



POLITECNICO DI MILANO



Centralized HVAC systems –System Description

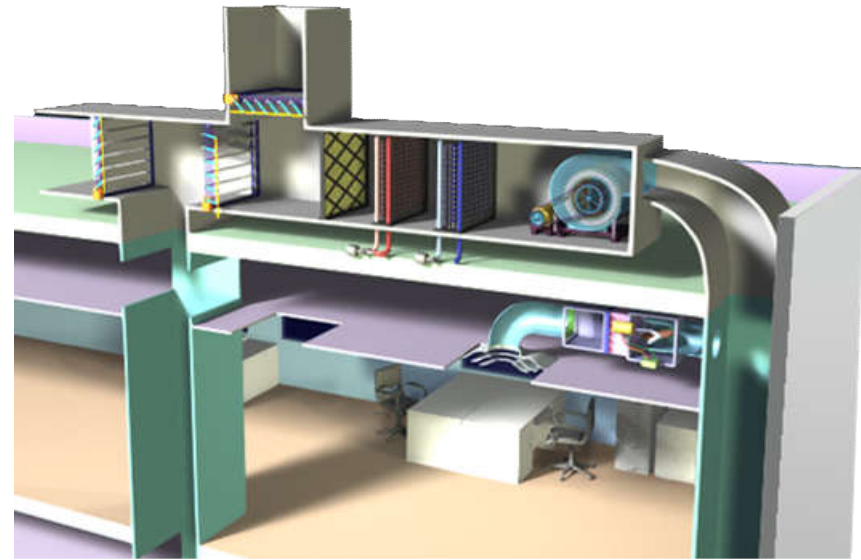
Ref :Ashrae Handbook of fundamentals

Energy and Environmental Technologies for Building Systems
Piacenza Campus

B. Najafi



Central HVAC units



Mechanical Room: Boilers, chillers, pumps, heat exchangers...

Room Controls: thermostats and Variable Air Volume (VAV) boxes

Air Handling Units (AHUs): heat, cool, humidify, dehumidify, ventilate, filter and distribute the air.



What do we have in the mechanical room or on the roof

Boiler

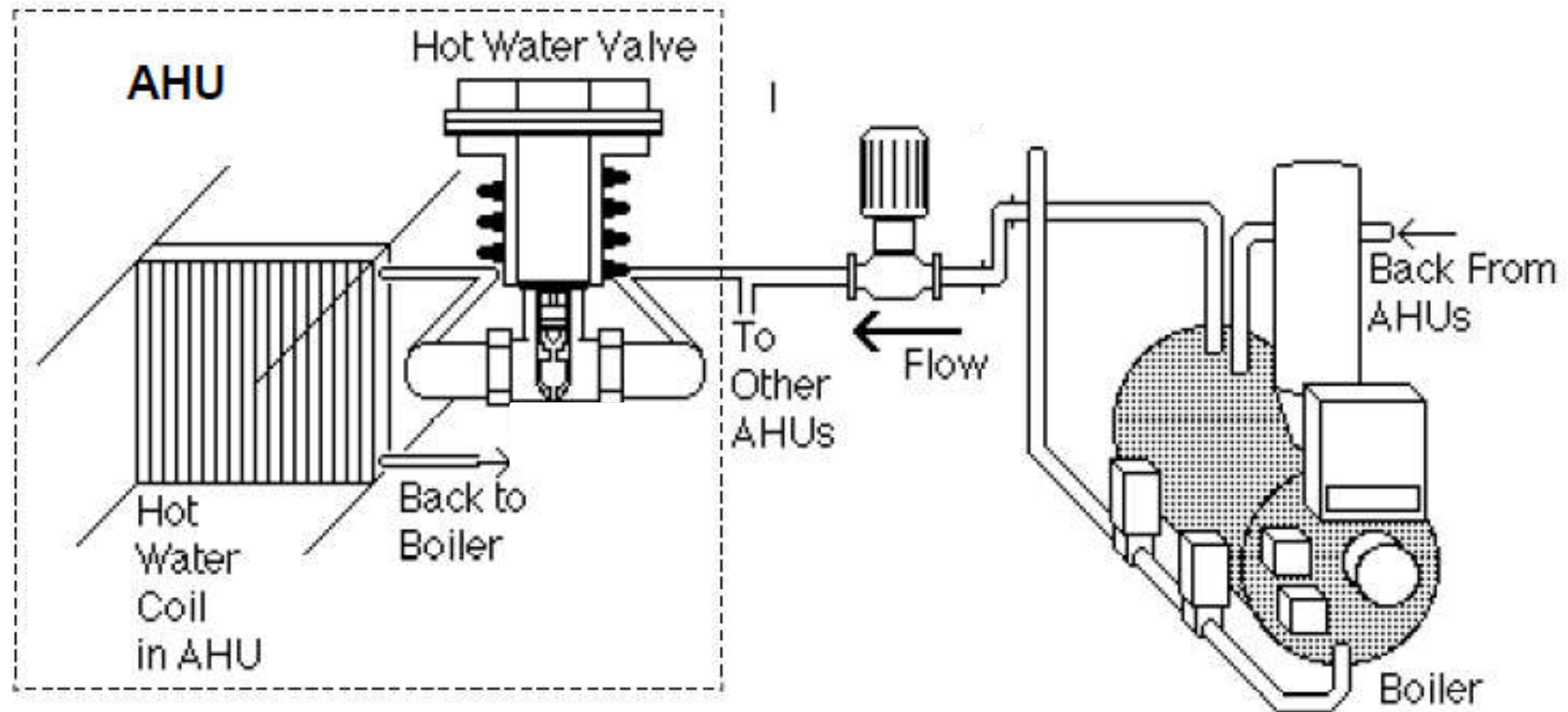


Chiller



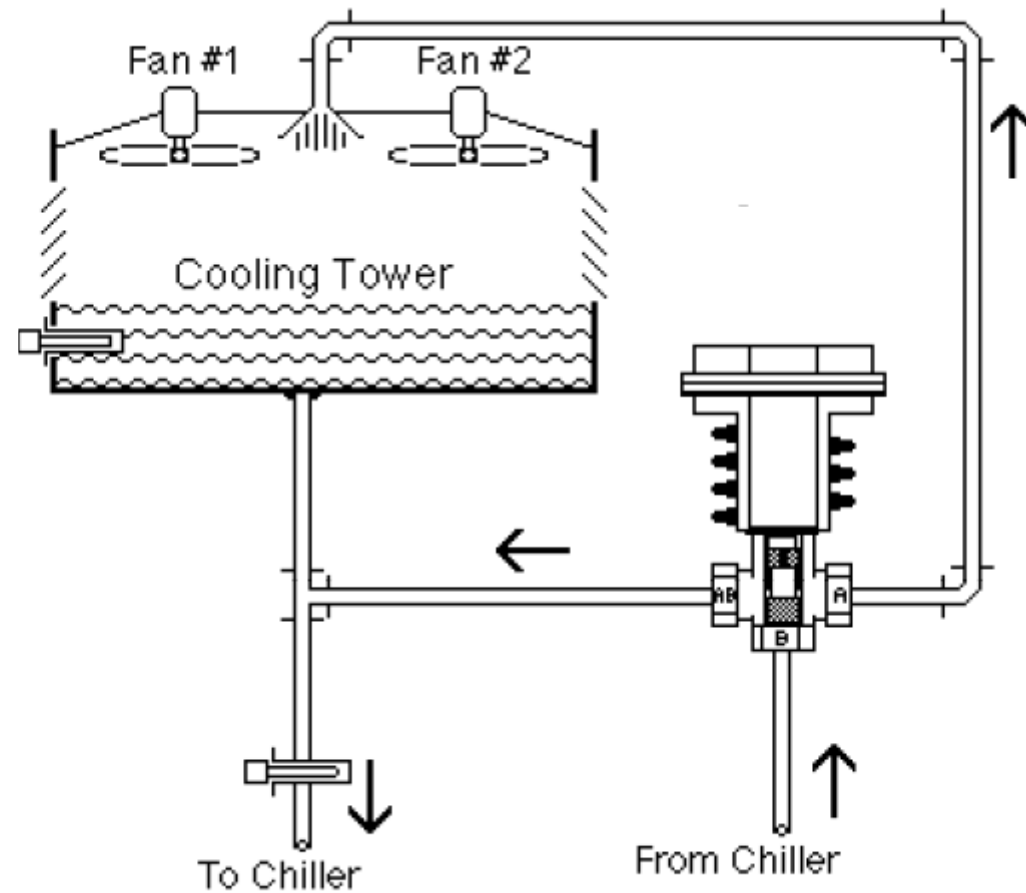


Heating System





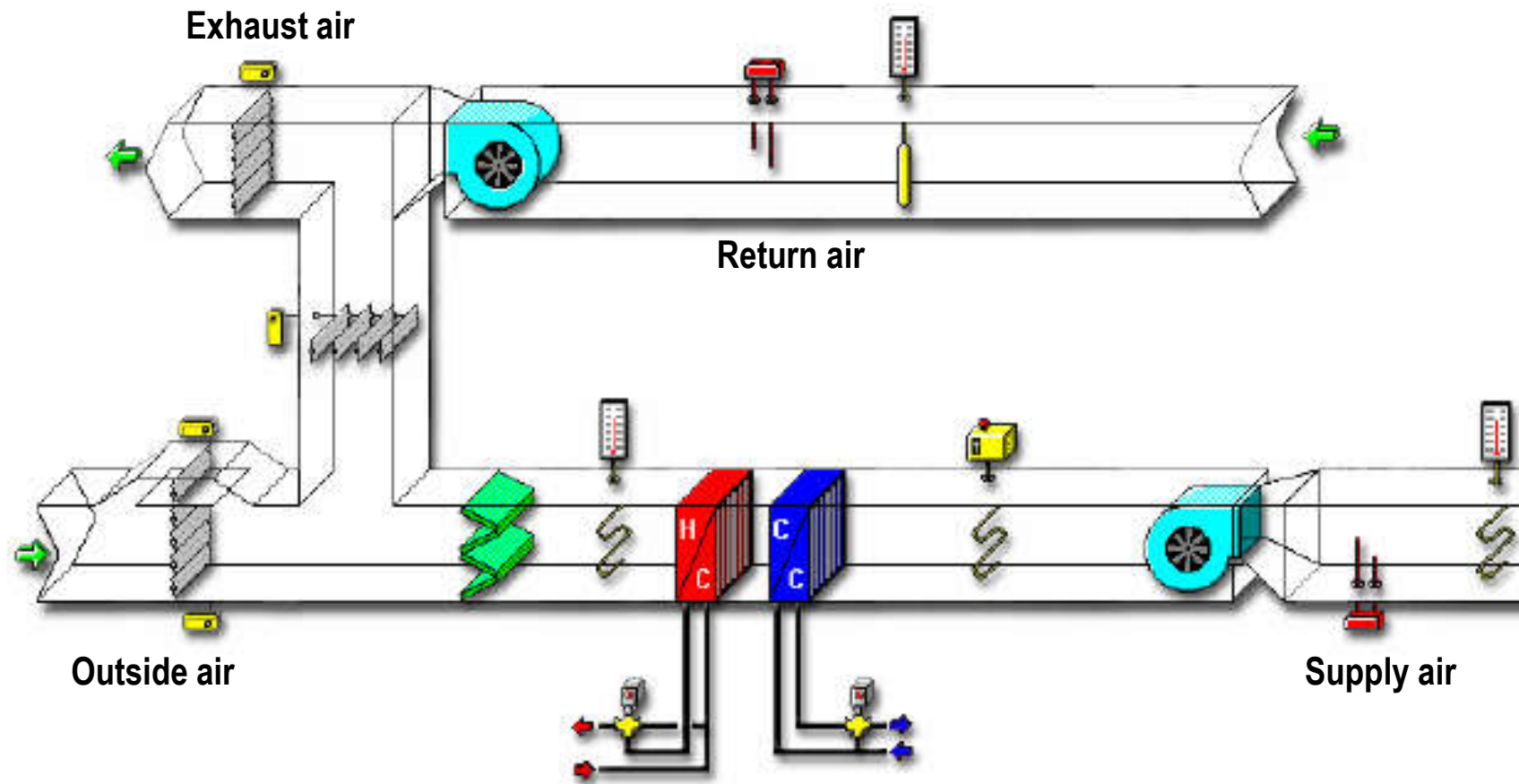
Cooling tower





AHU – Air Handling Unit

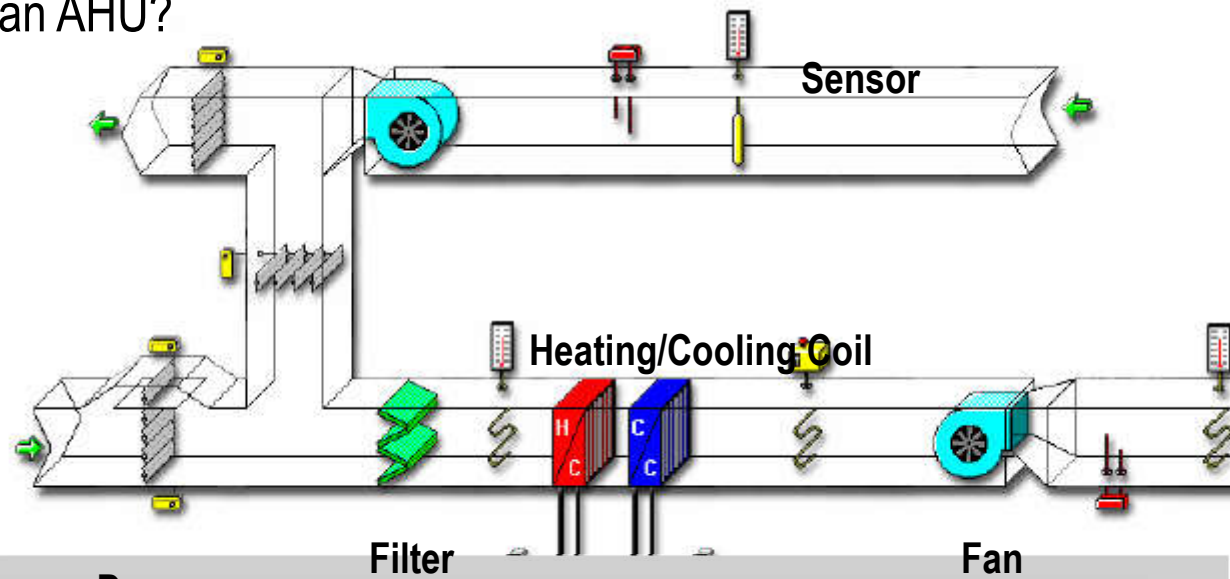
Where does air come from and go to?





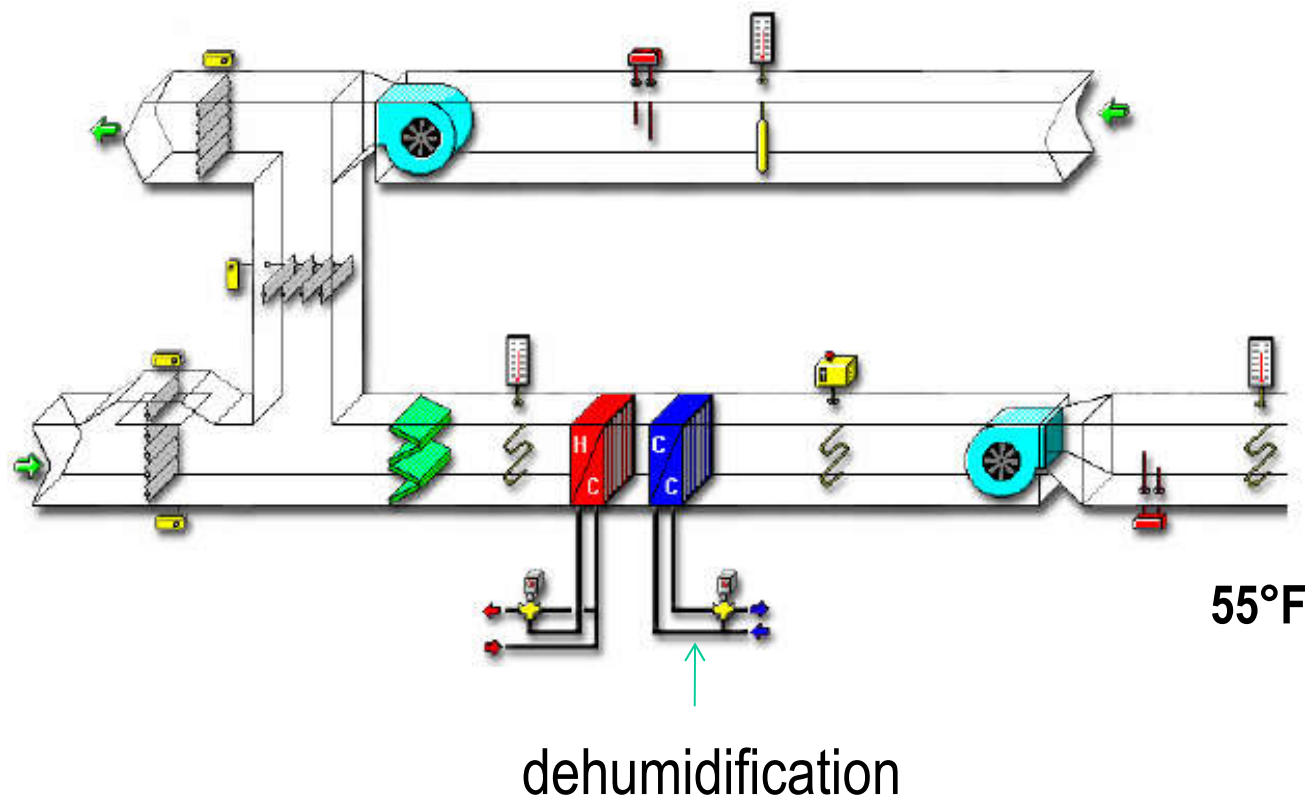
AHU

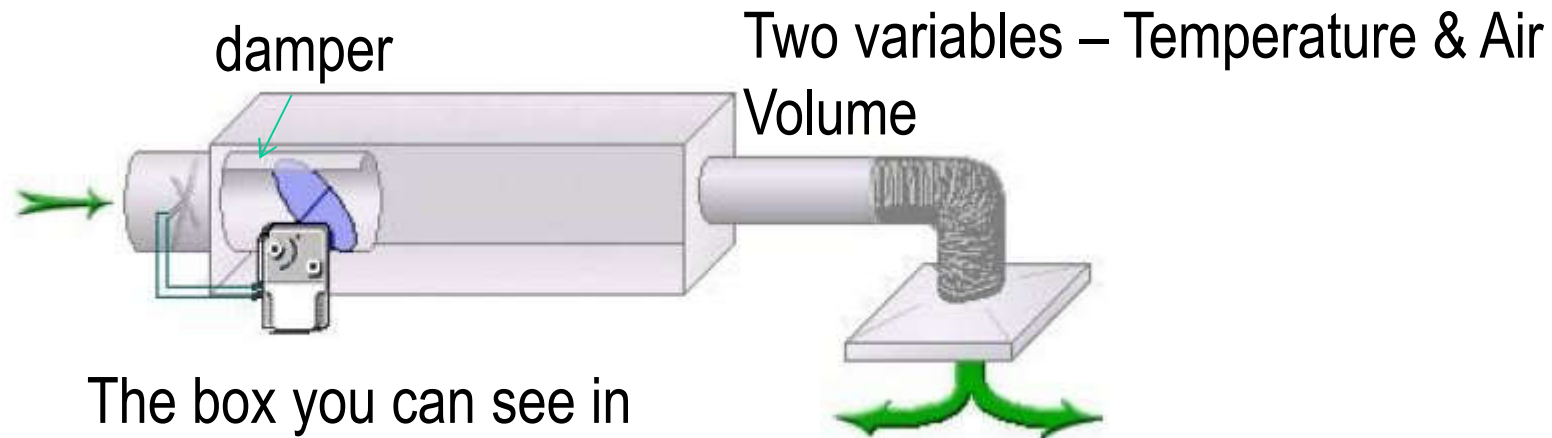
What's in an AHU?





AHU – Heating and Cooling





The box you can see in the hallway.

IF temperature too high

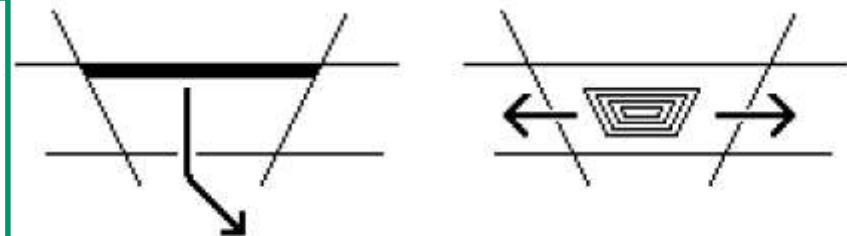
First reduce reheat till fully closed

Then increase air volume

IF temperature too low

First reduce air volume till minimum

Then start reheat



Air Diffusers