

Kutztown University

Facilities Project Services

Major Construction Project Design Document Submission Requirements

June 2009

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Goals and Objectives

The intent of this document is to identify the information, and level of design detail, required in the design documents submitted by the design professional at various stages during a major construction project at Kutztown University.

Overview

Kutztown University will be a very active participant in the design development and review process. The Facilities Project Services (FPS) department shall assign a project manager (PM) who will act as the central point of contact on behalf of the university. Upon receipt of design review submissions, the KU PM will check to see if the submissions conform to the requirements of this document; if they do then they will be distributed for review, if not the documents will be rejected and returned to the design professional.

If the design submission is deemed complete and comprehensive, the KU PM will then distribute copies to the following areas for review:

- Director Facilities Project Services
- Assistant VP for Facilities and Construction
- Director of Facilities Business and Campus Services (Lock Shop, Custodial, Grounds)
- Director of Facilities Maintenance and Energy Services
- Director of Environmental Health and Safety
- University Architect
- Kutztown University Public Safety
- Kutztown University Information Technology
- Affected KU User Group(s)

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KU Design Guidelines

Review comments will be sent to the KU PM and they will consolidate them and forward to the design professional.

Kutztown University maintains a document referred to as the “*KU Design Guidelines*.” The purpose of the KU Design Guidelines is to define and identify specific design criteria, methods, materials, etc. that are preferred, in some cases mandated, by the university. The design professional shall be provided a copy of the KU Design Guidelines and KU expects the information therein to be incorporated into the project.

Preliminary (15%) Design Submission

The Preliminary Design submission will be the first submission the design professional makes to KU following the kickoff meeting, initial user interviews, receipt of the KU Design Guidelines, review of applicable codes, etc. The intent of this submission is to insure both KU and the design professional are “on the same page” so that a solid foundation is put in place upon which the project design will be based.

Each copy of the **Preliminary Design** submission shall include:

1. A Basis of Design Document detailing:
 - a. A list of applicable building codes and industry standards that the design professional proposes to follow as part of the design.
 - b. A design narrative summarizing the design professional’s understanding of the major design program requirements as identified by codes, interviews, industry standards, KU Design Guideline requirements, municipal & state authority requirements, etc. At a minimum this narrative shall address the following

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programmatic areas: site, architectural, structural, mechanical, plumbing, electrical, ADA compliance, and specialty systems

2. Information describing required submissions and compliance timelines regarding:
 - a. Zoning Application and Land Development review by Maxatawny Township.
 - b. Storm water concerns and review process with Maxatawny Township.
 - c. NPDES submission and approval by Berks County Conservation District (BCCD).
 - d. Submission and approval by Pennsylvania Department of Labor and Industry.
3. Updated design schedule for the project.
4. Project commissioning plan if applicable.
5. LEED compliance plan if applicable.
6. Site Plan(s), at a minimum, shall indicate:
 - a. Existing site conditions (survey)
 - b. Proposed facility placement
 - c. Property lines
 - d. Zoning restrictions
 - e. Project boundaries
 - f. Existing topography
 - g. Existing Utilities
7. Floor Plans:
 - a. Floor plans shall generally be 1/8" scale.
 - b. Show existing floor plans, if applicable.
 - c. New floor plans should indicate gross department areas, adjacencies with proposed square footage indicated.
 - d. New floor plans should indicate gross support areas (Machine rooms, electric closets, custodial support, IT closets, etc.) with proposed square footage indicated.
 - e. New floor plans should indicate common and circulation areas (Corridors, elevators, storage, vestibules, etc.) with proposed square footage indicated.

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Schematic (35%) Design Submission

Note that each subsequent submittal builds upon the previous submittal. As such all information regarding drawings and specifications that was previously submitted should be included in this submittal. All drawings submitted shall be at final scale.

Each copy of the **Schematic Design** submission shall include:

1. A copy of the consolidated design review comments from the previous phase(s) including the design professional's explanation as to how each one was resolved.
2. An updated project design schedule.
3. A list of design and performance parameters that the design professional has followed, or is proposing, in the design of building systems. This information shall include the design intent and expectations of operating systems. These systems shall include, but not be limited to:
 - a. HVAC operation and controls.
 - b. Electrical power and distribution.
 - c. Fire alarm system.
 - d. Fire Sprinkler system.
 - e. Plumbing system.
 - f. Lighting controls.
 - g. Exterior door access control (card readers, ADA, etc.)
 - h. ADA Accessibility
 - i. Security systems
 - j. Data Systems
 - k. Telephone systems
 - l. Acoustical treatment and noise control.
 - m. Any other specialty systems applicable to the project.
4. Site plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. All required demolition.

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- c. Contractor staging areas.
 - d. Proposed site construction fencing and access points.
 - e. E&S controls.
 - f. Proposed topographical contours and storm water controls.
 - g. Proposed site utility connection locations.
 - h. Size, shape, form, and location of all major site elements.
 - i. Proposed circulation routes through the site. Vehicular, service, pedestrian (including ADA) shall be shown.
 - j. Proposed site landscape and planting plan.
 - k. Proposed cross-section details for paving and concrete roads, walkways, parking lots, etc.
5. Floor plans, at a minimum, shall indicate:
- a. Final scale.
 - b. Basic scheme and relationships of the various departments or functions.
 - c. Rooms, intended uses, and sizes.
 - d. Proposed room numbering. Note: Drawings must indicate final KU numbering methodology NOT construction room numbering.
 - e. Relationship of departments/rooms to circulation routes, entrances/exits, elevators, restrooms, and other common areas.
 - f. Identification of space allocated for building support equipment and major support functions. This includes: mechanical equipment, electrical equipment, fire protection, plumbing, telephone/data equipment, storage, and custodial closets.
6. Elevations/sections, at a minimum, shall indicate:
- a. Character of the project and building massing.
 - b. Proposed exterior envelope construction materials with samples of same.
7. Outline Specification
- a. Provide a list of proposed types of materials, construction methods, and acceptable manufacturers for all site, structural and architectural elements.
 - b. Provide a list of proposed mechanical, electrical, plumbing, and fire protection systems and acceptable manufacturers.
 - c. Note if anything proposed in a or b above is not in compliance with the KU Design Guidelines and why.

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8. Cost Estimate

Provide a detailed construction cost estimate (opinion of probable cost) broken down into GC, HC, PC, & EC components.

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Design Development (65%) Submission

Note that each subsequent submittal builds upon the previous submittal. As such all information regarding drawings and specifications that was previously submitted should be included in this submittal. All drawings submitted shall be at final scale.

Each copy of the **Design Development** submission shall include:

1. A copy of the consolidated design review comments from the previous phase(s) including the design professional's explanation as to how each one was resolved.
2. An updated project design schedule.
3. A copy of the proposed FFE package with catalog cuts and cost estimate.
4. A proposed full interior finishes palette indicating two separate, complete, and comprehensive options for interior finishes, colors, and fabrics for the project.
5. Site plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. All existing and new topographical contours and storm water controls. Site survey is complete at this stage. All storm water calculations shall be complete.
 - c. All site utility connections, paths, materials locations, metering, etc.
 - d. Size, shape, form, and location of all site elements.
 - e. Final location of all circulation routes through the site. Vehicular (including emergency vehicle access), service, pedestrian (including ADA) shall be shown.
 - f. Final site landscape and planting plan with completed keys/legends.
 - g. All site accessories, e.g. bollards, benches, bike racks, hand rails, trash containers, etc.
 - h. All cross-section details for paving and concrete roads, walkways, parking lots, etc.
 - i. All elevation profiles and invert elevations.
 - j. All curbing and curbing cross-section details.
 - k. All parking with counts by type.
 - l. All site lighting with lighting levels indicated in foot-candles.

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6. Structural plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. A 99% complete design with dimensions and notes that have been coordinated with other disciplines.
 - c. All required details, sections, etc.
7. Architectural plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. Final location of all rooms, their intended uses, and sizes.
 - c. All circulation routes, entrances/exits, elevators, restrooms, and other common areas.
 - d. All emergency egress routes and Life Safety elements.
 - e. Stairs located and dimensioned.
 - f. All major architectural elements, e.g. marker boards, AV screens, podiums, stages, FFE locations (including owner furnished).
 - g. All major ADA compliance components.
 - h. All space allocated for building support equipment and major support functions. This includes: mechanical equipment, electrical equipment, fire protection, plumbing, telephone/data equipment, storage, and custodial closets.
 - i. Complete Building and wall sections.
 - j. Complete Building elevations.
 - k. Roof plan and materials.
 - l. Proposed door, frame and hardware schedule.
 - m. Proposed room signage schedule.
 - n. Proposed room finish schedule.
 - o. Reflected ceiling plan indicating location of light fixtures, HVAC diffusers, Fire Alarm devices, sprinkler heads, and ceiling mounted FFE.
8. HVAC plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. Locations of all equipment with dimensions and maintenance clearances shown.
 - c. HVAC equipment schedules with electrical requirements shown and coordinated with electrical drawings.
 - d. Main duct and piping runs sized and indicated in shafts/passageways.
 - e. Location and size of all outside air intakes and exhausts.

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- f. Major piping and ductwork details (elevations, isometrics) in mechanical equipment rooms shall be at least 50% complete.
9. Plumbing plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. Locations of all equipment/fixtures with dimensions and maintenance clearances shown.
 - c. Main piping runs sized and indicated in shafts/passageways.
 - d. Plumbing equipment schedules with electrical requirements shown and coordinated with electrical drawings.
 - e. Major piping and details (elevations, isometrics) shall be at least 50% complete.
10. Fire Protection plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. Locations of all equipment/fixtures with dimensions and maintenance clearances shown.
 - c. Main piping runs sized and indicated in shafts/passageways.
 - d. Location of sprinkler heads.
 - e. Fire Protection equipment schedules with electrical requirements shown and coordinated with electrical drawings.
11. Electrical plans, at a minimum, shall indicate:
 - a. Final scale.
 - b. Locations of all electrical equipment/fixtures with dimensions and maintenance clearances shown.
 - c. Location of all lighting fixtures.
 - d. Main raceways sized and indicated in shafts/passageways.
 - e. All power panel schedules shall be shown with infill information at last 50% complete.
 - f. Complete one-line power distribution diagram.
 - g. Power circuiting and indication of outlet locations shall be at least 50% complete.
 - h. The location and name of all distribution panels.
12. Signal/TeleData plans, at a minimum, shall indicate:
 - a. Final scale.

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- b. Locations of all Signal/TeleData equipment and panels with dimensions and maintenance clearances shown.
- c. Main raceways sized and indicated in shafts/passageways.
- d. Locations and types of all Fire Alarm devices.
- e. Locations and types of all teledata outlets.

13. Specification

- a. Shall be in sufficient detail as to provide pertinent information such that when reviewed in concert with the minimum design requirements listed in this section, allow the project design intent to be confirmed.
- b. Shall include a preliminary submission of the required KU Front End Specification documents.

14. Cost Estimate

Provide a detailed construction cost estimate (opinion of probable cost) broken down into GC, HC, PC, & EC components. Shall include FFE and other specialty cost estimates as appropriate.

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Pre-Final Design Submission

The Pre-Final Design submission shall be the design professional's 100% complete submission for final review and comment by Kutztown University.

Each copy of the **Pre-Final Design** submission shall include:

1. A copy of the consolidated design review comments from the previous phase(s) including the design professional's explanation as to how each one was resolved.
2. A copy of the proposed FFE package with catalog cuts and cost estimate.
3. A final interior finishes palette indicating two separate, complete, and comprehensive options for interior finishes, colors, and fabrics for the project.
4. A complete set of construction plans with all notes, details, elevations, sections, schedules, legends, etc. fully complete.
5. A full and complete set of specifications including the Kutztown University front end specifications and all required bidding/RFP documents.
6. A complete and detailed construction cost estimate for the project.

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Construction Bid/RFP Documents

The Construction Bid/RFP documents shall incorporate all final KU comments received from the Pre-Final document review and represent a “bid ready” set of documents.

Each copy of the **Bid/RFP documents** shall include:

1. A final copy of the consolidated design review comments for the projects with all identified issues addressed.
2. A final bid copy of the FFE package and estimate if different from the Pre-Final submission.
3. A complete set of construction plans marked “Issued for Bid”
4. A complete set of specifications including the Kutztown University front end specifications and all required bidding/RFP documents marked “Issued for Bid”

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Issued for Construction Documents

Once bids/proposals have been received, the design professional will incorporate all addenda information into a final set of drawings and specifications labeled as **Issued for Construction** documents.

The Issued for Construction documents shall be issued as follows:

1. One set to each prime contractors
2. Two set to the owners contracted construction manager, if one is used.
3. One set to the owners Commissioning Agent, if one is used.
4. One set for each of the following KU representatives:
 - a. Director Facilities Project Services
 - b. Assistant VP for Facilities and Construction
 - c. Director of Facilities Business and Campus Services (Lock Shop, Custodial, Grounds)
 - d. Director of Facilities Maintenance and Energy Services
 - e. Director of Environmental Health and Safety
 - f. University Architect
 - g. Kutztown University Public Safety
 - h. Kutztown University Information Technology
 - i. Affected KU User Group(s)
5. An electronic copy compatible with AutoCAD 2007 to Facilities Project Services.

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“As-Built”

Documents

Upon completion of the project, all prime contractors will provide “red-line as-built” drawings to the design professional. The design professional will then electronically incorporate the as-built conditions into the project Issued for Construction documents creating an official **“As-Built” set of drawings for the project**. The design professional will issued the following copies of the “as-Built” drawings to Facilities Project Services:

1. Two full size hard copy sets.
2. One electronic set compatible with AutoCAD 2007.