

me162 – Building Systems

Week 1 – Tutorial

- Looked at and consider the Classroom Space we are in. Note:
 - Supply Diffusers,
 - Return Grilles,
 - Perimeter Zone and the Radiant Heat in that zone.
- Took a tour of the Restaurant Example (Handout).
 - Walked through just to see what was there.
 - Reviewed the style and mood of each space or ZONE – Dining, bathrooms, kitchen, office, etc.
 - Defined INTERIOR ZONE vs PERIMETER ZONES.
 - PERIMETER ZONE: the region of a space within 2 m of an exterior wall or window.
 - PERIMETER zones typically need both heating and cooling throughout the year.
 - INTERIOR zones typically only need cooling throughout the year in large footprint commercial or institutional buildings.
- Review: General Design Criteria (SI) – Handout, from the ASHRAE Application Handbook SI.
- Review: ASHRAE 62.1: Minimum Ventilation Rates in Breathing Zone
- Review the ‘Air Flowrates: Supply, Return, Outdoor, Exhaust, Recirculated, Mixed’ handout (also online) ... Note:
 - How “THE” Space is divided up vertically
 - The variable names for each type of air flow
 - The equations and text references provided
 - The symbols used when drawing or reading an HVAC reflected ceiling plan
- For this classroom:
 - Determine the Supply Air rate required
 - Determine the Outdoor Air rate required
- Start looking at dividing the Restaurant into reasonable ventilation zones. Note:
 - Functional Zones (areas with different functions).
 - Interior Zones and Perimeter zones.
- Review in detail the Reflected Ceiling Plan of the Restaurant. Note:
 - Supply Diffusers
 - Return Grilles
 - Exhaust Grilles