# 00 00 00 – General Design Considerations

## INTENT OF GUIDELINES

- These guidelines are intended to provide direction for the design of all new and remodeled facilities at UNC, and to enhance the coordination between the design team and the University. This document is intended to support long term operation and maintenance of campus facilities. In addition, the University has developed an Architectural Standard that is a companion to this document. The Architectural Standards address exterior building materials and their usage as well as site features with a goal of providing more architectural consistency on campus.
- Designers are encouraged to make suggestions for alternative approaches. The standards are not intended to be a comprehensive stand alone specification. Deviations from the guidelines must be approved by the University.
- The design team shall incorporate these requirements into the construction documents as applicable
- The University has attempted to standardize many types of equipment and products in order to simplify spare parts requirements, training, maintenance and operation of the facilities.

## SECTIONS INCLUDED:



## 00 00 00 - GENERAL DESIGN CONSIDERATIONS

ENERGY AND SUSTAINABILITY

- The University facilities are subject to the High-Performance Certification Program (HPCP) as defined by the Office of the State Architect (OSA). The design team should review the requirements of this program and discuss applicability with the UNC Project Manager.
- Sustainability should be integrated throughout the design and engineering process. The Universities intended approach to sustainability is identified throughout the design guidelines. It is the the consultant’s responsibility to review the individual sections and provide a comprehensive and integrated approach to sustainability.
- The University is dedicated to the conservation of energy and the reduction of energy costs on campus. Designs should make the most efficient use of building materials and energy sources available.

- Consider the project's capability of incorporating alternative sources of energy, specifically renewables.
- Designs shall balance the initial construction costs with long-term maintenance costs. The consultant may be asked to provide life-cycle costs on individual systems and/or the building as a whole.

## EXTERIOR CONSIDERATIONS

- The University may contract directly with a third party building envelope commissioning agent. Design teams will be required to participate in the commissioning process including incorporation of design review comments prepared by the commissioning agent.
- The use of daylighting techniques is encouraged. Clerestory windows are preferred over skylights. Sun control and shading devices should be utilized to control excessive solar gain. High performance glazing should be utilized where heat gain will be an issue. Computer modeling is recommended for daylighting, sun control, solar gain, and overall building efficiency. Mechanical systems shall not be relied on to make up for uncontrolled solar gain. Lighting controls should be designed for daylight harvesting where possible. Additional circuits may be required for even lighting and occupant comfort throughout the building.
- To the extent possible, each new building should be located to provide adequate service vehicle access including dock access. Dock, dumpsters, etc. should be integrated into the building design and shall be screened with compatible building materials.
- Provide a concrete pad and enclosure for a trash dumpster. Dumpster pad shall be at least 12' X 14' X 6". If gates are to be installed on the enclosure, they must be extremely heavy duty. Enclosure shall be compatible with building construction. Specify pipe bollards to protect the enclosure. Locate bollards at the entrance to the enclosure and around the dumpster to protect the enclosure. Provide a reinforced concrete approach pad 10' X 10' X 6" minimum. Locate dumpster enclosure to allow for straight approach by the truck. Refer to appendix drawings for dimensions of front loading trash containers and trucks in use on campus.

## CUSTODIAL CLOSETS

- Custodial closets (wet) shall be a minimum of 80 square feet. No dimension shall be less than 6' - 0". At least one closet shall be provided for each 15,000 square feet of building space and a minimum of one per floor.
- Custodial closets shall not be used for electrical panels, telephone equipment, roof hatches or similar equipment.

- Doors to the closets should swing out to maximize usable space and be a minimum of 3’6”.
- Closets shall include a floor mounted, drop front, mop sink with a waterproof barrier on the walls adjacent to the mop sink, floor drain, hot and cold water supply with attached hose and wall clip, a minimum of 20 linear feet of storage shelving, mop and broom holders, at least one grounded 4 plex electrical outlet and adequate lighting. Provide a pegboard on one wall to hold mops, brooms, etc. Mop sink is to be located in the front corner of the closet near the door.
- A floor drain should be included in addition to mop sink.
- In addition to the individual wet closets on each floor, provide a central equipment and supply closet for each building that is at least 15’x20’. This closet will be used for bulk supplies and equipment. Provide a break/office area for the building staff and should be sized accordingly with a minimum of 6 lockers for personal storage.

## MAINTENANCE CLOSET

- Provide a separate room, minimum of 100 square feet for use by the maintenance staff. Room shall include shelving for spare parts storage and a plan table/work bench. The plan table/work bench should be similar in size and shape to a drafting table with a hinged storage compartment under the table top for drawing storage. Top should be flat. Entire unit should be faced with plastic laminate. Provide a wall cabinet with doors for storage of O&M manuals and other references. Provide lighting and power at the plan table.

## MECHANICAL ROOM LOCATION AND DESIGN

- Mechanical rooms must be large enough to allow adequate safe working space. Space must be provided for coil and tube bundle removal, without requiring disassembly of adjacent equipment.
- An areaway or doorway large enough to accommodate the largest component in the mechanical room shall be provided. A grade level, outside entrance with an oversized door is preferred.
- All mechanical rooms must be accessible without disturbing building occupants or normal functions of the building. Access shall be limited to authorized maintenance personnel only.
- Equipment rooms shall be arranged and located such that heat and sound will not transmit to other parts of the building.
- Mechanical rooms must have adequate ventilation. This is especially critical with the increased use of electronic controls and other components.
- Provide floor drains. When located above an occupied area, surround the area with a 6" high curb, and provide membrane waterproofing in the floor.

- Provide adequate lighting and electrical receptacles in all mechanical spaces. Lighting layout must not be finalized until after equipment and ductwork installation.
- Provide welding outlet in all Mechanical Rooms.
- Provide adequate access openings in pipe and duct chases for service and maintenance.
- Give consideration to prevailing wind direction to prevent ingestion of snow, exhaust system fumes, etc.
- Provide secure elevator access where possible.
- Rooftop HVAC units should be housed within a penthouse where possible. Provide interior stair access to penthouses. Where design does not permit, locate equipment away from roof perimeter to minimize visibility of units.

## CLASSROOM DESIGN

- All new classrooms are to be highly technology enabled unless otherwise directed.
- Please coordinate with Appendices on ***GUIDELINES FOR TECHNOLOGY CLASSROOM DESIGN***

Common features of classrooms will include the following:

- Dry erase boards
- Tack surface at rear entrance to room
- Ceiling mounted projection and/or flat screen monitors
- Locate screens as to not overlap marker boards
- Telcom/data/A/V/ connections at front of room and in selected locations in conjunction with monitors for breakout areas
- Instructors podium with connections for all media
- Projection screens (powered)
- Blackout shades (powered)
- Clock
- Hardwood chair rail – 8” minimum (bottom 25” AFF)
- Acoustical treatment
- Lighting controls including flexible lighting levels and occupancy control
- Adjacent storage for furnishings
- Furnishings shall typically be loose wheel mounted tables and chairs. Provide adequate square footage per station to allow for flexible configurations.

- Mortise type deadbolt lock inside all classrooms
- Flooring will generally be carpet

## RESTROOMS

- Ceramic tile should be specified for restroom floors. Walls should also be ceramic tile (particularly at the plumbing walls) to 7'-0'' AFF, when budget allows, otherwise to 4-0". Light colored grout should be avoided for tile floors.
- In general, specify wall hung lavatories rather than counter mounted units due to difficulty in keeping counters clean.
- Shower rooms shall have a hose bib located within the room for use by custodial.
- Design team to consider gender inclusive restroom (GIR) inclusion for all new construction/major renovation under the following guidelines
    a. Total number of GIR's to be no less than 10% of total WC requirements for both genders per IPC.
    b. Provide at least one single occupant GIR on each floor where restrooms are required
    c. Unless the IPC's gender-specific requirements are revised, GIR's will be in addition to the IPC minimum fixture count

## LACATION / WELLNESS ROOMS

- Design team to provide approximately 100 sq. ft. with thoughts of future conversion to another use.
- Provide a sink, refrigerator and a chair for the occupant. Door hardware should provide a privacy locking function and occupancy notification

## ROOF ACCESS

- Provide walk out access to at least one roof level with ladders to all other levels. Avoid locating roof ladders in custodial closets.
- Provide walkways to all roof mounted equipment.
- Provide fall protection anchorage per OSHA standards. Provide parapets to guardrail height where possible.

## TELECOMMUNICATIONS ROOMS

- Telecommunications rooms shall be a minimum of 100 square feet for the main telecommunications room. Additional riser closets will be required depending on

the building configuration. Refer to Division 27 of these standards for additional information.

RECYCLING CENTERS (INTERIOR)

- Provide UNC standard “MAX R” recycling cabinets with removable bins and appropriate graphics for collection of various recyclable materials. Include space for paper and commingled plastic, glass and aluminum. Recycling center should be located near vending area and other locations as required by the building design. Max R Specification in Div 12 93 00.

VENDING MACHINE SPACE

- Provide a space for at least two (2) vending machines. Vending machines should be located in a recessed area easily accessible to the public. Provide power and cold water tap. Floor should be VCT.

ACCESSIBILITY

- Where practical, design all new facility entrances to be accessible and an integral part of the facility accessible pathway.
- A minimum of one automatic door operator should be included as part of the accessible pathway design.
- Ensure compliance of all signage, wayfinding and other communication elements and features in coordination with University Signage guidelines in 10 14 00 SIGNAGE.