



A. PORTABLES [recommended for any NEW portables only]

- i. Cooling: refrigerated. *if evaporative, locate on roof.
- ii. Heating: interior gas furnace
- iii. Ventilation: Operable Windows

B. MINI-GYM

- i. Cooling: Evaporative cooler.
- ii. Heating: Gas furnace or Boiler
- iii. Ventilation: Accessible exhaust fans with operable windows

C. CAFETERIA/ KITCHEN

- i. Cooling: Evaporative cooler. Provide separate cooling system for kitchen. *for cafeteria, consider the same system as the other buildings on campus
- ii. Heating: hot water [unit ventilator, duct coils]
- iii. Ventilation: Negatively pressured to kitchen. Exhaust fans, use hood as supplemental exhaust.

D. LIBRARY/ MEDIA CENTER

If the facility is a stand-alone, please follow recommendation below. If it is integral to a bigger project, consider tying to the overall system that is being used. The work room should be its own zone.]

- i. Cooling: Refrigerated Air or Evaporative Cooler w/ Relief Air.
- ii. Heating: Furnace inside
- iii. Ventilation: Exhaust fans with operable windows, power ventilator w/

economizer

E. Administration

Designer is expected to establish at least eight distinct controllable zones. Preferably, the administration area should be served by an independent system. Two approaches and preferences below:

OPTION ONE

- i. Cooling: package units
- ii. Heating: package units
- iii. Ventilation: package units

OPTION TWO

- i. Cooling: single air-washer in a mechanical room
- ii. Heating: gas furnace or boiler
- iii. Ventilation: AHU

F. Performing Arts Center [PAC]

Designer should be cognizant of the irregular patterns in which five distinct zones of the PAC's are used: backstage, stage, main auditorium [~500 seating capacity], sound room, & classrooms.

A. BACKSTAGE

- i. Cooling: refer to overall bldg sys. Or if free-standing then refer to system approp under SF categories below.
- ii. Heating: refer to cooling
- iii. Ventilation: refer to cooling



B. CLASSROOMS

- i. Cooling: Refer to overall bldg sys. Or if free-standing then refer to system appropriate under respective square footage categories below.
- ii. Heating: Refer to cooling
- iii. Ventilation: Refer to cooling

C. STAGE

- i. Cooling:
 - A. primary: Extension of system serving other classrooms in the PAC
 - B: supplemental: separate packaged unit
- ii. Heating: Extension of A above.
- iii. Ventilation: Exhaust fans with operable windows.

D. MAIN AUDITORIUM

*2-stage and always separate from other zones to satisfy lo-use [norm] and high[er] capacity events [rare].

- i. Cooling: packaged unit w/ economizer minimum 2-stage and always separate from other zones!
- ii. Heating: packaged unit
- iii. Ventilation: exhaust fan & economizer. Provide operable windows.

E. SOUND/ CONTROL ROOM

- i. Cooling: Separate exhaust fan that pulls air from adjacent perimeter spaces that are operating most of the time. Run a separate supply duct to supplement cooling from auditorium when it's running.
- ii. Heating: Same 'borrowing' principle as above
- iii. Ventilation: Exhaust fan with operable windows

G. < 5,000 sf Additions [ie, classrooms, kindergarten, & special needs additions]

- i. Cooling: Split system, one for each classroom with air cooled condenser outside on the ground max 50' from furnace
- ii. Heating: Gas furnace for each classrm in building
- iii. Ventilation: Exhaust fans with operable windows

H. > 5,000 - 15,000 sf Additions

- i. Cooling: Central DX unit, dual-duct with zone mixing boxes.
- ii. Heating: Small boiler / coil.
- iii. Ventilation: Fixed fresh air in system

J. > 15,000 sf Additions

- i. Cooling: chiller unit or for areas greater than 20,000 sf, consider heat pump [water source vs. ground source]. Consider redundant central / large direct air washer or indirect evaporative cooling for energy conservation.
- ii. Heating: boiler or heat pump
- iii. Ventilation: If chiller system, integral. If heat pump system, separate ventilation system [heat recovery]



K. Commons

- i. Cooling: Primary: Air washer; Supplementary: building chilled water system
- ii. Heating: Hot water system if it exists; roof top furnace, if not.
- iii. Ventilation: AHU

L. High School Gymnasium [two stage zones should be considered: seating at extremes and center courts]

- i. Cooling: Evaporative cooling for the center; Auxiliary chilled water systems for the seating areas.
- ii. Heating: Hot water system in a mechanical room.
- iii. Ventilation: AHU

M. Auxiliary and Middle School Gymnasia

- i. Cooling: Evaporative Cooling
- ii. Heating: Hot Water System; gas fired furnace on mezzanine preferred.
- iii. Ventilation: AHU