

03.01 DESIGN REQUIREMENTS

A. OVERALL CONSIDERATIONS

1. Design using forms and materials that are "harmonious and timeless" and that blend with neighboring buildings and the campus as a whole.
2. Achieve a thorough understanding of space relationships and user needs by a careful study of the Building Program and from subsequent discussions with the Planning Committee.
3. Develop a sound, functional plan that fulfills the Building Program.
4. Provide spaces that enhance user comfort and well-being to promote high productivity and task efficiency.
5. Because curricula and space needs change frequently, design to easily accommodate ongoing interior remodelings and building additions.
 - a. Provide easily changeable interior spaces to accommodate unanticipated as well as anticipated changes and future growth.
6. Because funds for maintenance and repair have historically been extremely inadequate, design using materials and systems that are exceptionally durable and need very little maintenance.
 - a. Unless stated otherwise in the Building Program, design buildings to provide useful accommodation to the Owner for at least 50 years.
 - b. Within the building enclosure, take particular care to provide competently installed thermal barrier, air barrier and moisture control systems that will last the life of the building.
7. Optimize design decisions based on a comprehensive life cycle analysis of the Project and a collaborative design process involving all key stakeholders.
8. Specify building systems identified in the executed Agreement Between Owner and Design Professional to be commissioned to ensure compliance with the requirements of the Owner's Building Program.

B. SUSTAINABLE DESIGN

1. Design high-performance building systems and select products and materials to achieve the following goals.
 - a. Minimize energy consumption.
 - b. Minimize environmental impact.
 - c. Minimize waste.
 - d. Minimize water consumption.
 - e. Maximize indoor air quality.
 - f. Maximize use of recycled and low embodied energy materials.
 - g. Maximize rain water retainage on the site.
 - h. Be in harmony with the site's ecology.
2. As a minimum for new buildings, incorporate LEED-NC (new construction) sustainable design strategies as an integral part of all design decisions.
 - a. Register the Project with the U. S. Green Building Council.
 - 1) Identify the Owner as Iowa State University.
 - 2) Identify the Project Name as the Official Project Title.
 - 3) Furnish the web site access code to the University Architect and the Owner's Representative.
 - b. As a minimum, attain LEED-NC, latest edition, Gold Certification, or as required by the executed Agreement Between Owner and Design Professional.
 - c. For minimum LEED points required by the Owner, see FDM Part 1/Support Docs/[Minimum Required LEED Points for ISU New Construction Capital Building Projects.xls](#).

3. The goal for new campus buildings is to consume as little fossil fuel energy as possible without jeopardizing user program requirements, user comfort, building durability, or sustainability goals.
 - a. Provide the Owner's Representative with detailed calculations and documentation that show energy consumption meet the Owner's current energy reduction requirements.
 - b. Wherever possible, design to reduce the use of fossil fuel energy sources by replacing with renewable energy sources.

C. EXISTING STANDARDS AND NEW TECHNOLOGY

1. The guidelines and requirements in this Manual are provided for the following reasons.
 - a. They are based upon the Owner's experience with materials, construction methods and details.
 - b. They have resulted in the fewest problems in operation and maintenance.
 - c. They have resulted in the best service and life of materials and equipment.
2. Uniform use of materials and equipment throughout campus has the following advantages for the Owner.
 - a. It limits the range of cleaning and maintenance products.
 - b. It reduces the variety of parts and materials which must be stocked for repairs and replacements.
 - c. It provides a continuity of aesthetic and functional user-experiences.
3. It is neither the policy nor the intent of the Owner to limit the creativity of the Design Professional in design or selection of materials, products or construction methods.
 - a. New materials, products, and construction methods, when evaluated using current knowledge of building science, may justify changes from these standards to meet the requirements of the Owner's Building Program.
 - 1) Wherever possible, consider using materials, products, and construction methods that are simple to detail and construct, replace a normally higher number of construction steps, encourage a quality installation, decrease construction time, and remain within the construction budget.
 - b. Obtain approval from the Owner's Representative prior to presenting proposed new materials, products and construction methods to the Planning Committee and incorporating them into the Documents.

03.02 THE BUILDING PROGRAM

A. GENERAL

1. Develop a written Building Program based, in part, on the Owner's Project Requirements furnished by the Owner.
 - a. The Building Program may be furnished by the Owner if so stated in the executed Agreement Between Owner and Design Professional.
2. The typical Building Program includes the following parts.
 - a. Approval Statement With Signatures
 - b. Executive Summary
 - c. Project Goals
 - d. Space and Adjacency Requirements
 - e. Existing Site Studies
 - f. Supporting Requirements
 - g. Existing Facilities Studies
 - h. Design Documents
 - i. Project Budget
 - j. Preliminary Project Schedule
 - k. Implementation Approach

09 68 00 CARPETING

A. GENERAL

1. Typically provide carpet for offices, auditoriums and certain classrooms; verify with Owner's Representative before specifying.
2. Typically carpet is purchased and installed by the Contractor.
3. Where broadloom carpet is desired, use only branded nylon with minimum face weight of 28 ounces and minimum average carpet pile yarn density of 7000.
4. Use carpet tile where flexibility is desired.

09 81 00 ACOUSTIC INSULATION

A. BATT INSULATION

1. Where acoustical isolation is required across metal stud partitions, specify higher density batt insulation specifically manufactured to reduce sound transmission.

09 90 00 PAINTING AND COATING

A. GENERAL

1. Specify the most durable and least environmentally damaging paints and coatings available.
2. Specify Class A paints and coatings where required by code.

END OF DIVISION 09 FINISHES

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Facilities Planning and Management
Facilities Planning
2nd Floor General Services Building
Ames, IA 50011-4021
Phone: (515) 294-8028
Fax: (515) 294-2764

February 5, 2013

Jonathan Ramsey
BNIM
317 6th Avenue, Suite 100
Des Moines IA 50309

Dear Jonathan:

Re: Troxel Hall – LEED Documentation WE Credit 1

The Campus Master plan developed by Iowa State University and adopted by the Board of Regents, State of Iowa in 1991 created guidelines to create a landscape that is self-sustaining and low maintenance once the plant material is established. Plantings subscribe to a palette of plants that is suited to the extremes of regional climate, the rigors of human impact on a pedestrian campus, and that are visually compatible with the local indigenous flora (1991 Campus Master Plan, Sasaki Associates Inc).

It is the policy of the Landscape Planning office, where the campus landscape architects and campus planners are located, and of the Campus Services division of Facilities Planning and Management that permanent irrigation systems are not installed on the Iowa State campus. ISU uses a palette of plant materials that are suited to the extremes of the Iowa climate and that watered solely for initial germination and plant stabilization. It is the operational policy that watering of plant materials ceases after the second growing season of establishment unless unfavorable soil or environmental conditions are present. In these individual cases, hand watering of select plant material might be performed into the third growing season.

Due to anticipated drought conditions in the City of Ames, which affect ISU, minimal planting of new trees and shrubs will occur this spring planting season. Troxel Hall is affected by this reduction, where we will be planting drought tolerant ground covers in the planting beds a mix of native prairie sedge grasses in the rain garden. These areas will be hand watered during the coming year to allow establishment of the planting beds. Details on the specific plant materials is being provided in the included drawing (*020413 Intermediate Landscape Plan*). It is the University's intent to complete the landscape installation (*020413 Planting Plan*) once the region has recovered from the drought conditions that have existed here in Iowa over the past 9 months. We anticipate this to occur during the 2014 planting season.

Sincerely,



Kerry Dixon-Fox
Coordinator of Sustainable Design and Construction

9. Specify circulating pumps have gate, ball, or butterfly valves on either side of the pump.
 - a. Do not specify a check valve for a stop function.
10. Specify the inlet minimum size equal to 7 straight diameters, or otherwise specify suction diffusers.
11. Do not specify pumps that require removal from the system piping for servicing the impeller.
12. Specify submersible pumps for sewage ejection and sump pumping applications.
13. For condensate pumps, specify a union, check valve, and stop valve at discharge connections.
14. Specify mechanical seals for all pumps.
15. Locate pumps with adequate service space.
 - a. Do not locate pumps tight to ceilings or walls.
16. If triple duty valves are used, specify an additional isolating valve to insure tight shut off of the system for pump maintenance.
17. Chilled water pumps are not required.
 - a. Verify with Owner's Representative for each project.

22 30 00 PLUMBING EQUIPMENT

A. STEAM WATER HEATERS

1. Specify steam fired instantaneous or semi-instantaneous water heaters.
2. Specify water heaters with copper lining and a minimum 10-year warranty on tank and heat exchanger.
3. Specify a working pressure of 150 psig.
4. Specify pressure vessels are stamped with the proper designation required by the state Boiler and Pressure Vessel Rules.

22 00 00 PLUMBING FIXTURES

A. GENERAL

1. Specify matching plumbing fittings with visible parts chrome plated or another finish approved by the Owner's Representative.
2. Wherever possible, specify fixtures from a single manufacturer.
3. Specify mounting height and connections sizes.
4. Specify ADA compliant fixtures as required, mounted at the required height.
5. Specify loose key stops at all plumbing fixtures.
6. Specify loose key hose bibs at all exterior walls of the building.
 - a. Specify Model B65 freeze proof type wall hydrants by Woodford Manufacturing Company (http://www.woodfordmfg.com/Woodford/Wall_Hydrant_Pages/model65.htm) or approved equal.
7. Specify photometric valve operators where approved by the Owner's Representative.
8. Specify piping penetrations covered with escutcheon plates.
9. Specify plumbing fixtures are installed tight fitting to the wall and neatly sealed at the joint with silicone sealant.

B. TOILETS AND FLUSH VALVES

1. Specify wall hung, rear outlet, rear supply spud, white vitreous china water closets with the following features.
 - a. Siphon jet flush valve type with elongated bowl and black open front seat with check hinge
 - b. Floor mounted steel/cast iron support carrier assembly
 - c. High efficiency water usage of 1.28 gallon per flush maximum.
 - d. Maximum Performance (MaP) test results of no less than 750 grams per single flush.

DIVISION 22 PLUMBING

- e. Flow-matched to concealed, hard wired, auto-sensor flush valve with exposed nominal 4 x 4 stainless steel sensor plate from the same manufacturer
2. Coordinate flush valve sensor plate location with grab bar location.
 3. Specify toilets and flush valves by one of the following manufacturers or an equivalent product approved by the Owner's Representative.
 - a. American Standard (http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_1950.pdf)
 - b. Sloan (<http://www.sloanvalve.com/Specifications/WETS-2060-1311-1.28-ESS.pdf>)
 - c. Zurn (<http://www.zurn.com/operations/ecovantage/pdfs/specsheets/83460.pdf>)

C. URINALS AND FLUSH VALVES

1. Specify wall hung washout flush valve type urinals with the following features.
 - a. Rear supply spud
 - b. Integral side panels
 - c. Floor mounted steel support carrier assembly
 - d. High efficiency water usage of 0.13 gallon per flush maximum
 - e. Flow-matched to concealed, hard wired, auto-sensor flush valve with exposed nominal 4 x 4 stainless steel sensor plate from the same manufacturer
2. Specify urinals and flush valves by one of the following manufacturers or an equivalent product approved by the Owner's Representative.
 - a. Sloan (http://www.sloanvalve.com/Specifications/WEUS-1010.1311-0.13_ESS.pdf)
 - b. Zurn (<http://www.zurn.com/operations/ecovantage/pdfs/specsheets/81431.pdf>)

D. LAVATORIES AND FAUCETS

1. Except where a single wall hung lavatory is required by the Building Program, specify lavatories molded integral with the counter top or self-rimming white vitreous china lavatories with perforated or grid drains.
 - a. For single wall hung lavatories, specify white vitreous china supported by a steel carrier assembly.
2. Specify lavatory faucets that comply with ASME A112.18.1 and ASME A117.1 and have the following features.
 - a. Single hole deck mounted type fixture
 - b. Infrared sensor(s) to activate and de-activate water flow of 0.5 gallons per minute maximum
 - c. Option to set automatic water flow safety shut off at 30 seconds
 - d. Option to set sensor distance to 4 inches
 - e. Sensor powered by hard wired AC/DC transformer
 - f. Single supply for tempered water from under-counter-mounted thermostatic mixing valve
3. Specify faucets by one of the following manufacturers or an equivalent product approved by the Owner's Representative.
 - a. American Standard Moments Selectronic 2506 Series (http://www.americanstandard-us.com/assets/documents/amstd/spec/SpecSheet_2751.pdf)
 - b. Chicago Faucet Hytronic Series or E-Tronic Series (<http://www.chicagofaucet.com/catalog/catalog.php?CategoryID=ELECT>)
 - c. Delta Teck 590T0 Series (<http://www.specselect.com/PDFs/DSP-590TRevA6.pdf>)
 - d. Moen 8306 (<http://www.moen.com/shared/pdf/commercial/8305sp.pdf>)
 - e. Sloan Optima ETF-880 Series (<http://www.sloanvalve.com/Specifications/Optima ETF-880.pdf>)
 - f. Speakman Sensorflo S-8800 (<http://www.speakmancompany.com/products/detail/S-8800>)
 - g. Zurn AquaSense Z6913 Series (<http://www.zurn.com/operations/aquaflushsense/pdfs/specsheets/80667.pdf>)

4. For lavatory faucets used where water may be used for drinking or cooking, specify a “lead-free” product by one of the following manufacturers or an equivalent product approved by the Owner’s Representative.
 - a. Speakman Sensorflo S-8800-CA (<http://www.speakmancompany.com/products/detail/S-8800-CA>)
 - b. Zurn AquaSense Z6913-XL Series (<http://www.zurn.com/operations/aquaflushsense/pdfs/specsheets/200175.pdf>)

22 40 00 EMERGENCY PLUMBING FIXTURES

A. GENERAL

1. Provide eye washes and safety showers to meet Owner standards.
 - a. Consult with the Owner’s Representative.

22 47 00 WATER COOLERS

A. GENERAL

1. Specify a “lead free” material certificate from the water cooler manufacture prior to installation.
2. Specify only high efficiency units.
3. Specify Elkay VRCGRN series units (<http://www.elkayusa.com/cps/rde/xchg/elkay/hs.xsl/96606.aspx>), Halsey Taylor HVRGRN series units (<http://www.halseytaylor.com/HVRGRN.html>) or equivalent product approved by Owner.

B. ACCESSIBLE UNITS

1. Locate water coolers along accessible routes.
2. Specify 50% of water coolers accessible for persons in wheel chairs and 50% of water coolers accessible for standing persons.
3. Comply with requirements for DF Drinking Fountains in “Access for Everyone”.
 - a. See paragraphs under 02.07B Accessibility Standard in FDM Part 1/[Sec 02 Codes and Regulations.pdf](#).

C. WATER COOLERS WITH FACTORY INSTALLED GLASS FILLER / FILTER OPTION

1. To encourage use of refillable water containers with high quality water instead of using purchased bottled water, specify water coolers near main building entrances with glass filler / filter option.
 - a. On remaining floors, specify one water cooler per floor with a glass filler / filter option.
2. Specify the factory installed option that includes a push lever gooseneck style glass filler and activated charcoal water filter offered by Elkay and Halsey Taylor or equivalent option approved by Owner.
 - a. For specifications of the option offered by Elkay, see <http://igate.northernplumbing.com/specsheets/elkay/lk1110.pdf> and <http://www.freshwatersystems.com/products/specifications/51299C.pdf>.
 - b. For specifications of the option offered by Halsey Taylor, see <http://www.drinkingfountaindoctor.com/297/pdfs/Universal-Glass-Filler.pdf> and <http://www.freshwatersystems.com/products/specifications/55897c.pdf>.
3. Specify submittals to include operation and maintenance requirements.

22 52 00 FOUNTAIN PLUMBING SYSTEMS

A. GENERAL

1. Specify recirculating type fountains equipped with timers to operate only when needed.
2. Specify that information on cleaning, chemical treatment, and general maintenance is furnished to the Owner.