

$$M_R \frac{dT_R}{dt} = \dot{Q}_W(t) + \dot{Q}_R + \dot{Q}_D(t) - \dot{Q}_F(t) - \dot{Q}_{inf/ven}(t) \quad (1)$$

where:

- $\dot{Q}_W(t)$: heat flux through the walls
- \dot{Q}_R : heat flux through the roof
- $\dot{Q}_D(t)$: heat flux through the door
- $\dot{Q}_{inf/ven}(t)$: heat flux due to air flow caused by infiltration/ventilation