Design Criteria

General Design Requirements

The University of Notre Dame campus is nationally recognized for its beauty and character. The design of new buildings, additions to existing buildings, and significant renovations present the opportunity to enhance the campus. These facilities should be designed to balance functionalism, sustainability, aesthetics, serviceability, initial cost and cost of operation. Recognizing the 171 year history of the campus, buildings materials and systems should be selected for maximum longevity and minimum maintenance, i.e., the basic structure and shell of most buildings should be sufficient to last at least 100 years, with adequate routine maintenance and systems replacements.

Each new capital project shall be evaluated for LEED certification, including an initial review of the latest issue of the LEED scorecard.

Each new capital project and building renovation project shall be designed in full compliance with the latest edition of the Americans with Disabilities Act Accessibility Guidelines (ADAAG)

The University has the final judgment on aesthetic issues and design solutions.

Site Design

It is expected that design solutions for all projects, which potentially alter the appearance of a building, or grounds, will be consistent with the campus context and will enhance the campus environment. Design specifications will be strictly adhered to by all parties to ensure maintainability of landscaped environments. The University of Notre Dame will supply and review with the consultant a copy of the University's Campus Plan to ensure that the proposed solution is consistent with the adopted overall campus planning objectives, including use of utilities, vehicular and pedestrian circulation patterns, land use objectives, open space objectives, landscaping, axis and terminus points, and other campus planning considerations referenced in the University's Campus Plan and Tenets of Planning.

The Seven Tenets of Planning are:

1. Catholic Heritage and Sacramental Vision
2. The Campus as Home and Academy
3. Stewardship of the Natural Environment
4. Stewardship of the Built Environment and Architectural Systems, Styles and Materials
5. Axes, Focal Points, Quadrangles and Other Exterior Spaces
6. The Ceremonial Focus of Notre Dame Avenue and other Approaches to Campus
7. Separation of Pedestrian and Vehicular Traffic

For more information on the Campus Master Plan, access the Executive Summary 2008 Update at:
http://www.nd.edu/~univarch/documents/campusmasterplan2008.pdf

Site planning shall consider provisions for utility routes and building service, pedestrian access, fire department equipment access, program required parking, accessible campus routes, parking for the disabled, and bicycle parking.

Circulation Patterns:

Loading and parking areas shall be kept small and discrete. Staff and faculty parking are not expected to be

accommodated on each building site. Service maintenance and other parking requirements and locations will be determined with the University during the programming phase.

Trash enclosures shall be screened with brick walls or landscaping. Alternatively, vinyl coated chain link fencing and privacy screening may be utilized.

Bicycle parking is required to be located near entrances of most buildings. The location and quantity of parking required will be determined by the University. Landscape screening shall be incorporated into the design.

All new construction shall be in full compliance with ADA requirements, including on grade, step-less entrances. Refer to the latest issue of the ADA Accessibility Guidelines and local codes in effect.

Plan for snow plows on all sidewalks. No obstacles that impede snow removal should be located in pedestrian walkways. All bollards should be removable.

Landscape Planting and Irrigation:

It is the responsibility of the consulting landscape architect, if any, to develop a planting and irrigation concept in concert with the building and site design, after consulting with the Campus Plan, its Landscape Recommendations, and Landscape Services representatives. Refer to Appendix 21.

The University may furnish plants and trees. The Architect/Engineer shall indicate on the construction documents sleeves under walks and drives for this system in order to allow installation in all site areas. Sleeves shall be 6″ PVC pipe, placed no more than 6″ below the bottom of the hardscape surface, and extend 6″ – 12″ beyond the edge of the hardscape. Location of the sleeves must be marked in the paving with a stamp available from the University.

Irrigation systems shall have an approved cross connection control device, the location of which shall be approved by the Project Manager and Utilities and Maintenance Department. Irrigation supply line shall be 2″, exiting the building line with a 12″ stub, with a threaded cap covering the end of the pipe. A 120V GFI outlet on a dedicated circuit shall be provided for the irrigation controller, located as close to the 2″ supply line as possible.

If the project site requires the removal of existing trees or the use of University stockpile material, the contractor shall submit a Tree Removal Permit in accordance with Appendix 8, and Soil & Landscape Material Permit in accordance with Appendix 9.

Site Lighting:

Coordinate the conceptual lighting plan with the Facilities Design and Operations Project Manager, Utilities and Maintenance Department, and Office of Campus Safety. The University typically supplies and installs bases, light poles and light pole fixtures through the University's Utilities and Maintenance Department. The Utilities and Maintenance Department will provide the lighting control design and lighting circuiting and consult with the Architects'/Engineers' to determine the final layout.

Site lighting is primarily achieved through the use of light poles, and light fixtures integrated with the building or site architectural features, such as seating walls. Bollard lights are not allowed. Up lighting is only permitted where specifically requested by the University. The campus standard exterior lamp type is LED. Lights are spaced at approximately 80 foot centers. Light pole bases are typically located 3'-0" from the edge of paving. See Appendix 13 for light pole base detail.

Utilities

General Civil Requirements:

Base Map Information: The University has a series of AutoCAD generated base maps available. These base maps include planemetric, topographic, and underground utility information. While these base maps are kept up to date their detail is not always sufficient to reflect accurate existing conditions. The base maps are sufficient to use as existing conditions for the Schematic Design Phase of a project. These base maps are to be used in concert with a ground survey of the

immediate area of the new construction. It is crucial that all new survey information and construction document information tie into the existing datum.

Topographic Survey Requirements: A topographic survey shall be obtained to expand on the base map information that will be used for the civil Construction Documents. The architect/engineer shall along with the Project Manager, determine the limits of the survey and the information that is required to enhance the base maps. The following is a list of steps that shall be taken by the Land Surveyor to produce a certified survey:

1. Obtain an AutoCAD file on disk with the base maps of the area in question from the University.

2. Prepare a marked up print of the area with all of the required information for the survey.

3. Include a copy of the horizontal control point map.

4. Identification of the location, description, and elevation of the nearest bench mark. The list of bench marks can be found in the appendix.

5. A list of suggested layer names and requirements shall be included in the packet.

6. A cover letter to be attached to the packet. The cover letter shall describe what is included in the packet and also state that the surveyor is to provide one disk of the survey in AutoCAD and a black line reproducible of the drawings that is contained on the disk. The survey original shall be certified by a registered land surveyor in the state of Indiana.

   The surveyor shall arrange to meet with the Utilities and Maintenance Department and other service providers to discuss the survey extent and to ensure marking of existing underground utilities.

   The surveyor shall submit a Utility Locate Request to the Utilities and Maintenance Department prior to commencing survey activities. See Appendix 10.

7. All of the above information shall be sent to the Project Manager who shall then send it to registered land surveyors requesting a proposal.

8. The surveyor hired to do the work shall send the completed survey to the Project Manager who shall forward it to the architect/engineer.

Utility Locate Request:

The Contractor shall submit a Utility Locate Request to the Utilities and Maintenance Department prior to any earth moving related activities. Permits may take up to 5 working days to obtain. See Appendix 10.

The Contractor shall also submit a Utility Excavation Permit to the Utilities and Maintenance Department prior to any utility excavation work. Permits may take up to 5 working days to obtain. See Appendix 10.

Utility Installation, Backfill and Compaction: Refer to Section 2.

Demolition:

The site design shall be sensitive to existing trees and other landscaping. No tree is to be removed unless authorized in writing by the University. If a tree or bush comes into conflict with new construction, the designer shall, together with the University, make a determination if the removal of the tree or bush is warranted. A Tree Removal Form must be executed during the construction phase. See Appendix 8.

All existing utilities that become abandoned shall be removed. No abandoned utilities are to remain unless specifically approved by the University's Utilities and Maintenance Department.

Erosion Control:

1. A separate erosion control plan must be included in the construction documents if the disturbed area of the site is one acre or greater. This plan must comply with the requirements of the Indiana Department of Environmental Management (IDEM) Rule 5 and Rule 13, the St. Joseph County Soil and Water Conservation District, and Utilities and Maintenance Department (MS4 operator) requirements. The A/E, working in conjunction with the Utilities and Maintenance Department and following the University's procedures will prepare the permit application documents necessary to obtain a construction permit. Further details can be found on the Utilities and Maintenance Department website http://utilities.nd.edu/.

2. The use of hay bales for erosion control purposes shall not be permitted.

Sidewalks and Walkways:

1. See Section 2 for materials, construction methods, and finishes for sidewalks and walkways.

2. Grading of sidewalks shall comply with all applicable codes. Ponding water on sidewalks is not permissible, and shall be corrected at no cost to the University.

3. Provide adequate irrigation sleeves under sidewalks, drives, curbs, etc.

Streets and Drives:

1. See Section 2 for materials, construction methods, and finishes for streets and drives.

2. Pavement generally shall be asphalt. Refer to the Campus Plan for specific recommendations. See Section 2 for minimum section requirements for pavement surfaces.

3. The use of pavers in driveways should be limited and used only when the University has given their consent. For more information on pavers see Section 2.

4. The street and drive design should always be reviewed with the University's Office of Campus Safety in the early stages of the design. The Office of Campus Safety will have input on routes that the fire fighting equipment will use and the physical requirements of their equipment.

5. Exterior signage for buildings, streets and drives is the responsibility of the University and is typically not included in the construction documents. Architect/Engineer to verify with the University during design.

6. The street or drive is typically crowned at the center with a two percent cross slope from the center line to the face of curb. The minimum longitudinal slope is one percent. The maximum slope should be in accordance with applicable local requirements. The designer shall examine the break over angles when grades are over four percent.

Parking Lots:

1. Typical parking stall dimensions are as follows:

   - Standard parking stalls are to be 9 feet wide by 18 feet long with a drive aisle of 24 feet, unless otherwise directed by the University.

   - Parking for the disabled: Comply with all local, state, and ADA guidelines. The location of these stalls will also be as directed by the University.

2. The University shall determine the desired number of parking stalls.

3. The grading of the parking lot in the area of the spaces for the disabled and the accessible route shall comply with all ADA guidelines. The grading in the other areas of the parking lots shall be a minimum of one percent and a maximum of five percent.

4. The use of precast wheel stops for any application is not permitted unless approved by the University.

5. For specific requirements for straight concrete curb, paving, etc. see Section 2.

Service Access:

1. The architect/engineer shall provide the University with a number of options for servicing the new building and these options will be reviewed by the University. All service accesses are to be reviewed and approved by the University during the schematic design phase of the project.

2. The options should include the provisions for the following services:

   - Trash pick-up
   - Security monitoring equipment
   - Deliveries to the building. The architect/engineer should determine what type of vehicles the University expects will serve the building.

3. Service drives shall be constructed of asphalt. Refer to the Campus Plan for specific recommendations.

Building Design

In regard to the aesthetic design of the building, depending upon building location, the building massing and scale shall be consistent with the collegiate gothic character of the campus. Story height should typically be no taller than four floors unless the Administration identifies a rationale for making the building a campus terminus or symbol such as the Hesburgh Library.

Building massing and scale should be addressed at a human scale by including appropriate detail and also at an urban scale by controlling overall building height. Massing is to be compatible with neighboring structures and spaces. Proportions of components such as windows and projections should typically be more vertical than horizontal, if possible, to reinforce the gothic character of campus. The building's rhythm of structure or window pattern, etc. should be used as an organizing element linking old and new buildings. Major datum lines, such as cornices, roof edges, or gable elements, should also be used as organizational elements to relate to other buildings within a quadrangle.

Textures, colors, and materials should all remain consistent with the palette of materials and colors already present on campus. Brick, limestone, cast stone, slate, and copper shall continue to be the dominant exterior materials used. Building design should be sympathetic to adjacent architecture without being completely referential or mocking.

Applicable building codes are to be considered as minimum requirements. The architect/engineer shall also consider life cycle costs, utility costs, and adaptability/flexibility, should the building use change over its lifetime. The potential horizontal or vertical expansion should be discussed. The University's insurer may provide design input which supersedes code minimums. For example, generally all buildings are fully sprinklered, and of non-combustible construction and provided with fire alarm and smoke detection system in every occupiable space (including corridors, study rooms, lounges, etc.), regardless of code requirements based upon occupancy types.

Service entrances to buildings and the internal circulation to any service elevator shall be planned to minimize visibility and maximize convenience. Fire fighter access location, usually the same service entrance, should be determined with the Office of Campus Safety. This should also be the location for fire alarm annunciator panel, any low voltage lighting control systems, sprinkler flow annunciators, and the service elevator. Exposed rooftop mechanical equipment shall be avoided. Gas meters, transformers, generators, and all other mechanical and electrical equipment shall not be visible from ground-level view, unless otherwise approved by the University.

Means of equipment egress from mechanical and electrical spaces shall be designed to permit removal of major equipment intact. Spaces should be designed to permit full and unobstructed access to all equipment. Particular care shall be taken to ensure main electrical service equipment can be replaced due to failure, considering the potential loss of facility power.

Materials and construction systems should be selected for minimum maintenance and maximum performance.

Construction materials shall be permanent and commercial quality, not residential quality. Wood siding, plywood siding, synthetic stucco systems are not acceptable. Metal stud back-up for brick systems are acceptable at certain conditions such as one or two story buildings. Hollow core wood doors are not acceptable. Sealed concrete floors in public spaces are not generally acceptable. Hardware and carpeting shall be commercial grade. In general, the University will only accept proven construction materials and methods. New technologies should be analyzed against the risk of failure. Products and methods which are proven to be readily available and maintainable in the South Bend area are preferred.

End of Design Criteria