

### Práctica 3

Begin to introduce your HVAC facilities into your Building:

#### **Proposal for checks and studies:**

- Check types of HVAC-facilities:
  - IdealLoadsAirSystem (basic study, for your building needs and HVAC possibilities)
  - PTAC
  - PTHP
  - VRF
  - FANCOILS (4-pipes, 2 pipes)
  - UNITARY
  - CAV
  - ..... (any other idea)
  - (optionally use baseboard)
- Check Ventilation needs and the use of heat recovery and economizers.
- Check if using DOA makes any difference.
- Check if the CO2/Occupancy control adds some benefit.
- Check the internal gains.
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- Check the availability schedule of the system.
- Check the building thermostat and change its values.
- Check the COP of the cooling or heating machine, from real catalogues.(Justify)
- Check the efficiency of the boiler from real catalogues. (justify)
- Check the use of conventional and condensation boilers .
- Check the effect of over-sizing/ under-sizing the system.
- Check the possibility of splitting the total power needed in sequential stages.
- Check the effect of:
  - Temperature set-points of water circuits.
  - Temperature set-points of supply air ( heating/cooling)
  - Design methods: fixed supply temperature/ difference temperature

#### **Indicators:**

- Sizing of the components.(Capital cost)
- Energy consumption (total and intensive /m2/year)
- Type of energy consumed.(Impact on exploitation costs and contamination).
- Thermal comfort obtained per month and yearly.