1. Consider shutting down fans, pumps and other equipment during unoccupied periods.

2. Consider load shedding.

3. When a central air system serves areas of the building which may have different occupancy schedules, design and layout ductwork so that each occupancy may be isolated from the others. Provide motorized isolation dampers and pressure sensors in main ducts serving each occupancy.

4. For RCMS and Building Automation System Requirements the reader is directed to review and Control System Design Guidelines, Standards and Other Requirements posted on the U of A website.

5. For specific questions contact Engineering & Operations

6. Consider control of outdoor ventilation volumes based on occupancy changes and varying usage of the facility. CO₂ Sensor accuracy/tolerance required to be +/- 5% at the 750 ppm range.

7. In tall buildings make provisions to overcome stack effect by controlling the building pressurization. Balance return air values on a floor-by-floor basis. Provide pressure sensors at several levels of the building and use a weighted average building pressure value to control the ventilation air quantity.

8. Evaluate exhaust system control approaches on a case by case basis, apply solutions where practical:
   - Provide occupancy sensors with time delay to control washroom exhaust fan system operation.
   - Alternate provide occupancy sensor to control washroom exhaust fan only where the washroom has a dedicated exhaust fan.
   - In isolated instances these same occupancy sensor(s) may be used to control light(s) where no other control exists.

9. Following careful consultation with users and where applicable, fume hoods to be controlled by occupancy sensors with local overrides. Provide separate storage cabinets with separate exhausts for chemical storage to allow fume hoods to be shut down during unoccupied periods while the chemical storage cabinets remain exhausted.

10. Review control for local and general lab exhausts on a case by case basis in consultation with U of A Facilities and Operations groups to obtain approval on the best possible solution for each application.

11. Consider using the air system chilled water coils for supplying the secondary process chilled water loads during the winter. Using a local chilled water piping circuit to recover heat from the process
loads would result in “free cooling” of the process loads with the added benefit of using the recovered process waste heat for heating of the supply air at the air handler.

12. Provide air flow measuring stations in the main supply and the main return air plenums in all VAV air systems. The airflow stations are to be either the multi-pitot tube grip type with a differential pressure sensor or fan volumetric probes. Specify the measuring station size and the differential pressure sensor range. Ensure that the airflow station is installed with the manufacturer’s recommended straight sections of ductwork on both sides of the measuring station.

13. For all requirements relating to: ASC, RCMS and end point availability, DDC output control, dampers, pneumatics, operators, control strategy, control devices, temperature, volume and pressure control as well as software requirements, see U of A Control System Requirements published on the University of Alberta website.


15. For zones with roof heat loss, provide radiation elements and temperature controllers to maintain a minimum 64.4°F (18°C) ceiling space temperature.

16. Do not combine interior and exterior partitioned spaces, or exterior spaces with different exposures on a single zone.

17. Limit heating and cooling zones to a maximum of three offices per zone or 100m² exterior/ 200m² interior.

18. Provide temperature controlled zones as required to accommodate load variation, occupancy variation, varying occupied hours, and variation in air quantity requirements. In general, limit zones and VAV boxes to a maximum of 1270 CFM (600 L/s).