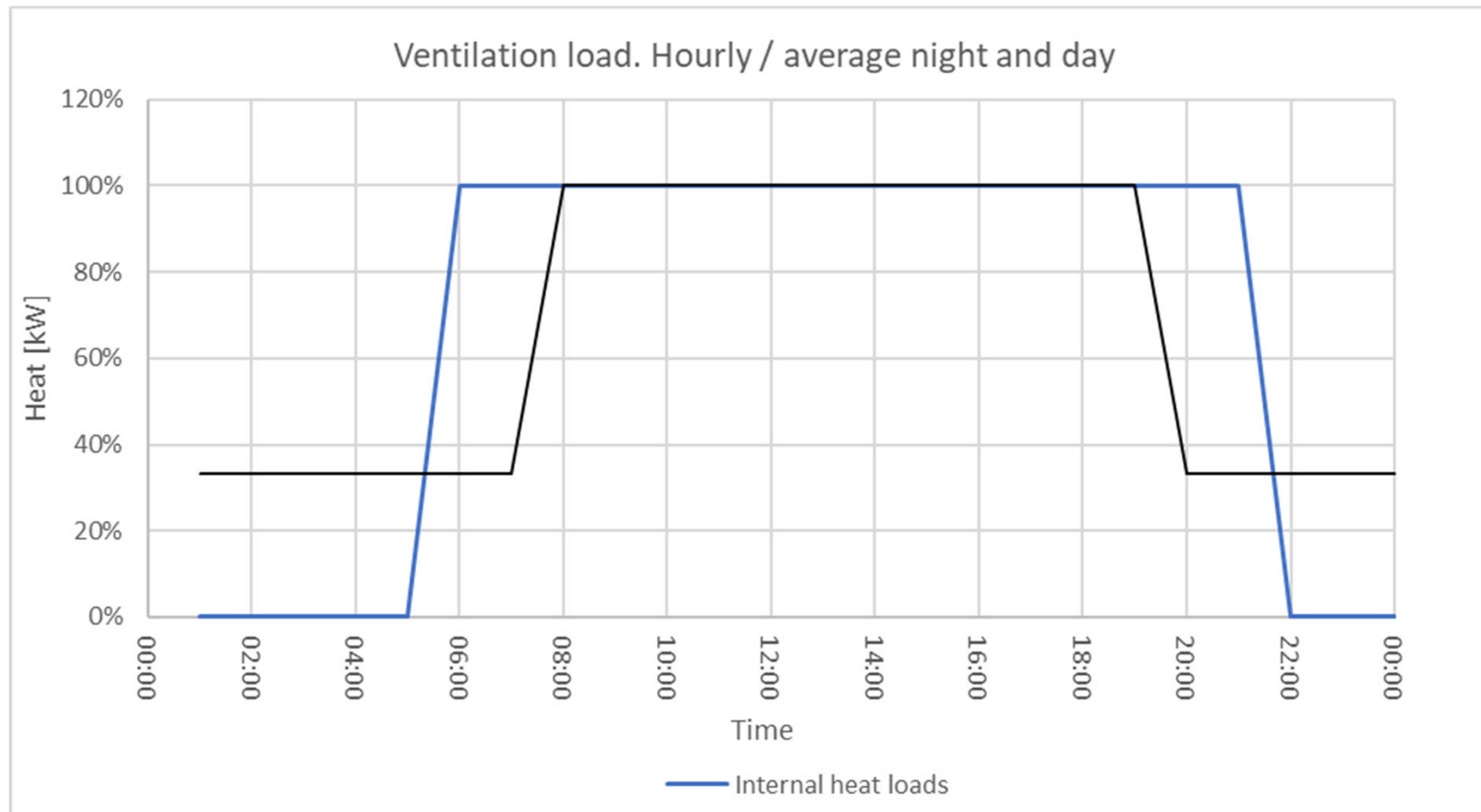


Background data. Internal heat loads



Background data. Ventilation intensity



Converting heat demand to temperature demand.

$$\dot{Q}_{RAD} = K1 \times \Delta T_{M,RAD}^{1,3} \Rightarrow K1 = \frac{\dot{Q}_{RAD,DES}}{\Delta T_{M,RAD,DES}^{1,3}} = \frac{\dot{Q}_{RAD,ACT}}{\Delta T_{M,RAD,ACT}^{1,3}} \Rightarrow$$

$$\Delta T_{M,RAD,ACT} = \left(\frac{\dot{Q}_{RAD,ACT}}{\dot{Q}_{RAD,DES}} \right)^{\frac{1}{1,3}} \times \Delta T_{M,RAD,DES}; \Delta T_{M,RAD} = \frac{T_{SUPPLY} + T_{RETURN}}{2} - T_{ROOM}$$

$$\dot{Q}_{COIL} = K2 \times \Delta T_{M,COIL} \Rightarrow K2 = \frac{\dot{Q}_{COIL,DES}}{\Delta T_{M,COIL,DES}} = \frac{\dot{Q}_{COIL,ACT}}{\Delta T_{M,COIL,ACT}} \Rightarrow$$

$$\Delta T_{M,COIL,ACT} = \left(\frac{\dot{Q}_{COIL,ACT}}{\dot{Q}_{COIL,DES}} \right) \times \Delta T_{M,COIL,DES};$$

$$\Delta T_{M,COIL} = \frac{T_{SUPPLY,WATER} + T_{RETURN,WATER}}{2} - \frac{T_{AIR,ON} + T_{AIR,OFF}}{2}$$