



Division 238100

Decentralized Unitary HVAC

Equipment

DESIGN GUIDE

1 General

1.1 General

- A. CWU does not typically utilize decentralized unitary HVAC equipment for broad use throughout campus buildings largely due to their equipment life span and maintenance. The use of centralized systems and campus utilities provides for increased energy efficiency, increased equipment longevity and reduced maintenance.
- B. Decentralized systems do have applications for periodic use in facilities, particularly for isolated functions that require cooling/heating year-round and outside of the normal building occupied hours.
- C. Use and application of these systems shall be limited.

1.2 Variable Refrigerant Flow Systems

- A. If selected manufacturer requires certification to service equipment, both the installer and the owner shall have certification in place. Consult with MHM to Owner's current certifications and utilize these certifications as the basis of design. If the Owner does not have certification, include training in the contractor's project costs for the Owner to obtain certification by a minimum of two campus service technicians. Costs shall include tuition and Central Washington University will provide travel and per diem expenses.



2 Materials

2.1 Split System Air Conditioners/Heat Pumps

- A. Manufacturers
 - 1. Daikin-basis of design due to stocking of parts
- B. Ducted or ductless application.
- C. Consider condensate drains and use of condensate pumps for ductless applications.
- D. Systems without economizer shall be high efficiency and provided with a low ambient kit capable of operating down to -10 degrees F or lower.
- E. If equipment utilizes packaged controls, provide 230900 shall provide a supplemental space sensor for the building automation system to monitor space temperature and alarm when temperatures are out of range.

2.2 Variable Refrigerant Flow Systems

- A. CWU has a beta project (estimated construction complete in 2023) at Nicholson Pavilion Health Education. Before adopting more of these systems on campus, CWU prefers to have the beta project completed and operate through a full year of warranty before committing acceptance of more of these systems on their main campus where campus utilities are available.
- B. If utilized, the manufacturer's software needs to integrate seamlessly with the campus building automation system, Section 230900. Vendor shall provide live examples of integration that allows from read/write of setpoints and schedules from Section 230900 software.
- C. Engineer shall consider defrost cycle and design so that system provides continuous heat and meets the space requirements.



3 Execution

3.1 Variable Refrigerant Flow Systems

- A. Provide start-up by manufacturers representative. Training provided by manufacturer's representative. Copy of start-up reports included in O&M manual.

4 Appendix

4.1 Reserved for future content.

