



Southern Utah University

Design Requirements

To be used as a supplement to the Utah Division of Facilities Construction and Management (DFCM) Design Requirements

https://dfcm.utah.gov/wp-content/uploads/02.02.21-design_requirements.pdf

Revised: April 20, 2022

The items listed below are supplemental requirements to the DFCM Design Requirements and are specific to Southern Utah University. These requirements will be implemented into all SUU projects.

1. Concrete
2. Interior Finishes
3. Door Hardware
4. Mechanical
5. Electrical
6. Communication Systems
7. Grounds
8. Custodial

1. Concrete

- 1.1 Flatwork Specifications
- 1.2 Exterior Concrete Specifications
- 1.3 Quality Control Testing

1.1 Flatwork Specifications

For all flatwork, use SUU Mix

Sunroc: 6003A

Western Rock: SUU Spec

1.2 Exterior Concrete Specifications

4000 Psi and 6.0 Bag

3.0 Lbs. of Macrofiber (650 Fiber, Fortafiber) per cubic yard of concrete

Pozzolans: Less than 15%

Air Entrainment: 6 ¼ % plus or minus 1 ¼ %

Use of calcium chloride prohibited

Seal with Dayton Superior J29 Weather Worker (28 days after pour)

- 2.3 Flooring**
- 2.4 Framing**
- 2.5 Ceiling Grid**

2.1 Drywall

Gypsum: All Drywall finish will be smooth wall with no sand scratches or pinholes.

2.2 Paint

New drywall or patchwork will be primed with one coat of an appropriate sheetrock primer such as PPG HIGH HIDE. Paint with two coats Sherwin Williams Cashmere low luster or PPG Zero VOC Satin. Back roll each coat applied to match up to existing stipple. Paint all patches corner to corner.

626 finish unless otherwise specified

Everest D Family restricted keyway

626 finish unless otherwise specified

3.2 Auto Openers

LCN4642 or 4631 Aluminum or Dark Bronze finish

LCN8310-

All low-voltage wiring will be entirely in conduit or approved protected raceway.
System and components shall be coordinated with Southern Utah University's lock shop.

4. Mechanical

4.1 Service Access

4.2 Lighting

4.3 Wiring

4.4 Heat Exchangers

4.5 Fire Systems

4.6 Water Systems

4.7 Fire Device Mounting

4.8 Codes and Standards

4.1 Service Access

Adhere to manufacturer's recommendations for working area provided around and in front of all equipment.

Cannot be blocked by piping, conduit, cable trays, or other obstructions installed as part of the construction process.

Place equipment to accommodate ready service access to unit.

Provide adequate access for service of equipment via access panels in ceilings or catwalks in attic space to include a platform working space around equipment placed within the attic space.

All access methods must meet OSHA, NFPA and other pertinent regulations.

4.2 Lighting

Provide lighting in attic areas for all pathways to equipment and where equipment is located.

Minimum of 15 ft. candles, with adequate lighting at equipment location for service to be performed safely.

4.3 Wiring

Provide service outlet at equipment (110V duplex outlet).

with a minimum of water loss. All valve locations shall be clearly indicated on "Record" drawings.

4.7 Fire Device Mounting

Fire Device Mounting Heights (See Image)

4.8 Codes and Standards

All work must be done in a professional manner.

Acceptable rigid raceways: GRC, IMC, EMT, and PVC. EMT only above grade, PVC only below grade. All metallic raceways below grade must be wrapped with 10 mil tape.

Acceptable flexible raceways: Steel flexible conduit, liquid tight steel flexible conduit: 6 foot or shorter lengths, aluminum or non-metallic not allowed. No concealed flexible conduit unless special permission is granted by SUU.

Low or control voltage and signal/data wiring shall not share a raceway with line voltage.

5.2 Conduits

No cast aluminum conduit fittings or locknuts; except for screw in cast aluminum flex connectors on conduits 1 inch or smaller or where specifically allowed by SUU.

All four-inch square boxes shall be 2-1/8" deep, minimum, unless approved by SUU. No more than 3- 3/4" conduits in this size box. More than 3 conduits will require 4-11/16" x 2-1/8" square boxes or larger.

No NM, MC, BX, AC, ENT conduit cable shall be used.

Conduits shall be s

All panels shall have bolt-in type circuit breakers. Some exceptions will be made in residential locations.

Multi-wire Branch Circuits shall comply with N.E.C. 210.4 but all receptacle branch circuits shall have a neutral wire for each ungrounded conductor (120 volt circuits).

Three pole breakers shall not be used to serve single phase circuits.

Voltage drop calculations must be considered in all feeders and branch-circuits.

5.9 Lighting

See SUU Electrical Manager, Matt Vandenberghe for light fixture detail.

No fluorescent, HID, or Incandescent lighting without special permission.

Exterior power and lighting needs shall be considered on all new projects. Photo-eye control on exterior lighting.

5.10 Emergency Blue Light

See University for Emergency Blue Light detail.

5.11 Codes and Standards

All supports must come from structure. Follow N.E.C. rules.

All local and national electrical codes and standards shall be followed.

All work must be done in a professional manner.

A representative from the IT department should be included when designing or bidding new head end or control systems that utilize campus network or fiber resources.

Standard use Receptacles and switches shall be spec. grade 20 amp devices. Stainless steel covers shall be used unless special permission is granted to match existing. Devices shall be weather resistant in outdoor and damp locations.

All bends over 22-1/2 degrees in PVC shall be GRC or IMC wrapped with 10 mil tape. All below grade GRC and IMC shall be wrapped with 10 mil tape.

New buildings shall use a building control system that is compatible with existing lighting control systems. (Examples: Wattstopper, ILC. Check with SUU)

Minimum 3.5-inch-wide studs for walls. Room is needed for data, power, and soundproofing with the use of deep boxes for devices.

6. Communication Systems

6.1 Communications Rooms

6.2 Cabling Infrastructure Between Buildings

6.3 Cabling Infrastructure Within Buildings

6.4 Data Cable Locations

6.5 Data Cable Pathways

6.6 Labeling and Documentation

6.1 Communications Rooms:

Are never to be located under or adjacent to plumbing systems, such as restrooms. Fire sprinklers, as required by fire code, will be the only permitted plumbing system.

Should be located near the center of a building in order to minimize cable lengths.

For multi-story buildings, the rooms should be stacked vertically.

Whenever possible the main room (MDF) should be centered vertically.
When cable lengths allow, all cables shall be terminated in the MDF. Other communications rooms (IDF) will serve as a path for the cables to get to the MDF.

- Shall be Corning fiber optic cable.
- If not in conduit, the fiber must have interlocking armor.
- To be terminated in a wall mount housing using Corning slice cassettes.

The number and location of data drops for wireless can change due to expected user density. i.e., A stadium style classroom would need more Wi-Fi density than a similar area used as an office space.

Main hallways, lobbies or foyer areas on the main floor should have one data drop location on the wall or in the ceiling for an emergency notification IP speaker.

Mechanical rooms where smart building IP based controls are placed shall have data drops as required. These may include DVRs, security camera controls, lighting, signage, locks, sprinkler controls, and HVAC.

Mediated rooms and classrooms will require 3 data runs to the presenter / teacher station.

A 1" conduit is required between the teacher station and projector and or wall mount TV location.

If the room has a TV, then 2 data outlets are required at the TV location.

Rooms that call for a projector shall have two data outlets and a power outlet at the projector. The projector mount and location should be approved by the SUU IT Media Tech.

Consider data drops for classroom signage and controls that are IP based.

6.5 Data Cable Pathways

Conduits shall be 1" minimum.

No more than two boxes max may be daisy chained on one conduit. No daisy chaining is preferred.

Where cable tray passes through a firewall, provide adequate firestop pillows.

6.6 Labeling and Documentation

All faceplates, jacks, and termination blocks shall be numbered and labeled. The numbering must match the campus' documentation system. Campus IT can provide examples for labeling.

- Each faceplate will have a unique ID based on the building and room.
 - I.E. The first faceplate in the Science Building for any given room will be labeled PLATE-ID SC-01. If there is a second faceplate in the room it will be labeled PLATE-ID SC-02 and so forth. It is common to start with the first plate to the left of the door as -01 and continue clockwise around the room. Provide SUU IT with a map showing room numbers, locations, and faceplate-id numbers. All data needs to have a faceplate ID assigned to it including wireless access points, projectors, cameras etc.
- Each data jack will have a unique number within the building.
 - Every data cable in the building will have a number assigned starting with 1001 and working up sequentially.
 - Every data jack shall be labeled individually with D 1001, D 1002 etc.
 - One faceplate can have from 1 to 6 data jacks. Jacks don't have to be sequential, but they do need to be mounted in numerical order left to right and top to bottom, like reading a book.
- VisiPatch 360
 - The VisiPatch 360 connecting blocks will be numbered sequentially starting at 1001 and working up.
 - The data jack numbers throughout the building (i.e. D 1001) must match the other end of the cable mounted on the VisiPatch 360 blocks (1001).
 - SUU IT will provide the label strips for both the station lines and the equipment lines on the VisiPatch 360 panels.

At the conclusion of a project, provide IT with a floor plan that shows jack locations with faceplate ID's and data jack numbers.

Installer will provide cable test results. Ask about acceptable formats.

All test results and documentation shall be provided to IT before receiving final payment.

7. Grounds

7.1 Landscaping Damage

7.2 Tree Replacement

7.3 Sprinkler Lines

7.4 Trash and Debris

7.5 Clocks

7.6 Backflow System/Pressure Vacuum Breaker

7.7 Mulch

7.1 Landscape Damage

Any landscape damaged by the contractor or subcontractors will be repaired to SUU Grounds

standards

7.5 Clocks

All new clocks must be Rainbird brand and must be capable of connecting to the Rainbird IQ central control system. The clock will

SUU KEY CONTACT PERSONNEL

Tiger Funk
Assistant Vice President
Facilities Management
funk@suu.edu
435.586.7786
435.559.8451

Ben Johnson