# IPRO 335 - Capstone Design

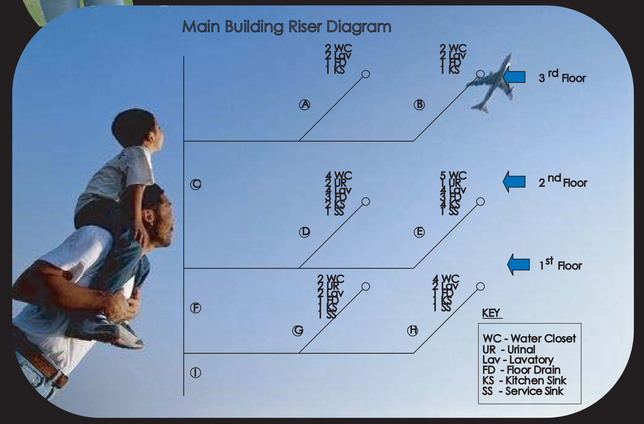
# "Airport of the Future"

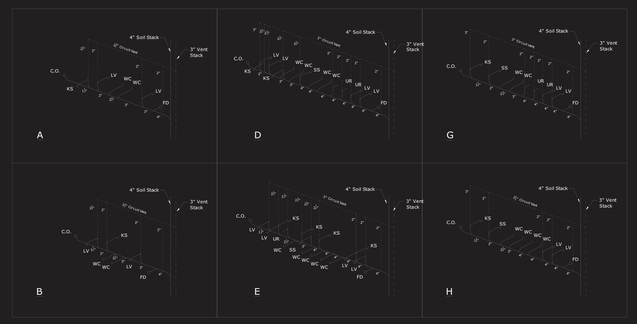
## Plumbing Design

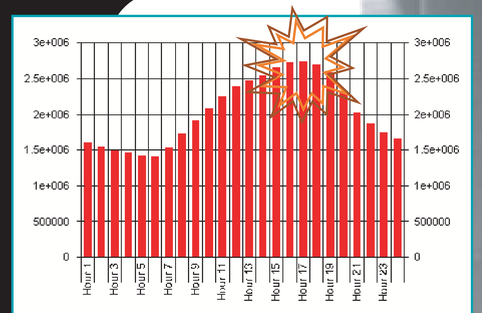
**Janet Martinez - Architectural Engineer**

Total drainage fixture units for the building = 236 dfu

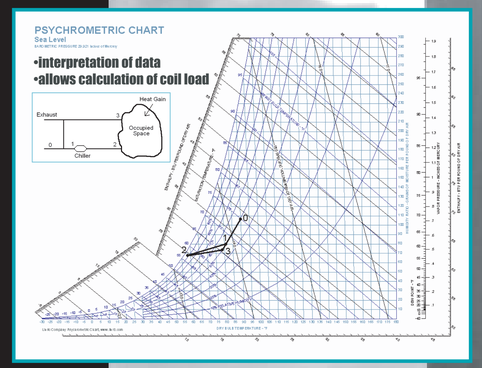
- Diameter of the pipe connected to the city main = 5"
- Slope of the piping is 1/8" per foot
- Discharge velocity is from 1.93 - 2.23 ft/sec
- Riser diagrams




Graph Of Total Cooling Coil Load (Btu/hr) Vs Hours




## Cooling Loads

**Dan L. Rehberg - Architectural Engineer**

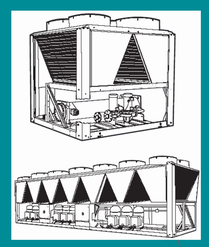


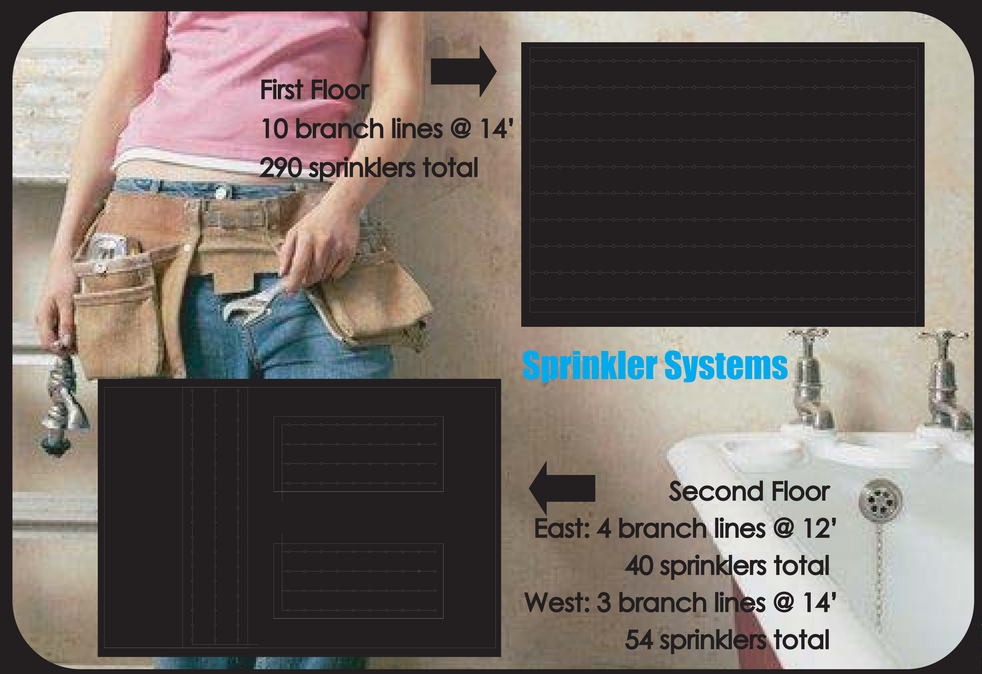



Cooling Load:
3,808,856 Btu/hr
317 tons

Chiller:
Carrier Aquasnap 30RB060 x3
www.carrier.com

ASHRAE 90.1:
exceeds code by 1%

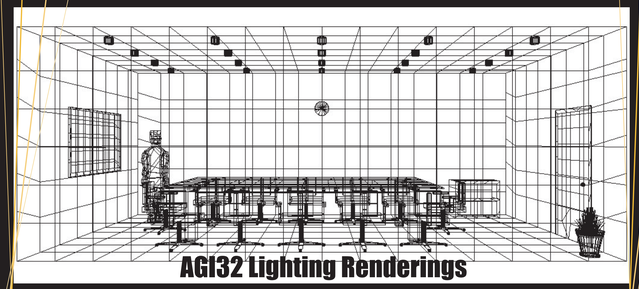





## Sprinkler Systems

A special thanks to ... our very own Professor Jamshid Mohammadi (Advisor), Professor Ali Emadi (Calculations), Professor Joseph Pinnello (Calculations), Professor Ganesh Raman (Acoustics), Professor Ahmed Megri (Component Design), & Professor Ralph Muehleisen (Acoustics).

**AGI32 Lighting Renderings**



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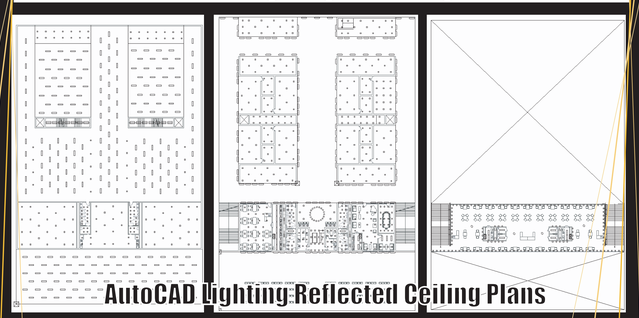

**AutoCAD Lighting Reflected Ceiling Plans**

**Mihdi Vahedi**
**Electrical Engineering**

## Lighting Design

- After adjusting Load Correction Factor for losses in system
- Total AC connected Wattage (maximum) = 350 kW approx.
- Average Watt Hours per Day = 6000 kW Hrs. / Day approx.
- Approximate cost @ $0.08/kW Hrs. = $14,400.00 per month approx.