



13 12 00
FOUNTAINS

1. GENERAL

- A. Due to water conservation efforts and the high maintenance requirements of fountains, new interior and/or exterior fountains are not allowed.
- B. If a variance is granted for a fountain, it shall be connected to the sanitary sewer system and shall not connect to the storm sewer system.
- C. If a variance for a fountain is granted, funding source for the related infrastructure and fountain shall be private funds.



13 21 00

PRE-FABRICATED ENVIRONMENTAL ROOMS

1. GENERAL

A. Related sections:

- i. 23 00 00 – General Mechanical Requirements (HVAC)
- ii. 26 00 00 – General Electrical Requirements

B. Intent:

- i. The guide is for the purpose of assisting the design engineer with specifying environmental rooms, walk-in coolers and/or freezers used in research or for educational purposes. This guide specification is not intended for food storage walk-in coolers.
- ii. The unit shall be provided by a single-source manufacturer and the manufacturer shall be ISO 9001 registered.

2. PRODUCTS

A. Acceptable manufacturers are:

- i. Nor-Lake, Inc.
- ii. Harris Environmental
- iii. Thermmax Scientific Products

B. Insulated Panels / Walls / Roof

- i. The environmental room shall be pre-fabricated and field assembled and shall consist of modular, interlocking, pre-insulated panels. The panel insulation shall be polyurethane rigid foam and the thickness shall be sized to prevent condensation on the exterior and shall be no less than 4 inches thick. Sufficient gasketing shall be provided to stop moisture migration.
- ii. Floor panels shall be designed to withstand 600 pounds per square foot pressure minimum.
- iii. Adjoining environmental rooms operating at different conditions shall not share panels, but shall be independent of one another. (No shared roof, floor or wall panels).

C. Doors

- i. The door shall have an anti-sweating heater wire around the perimeter to prevent sweating, an observation window and a kick-plate.

D. Ramps

- i. Discuss with UGA project manager whether a ramp is needed and if so should it be internal or external to the unit.

E. Interior floors shall be provided with tread plate covering to reducing slipping.

F. Condensing units shall not be mounted atop the cooler unless it is water-cooled. If mounted atop unit, a minimum of 36 inches clear from the top of the unit to structure is required. In addition, adequate clearances for access and maintenance shall be provided. Air-cooled units shall be installed remotely outdoors unless specifically approved by Project Manager.

G. Electrical:

- i. The environmental room shall have a single point of power connection in a NEMA 1 cabinet containing circuit breakers for lights, outlets and cooler located directly above the controls.



- ii. Lighting shall be designed to maintain to provide 70 foot candles. Lights shall be gasketed and all associated hardware designed to operate in a damp location without rusting. All wiring shall be concealed in conduit inside the panels.
 - iii. Provide 2 duplex receptacles per wall minimum unless otherwise instructed. Discuss locations with Project Manager.
- H. Controls:
- i. Discuss with Project Manager to ensure what design conditions are needed. Many environmental rooms are designed for 4 degrees Celsius, but others may vary depending upon the department. Others may require humidification and/or dehumidification. DP shall confirm any tolerance/dead band requirements for both temperature and humidity with UGA PM at the start of the project.
 - ii. Programmable microprocessor controls for temperature and humidity control shall be encased in a lockable panel with an acrylic cover. Temperature and humidity shall be displayed via a liquid crystal alphanumeric display.
 - iii. The controllers shall have sufficient outputs and inputs to interface with alarms or other devices as required.
 - iv. The controller shall be provided with the capability of generating e-mail or text messages to identified individuals via the internet in the case of the cold room operating outside set parameters.
 - a. Coordination with the FMD IT Department will be required for installation of associated software and for programming of individual text and e-mail addresses.
 - b. Coordination with campus EITS to provide data cable drop for transmission of alarm text or e-mail.
 - v. Provide low and high limit safeties to prevent over cooling or over-heating and shall generate audible and visual alarms. High and low safeties shall be provided with automatic resets rather than manual resets.
 - vi. Paper chart recorders are generally not desired. Requirements for reviewing temperature and humidity historical trend data shall be confirm with the UGA PM at the start of the project.
 - vii. Product sample temperature sensors shall be provided with protective cover.
- I. Alarms:
- i. Provide audible and visual alarms.
- J. Water-Cooled Condensing Units:
- i. The condensing unit shall be indoor type.
 - ii. The compressors shall be hermetic.
 - iii. Indoor water-cooled condensing unit accessories include:
 - iv. Water regulating valve for head pressure control
 - v. Coaxial or shell and tube condenser shall be selected for the proper EWT and condensing temperature.
- K. Outdoor Condensing Units:
- i. The condensing units shall include pre-painted galvanized cabinet, compressor, condenser, fan motors, liquid receiver with fusible plug, compressor service valves and waterproof electrical control panel. The assembly shall be designed for outdoor use.



- ii. The compressors shall be serviceable semi-hermetic or scroll type
- iii. Outdoor condensing unit accessories shall include:
 - a. Head pressure control valve
 - b. Crankcase heater
 - c. Compressor contactor
 - d. Dual pressure switch
 - e. Liquid shut-off valve and charging port
 - f. Liquid line filter / drier & sight glass
 - g. Suction filter
 - h. Defrost timer
- iv. Condenser coil constructed of copper tube with plate type, die formed aluminum fins.
- v. Condenser fans to be propeller fans arranged for horizontal discharge, the fans shall be statically and dynamically balanced.
- vi. Accessories common to all evaporators:
 - a. Hot gas only for defrosting copper tubes and aluminum fins
 - b. heavy gauge textured aluminum casing
 - c. Sweat connection
 - d. Schrader valve for suction pressure measurement
 - e. Thermally protected PSC motors
 - f. Thermostatic expansion valve
 - g. Liquid line solenoid for automatic pump down.
- L. Accessories:
 - i. If the cold room is provided with a sink (not recommended), then all water lines and drain lines shall be heat traced and insulated.
- M. Acceptable manufacturers are:
 - i. Nor-Lake, Inc.
 - ii. Harris Environmental
 - iii. Thermmax Scientific Products

3. EXECUTION:

- A. The installing technicians shall provide proof of experience in installing pre-fabricated environmental rooms. Provide proof of installation of at least 10 similar units.
- B. The installing Contractor shall verify that the floor upon which the environmental room shall sit is level before constructing the room and that all walls are plumb.
- C. The Contractor shall provide a minimum of 30 days of trend data indicating stable control of design parameters (temperature and humidity).
- D. A factory employee or factory designated individual shall be present at start-up.
- E. Warranties:
 - i. Warranty shall become effective following the acceptance date and cover the following items for the noted duration:
 - a. Five-year compressor warranty
 - b. One-year parts warranty
 - c. 18-month labor warranty



13 34 19
METAL BUILDING SYSTEMS

1. GENERAL

- A. Introduction: Metal Building Systems are generally used in rural or agricultural settings, and the design intent is for the metal building form to emulate the shape of a barn.
- B. The roof shall be a gable form with a minimum 6 in 12 slope.
- C. Overhangs of at least 12 inches are required on all sides of the building.
- D. Vinyl soffits are not allowed.
- E. The roof color and material shall be equal to Galvalume (55 percent aluminum-zinc alloy coated sheet steel).
- F. The siding color shall be a medium gray and color samples shall be submitted to the Project Manager for approval.
- G. All roof penetrations shall utilize a pre-manufactured boot and/or sleeve that is specifically designed for a metal building roof system.