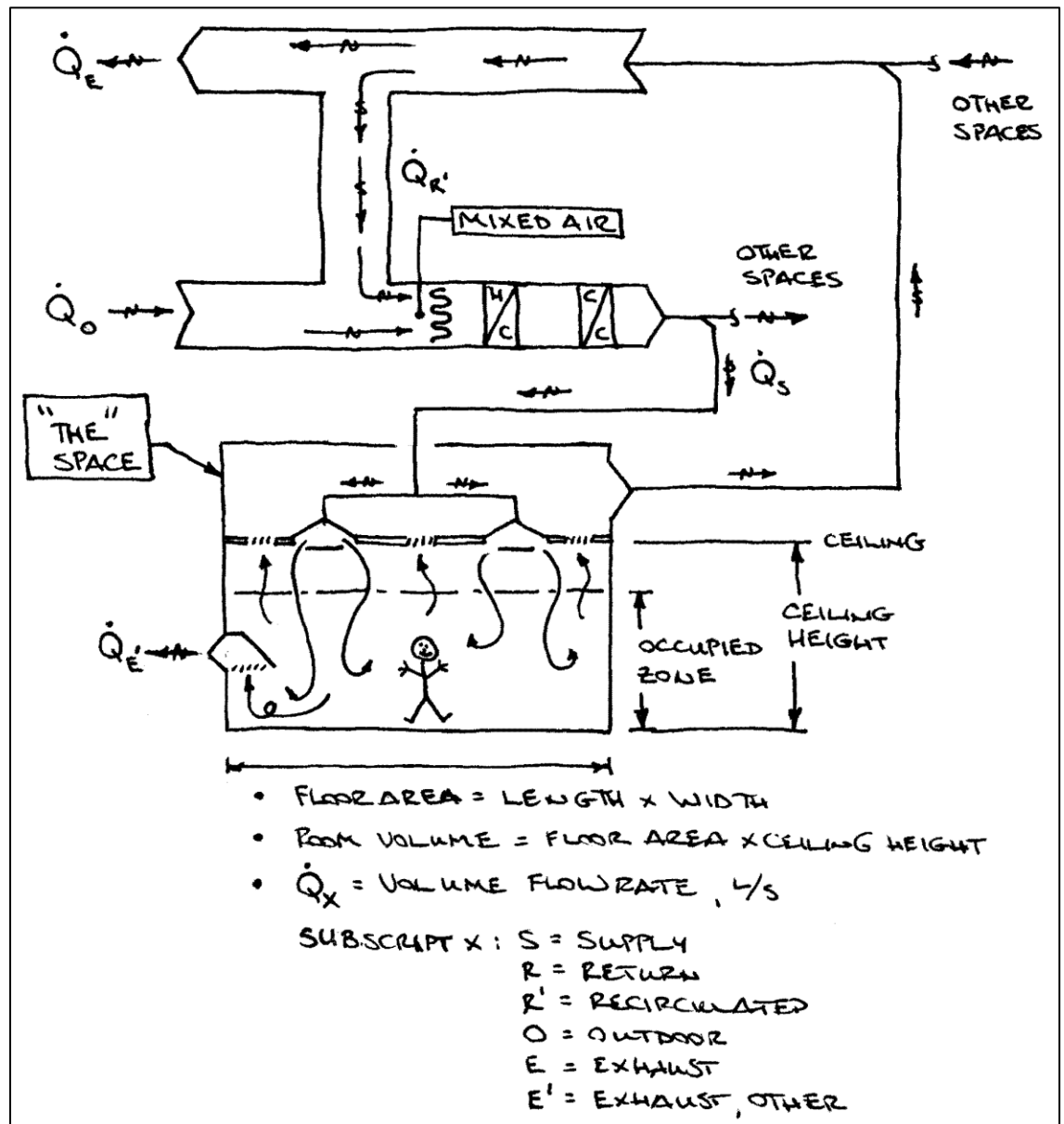
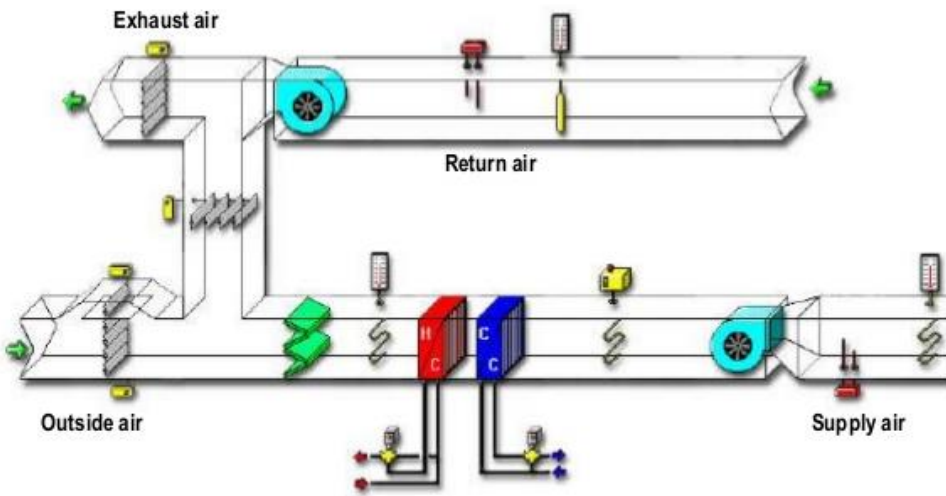


me162 – Building Systems

Air Flowrates: Supply, Return, Outdoor, Exhaust, Recirculated, Mixed



HOW TO FIND ...

■ $\dot{Q}_S = ?$

$$\dot{Q}_S = \frac{\text{ROOM VOLUME} \times \text{AIR CHANGES/HR}}{3.6}$$

$$= \dot{Q}_{SEW} \text{ (IN TEXT)}$$

• UNITS: $\text{L/S} = \frac{\text{m}^3 \times \text{'/HR}}{(3600 \frac{\text{S}}{\text{HR}} / 1000 \frac{\text{L}}{\text{m}^3})}$

• AIR CHANGES/HR = ACH

→ FROM: General Design Criteria

■ $\dot{Q}_O = ?$

(Data From: ASHRAE 62.1)

$$\dot{Q}_O = (R_p \times N_o \text{ PEOPLE}) + (R_a \times \text{FLOOR AREA})$$

$$= \dot{Q}_{O2} \text{ (IN TEXT), L/S}$$

• $N_o \text{ PEOPLE} = \text{COUNTED ESTIMATE}$

OR

• $N_o \text{ PEOPLE} = \frac{\text{OCCUPANT DENSITY} \times \text{FLOOR AREA}}{100}$

■ $\dot{Q}_R = \dot{Q}_S - \dot{Q}_{E'}$

■ $\dot{Q}_E = \dot{Q}_O - \dot{Q}_{E'}$

■ $\dot{Q}_{R'} = \dot{Q}_R - \dot{Q}_E \text{ (EXIT VIEW)}$

$$= \dot{Q}_S - \dot{Q}_O \text{ (ENTRY VIEW)}$$