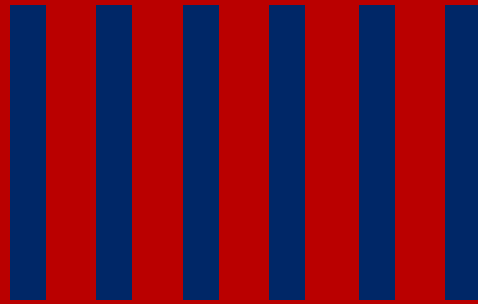


INSTRUCTIONS
TO
DESIGN
PROFESSIONALS



FIFTH EDITION • 2017

THE UNIVERSITY OF
MISSISSIPPI
OXFORD CAMPUS



PREPARED BY

DEPARTMENT OF
FACILITIES
PLANNING

THE UNIVERSITY OF MISSISSIPPI
UNIVERSITY, MISSISSIPPI

Section 1

Determination of Authority

Section 1: Determination of Authority

There are two main sources of authority for planning, design and construction projects on the campus of The University of Mississippi.

Mississippi Bureau of Building, Grounds and Real Property Management

If funding is provided through the State Legislature, the project is administered through the Mississippi Bureau of Building, Grounds and Real Property Management. The University of Mississippi's Department of Facilities Planning will adhere to all of the Bureau's regulations and procedures. The Bureau of Buildings will handle bidding and administer the contracts.

The University of Mississippi

If funding is provided through sources other than the State Legislature, then the Project shall be solely administered through the University's Department of Facilities Planning.

The ultimate users of the new building or renovations (otherwise referred to as the Work) are generally members of the University of Mississippi. The Design Professional shall communicate directly to the Department of Facilities Planning. There shall be **no exceptions** to this rule.

The University Administrator charged as the liaison between the Design Professionals and the University is the Vice Chancellor for Administration and Finance. The department whose primary concern is the handling of the details of design and construction is:

The Department of Facilities Planning

Director and University Architect

Telephone: 662-915-6767

Fax: 662-915-6788

Other contacts within the University include:

The Department of Facilities Planning

Assigned Project Manager

Telephone: 662-915-6767

The Department of Facilities Management

Director

Telephone: 662-915-1819

Associate Director

Telephone: 662-915-1843

Telecommunications Center

Director

Telephone: 662-915-5210

Procurement Services

Director

Telephone: 662-915-7448

Landscape Services

Director

Telephone 662-915-1846

Contractual Services

Director or Assistant Director

Telephone 662-915-7445

In the event that the instructions, contained herein, prove to be in conflict with any publication issued by the Board of Trustees of the Instructions of Higher Learning or by the Mississippi Bureau of Building, Grounds and Real Property Management, the instructions contained in the publications of these two higher authorities shall take precedence.

Section 2: Information Provided by and Responsibilities of The University of Mississippi

Section 2: Information Furnished by the University

A. Maps, Plats, and Plans of Existing Buildings

Various maps and plats of the campus are on file in the Department of Facilities Planning. Digital copies can be made for the Design Professional, on an as needed basis, provided that the Design Professional provides either a disk, or a flash drive, or permission to upload the files to the Professional's FTP site. AutoCAD generated drawings and raster scans of the maps are also available. All persons requesting drawings and files must complete the "Drawing Request Form" located on the Department of Facilities Planning website.

The University assumes no responsibility for the completeness or the correctness of the information on file. The Design Professional shall verify the accuracy, quality, and completion of any map used for projects. Drawings produced by the Design Professional shall be submitted to the Department of Facilities Planning in a digital format using a program acceptable to the Department.

B. Spatial and Functional Design Program

The spatial and functional design program shall be provided by the University to the design professional for projects of a limited scope of work. Larger or complex projects may require the University to request the design professional to provide this service.

C. Budget Review and Maintenance

The Department of Facilities Planning shall establish the Project Budget Worksheet. The detailed construction budget submitted by the Design Professional with each Design Phase will be used to develop the Project Budget Worksheet. The Department of Facilities Planning will update and maintain the Project Budget Worksheet with each Design Phase Submittal and throughout construction.

D. Approvals

Approvals may be required from several authorities depending upon the scope of the project. The University shall (1) obtain approvals from all interested agencies, and (2) shall provide the Design Professionals with written notification to proceed to the next phase of design. Authorization to proceed, from the University, will be indicative of approval of prior work, but this shall not relieve the Design Professional from either the responsibility of errors or omissions or from the necessity of making modifications to prior work should such revisions be required. Approvals **must** be obtained at **ALL** Design and Construction Phases.

E. Reviews During Construction

Representatives of the University will review the progress of the work. Such reviews shall be considered as supporting those conducted by the Design Professional and are not extensive in nature in order to determine compliance of the work with the Contract Documents.

F. Punch Lists

Representatives of the University will accompany the Design Professional on a visit to the work site to establish the Punch List.

G. Pay Applications

The University shall process the Design Professional's Fee Invoices, the General Contractor's Application for Payment, any other fee statements, and all project related correspondence.

Section 3:

General Responsibilities of The Design Professional

SECTION 3: General Responsibilities of the Design Professional

A. Review and Understanding of Instructions To Design Professionals and Contractors

The University of Mississippi requires all Design Professionals working on the University of Mississippi's property to read the Instructions To Design Professionals and Contractors manual. The Design Professional must recognize and understand the requirements of both the Design Professional and the Contractor. The Manual is to be included in the requirements of the Standard Form of Agreement Between Owner and Architect.

B. Multiple Prime Design Professionals – Point of Contact

The University of Mississippi will ask the Bureau of Building and/or the Board of Trustees to designate a single architectural and engineering firm on each project. Occasionally two professional firms are assigned jointly to a project. In such a case, the University will designate one firm of the professional association to act as the contact firm. The contact will represent the association as if the association were a unity in all matters pertaining to the project.

C. Contract with Architect

For University funded projects, the University's contract with the Design Professional varies from the contract used by the Bureau of Building. The University uses the standard AIA documents and contracts, unless a prior written agreement has been made between the parties and differs from the Bureau's contracts in regards to various items, including but not limited to the levels of approval, and methods of payment. All questions regarding the Design Professional's contract with the University, shall be directed to the Director of Facilities Planning. The University shall follow the Bureau of Building's fee and payment structure.

D. Codes, Standards, Regulatory Agencies, and Accrediting Organizations

All design and construction work performed for the University of Mississippi shall conform to the current editions of the below listed codes as the codes apply to specific portions of the work.

The University of Mississippi may, in conjunction with the Bureau of Building and the Institutions of Higher Learning, waive code requirements in specific instances and establish its own parameters. In such an event, written directions will be issued, which directions shall be applicable to the specific case in point and to that case only.

The Director of Facilities Planning is the Building Official, under whose direction all codes, applicable to design and construction at The University of Mississippi are administered.

The Design Professional shall verify with the Facilities Planning staff as to which edition of the following Building Codes shall be used for the Project.

- International Building Code
- International Fire Code
- International Mechanical Code
- International Plumbing Code
- International Gas Code
- National Electric Code

As they may apply, recognized Standards shall be met; these include in part publications by:

- National Fire Protection Association (NFPA)
- American Society of Mechanical Engineers (ASME)
- American Gas Association (AGA)
- American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
- Underwriters Laboratory (UL)
- Americans with Disabilities Act Standards for Accessible Design (ADA)
- National Electric Safety Code (NESC)
- National Electrical Manufacturer's Association (NEMA)
- American Standards Association (ASA)

The requirements of State and Federal regulatory agencies shall be met when applicable. Approvals as necessary shall be obtained by the Design Professionals.

The Final Construction Documents for every project must be sent to the:

- Mississippi Insurance Department
- State Fire Marshal's Office

Other regulatory agencies include, but are not limited to the following:

- Mississippi Department of Archives and History (MDAH)
- Mississippi Insurance Department – State Fire Marshal's Office
- Mississippi State Board of Health
- Mississippi Highway Department (M.D.O.T.)
- Mississippi Department of Environmental Quality (MDEQ)

The Professional, on behalf of the University, shall submit a formal Notice of Intent with supporting documents to the MDAH for all renovation projects and major modifications to existing buildings.

The Mississippi Department of Environmental Quality's determination of construction storm water permit requirements must be made early in the planning phase to prevent delays.

The requirements of accrediting organizations, such as the Association for Assessment and Accreditation of Laboratory Animal Care International, shall be made on a project by project basis, in consultation with the Department of Facilities Planning.

E. Meetings

The Professional shall schedule all meetings through the Department of Facilities Planning. The Design Professional shall be required to attend and conduct at least one meeting for each Design Phase. Additional meetings may be required as determined by the Department of Facilities Planning and as required in each Design Phase.

The Design Professional shall derive and provide for all attendees a meeting agenda and meeting attendance sign-up sheet. Recommendations and minimum templates are provided in the Forms and Miscellaneous Documents Section of this manual. The Design Professional shall be required to provide written minutes of all meetings to all participants of the meetings within seven (7) days of the meeting.

All meetings, unless otherwise specifically designated by the University, shall be held in the office of the Department of Facilities Planning at the University. These offices are located in the Facilities Management Building at 700 Hathorn Road, University, Mississippi.

F. Documentation Requirements

As part of the deliverables for each of the major phases of design, the Design Professional shall submit the “Design Review Package Checklist” document to the Department of Facilities Planning. The Design Professional shall indicate, on the “Design Review Package Checklist”, the status of each required item (a check mark is interpreted to mean that an item has been included in the deliverables). The Design Professional shall address any item that is NOT included in the deliverables package.

The University staff shall review the submitted plans and specifications. The Design Professional shall coordinate, with the Facilities Planning staff, as to which version of the IBC to use for the Project. The results of the review shall be provided in writing to the Design Professional. The Design Professional shall respond to the comments in writing. The review submitted by Facilities Planning Staff is not all inclusive and will not be a substitute for the Professionals’ review and responsibility of the Professional to provide a compliant design.

Changes made to the plans and specification, after Final Approval, shall be submitted to the Department of Facilities Planning for review. Written response by the staff to these submittals shall be made only in cases of violations of building codes or obvious non-compliance with laws and regulations.

G. Submissions

Documents requiring approval at all stages shall be submitted as identified within each Design Phase unless otherwise directed.

H. Review Time Allotment

For scheduling the design phase of a project, the Design Professional shall allow 14 calendar days review time for Schematic Design by the University staff, 14 calendar days review time for Design Development by the University staff, and 14 calendar days for the review of Construction Documents by the University staff. Review time shall begin when drawings are received in the Department of Facilities Planning. Plans are reviewed in the order received, and consideration is given to the timeline of each project.

I. Special Investigations

The Department of Facilities Planning strongly believes in producing the most accurate and all-encompassing construction documents. The Design Professional is required to conduct all necessary investigations to accurately identify and document the existing conditions on Campus. This may include, but should not be limited to, destructive demolition, additional testing/monitoring, ground penetrating radar, etc.

The Design Professional must conduct on-site investigations and take accurate records of existing conditions for situations where new construction abuts or connects to existing construction.

J. Bid Alternates

The Design Professional, in consultation with the Department of Facilities Planning, shall identify the Bid Alternates for the project. There shall be no more than five (5) Bid Alternates, unless otherwise approved. All Alternates shall be “additive” alternates and must be awarded in the order in which they are listed in the bid documents. It is recommended that Alternates are only identified by names on drawings. Alternate identification numbers can then be assigned to the Alternates on the Schedule of Alternates in the Specifications Manual and Bid Proposal Form. This reduces the potential contradictions in the documents and reduces changes if Alternates are prioritized differently as the documents progress.

K. Allowances

Allowances are only permitted for the incorporation of HVAC building controls and access controls in very limited situations. The Design Professional, in consultation with the Department of Facilities Planning, shall identify budget amounts for the costs of the required HVAC building controls and access controls if determined to be appropriate. These costs shall be identified as the “Allowance” amounts. The costs of the HVAC building controls and access controls shall be incorporated into the Base Bid Scope of Work via the Allowances determined. The Design Professional must take extreme care in assuring that Allowances are only covered/required in one specifications section so duplication of allowance cost is avoided.

Immediately upon the award of the construction contracts to a successful Bidder, the Design Professionals shall solicit prices from the HVAC Building Controls and Access Controls Vendors that are approved by the University. The Vendor with the lowest and best price for each allowance shall be awarded the contract(s) and assigned to the project contract through the Allowance.

The University prefers that, whenever possible, like manufacturers be selected to provide controls within a facility that is under partial or minor renovations in order to maintain continuity of control and interconnectivity within the existing building system.

L. Payments to the Professional

Unless otherwise determined by the Department of Facilities Planning, fees to the Professional shall be determined and calculated using Article 6 of the State of Mississippi Bureau of Building, Grounds and Real Property Management’s Manual. Payments to the Professional shall be made as indicated below:

- 1. Programming and Schematic Design Phase 10%.** Upon completion of the Programming and Schematic Design Phase, the Design Professional may invoice the Owner for the sum equal to ten percent (10%) of the basic fee computed upon the approved estimated construction cost.
- 2. Design Development Phase 20%.** Upon completion of the Design Development Phase, the Design Professional may invoice the Owner for the sum equal to twenty percent (20%) of the basic fee computed upon the approved estimated construction cost.
- 3. Construction Documents Phase 30%.** Upon completion of the Construction Documents Phase, the Design Professional may invoice the Owner for the sum equal to thirty percent (30%) of the basic fee computed upon the approved estimated construction cost.

4. The Owner reserves the right to stop the process at this point and if Owner chooses to not execute the Bid Phase, the total professional fee would stop here, at 60%. If upon completion of the Construction Documents Phase the Owner chooses not to execute the Bid Phase, the Design Professional may invoice the Owner for the total sum equal to sixty percent (60%) of the basic fee, less any previous payments, computed upon the approved estimated construction cost.
5. **Bid Phase 15%.** Upon completion of the Bid Phase, the Design Professional may invoice the Owner for the total sum equal to seventy-five percent (75%) of the basic fee, less any previous payments, computed upon the actual Contract award amount. Fee Payments on Alternates not awarded will be considered on a project to project basis and must be negotiated with the Department of Facilities Planning prior to bidding.
6. The Owner reserves the right to stop the process at this point and if Owner chooses to not execute the Construction Phase, the total professional fee would stop here, at 75%. If upon completion of the Bid Phase the Owner chooses not to execute the Construction Phase, the Design Professional may invoice the Owner for the total sum equal to seventy-five percent (75%) of the basic fee, less any previous payments, computed upon the lowest and best Base Bid. Fee Payments on Alternates will be considered on a project to project basis and must be negotiated with the Department of Facilities Planning prior to bidding.
7. **Construction Administration Phase 25%.** The Design Professional shall be compensated a sum equal to twenty-five percent (25%) of the basic fee computed upon the actual Contract amount and will be adjusted as Change Orders are approved. Payment of fees to the Design Professional during the Construction Phase shall be made monthly in proportion to the current percentage requested by the Contractor and approved by the Owner.
8. **Other Payments:**
 - a. **Reimbursables** – Unless otherwise agreed upon, the University shall not compensate the Design Professional for transportation and travel expenses within the State of Mississippi.
 - b. On behalf of the University, and as required by the scope of work, the Design Professional shall obtain prices for asbestos containing materials testing/reports, lead based paint testing/reports, HVAC testing, adjusting and balancing, construction materials testing, etc. The Design Professional may be compensated for obtaining the prices and administering the work as a reimbursable as indicated in the Owner and Architect Agreement.
 - c. **Errors and Omissions** – the Department of Facilities Planning shall determine if Change Orders to the Construction Contract are due to Errors and Omissions in the Construction Documents by the Design Professional. In the event that a Change Order is issued due to Errors and Omissions, the Design Professional shall not be compensated for the fees associated with the additional cost to correct or resolve the Errors and Omissions.

9. Contractor

- a. **Submission of *Application for Payment to the Design Professional*** – Applications for Payment must be submitted with the information identified on the Minimum Breakdown for Application for Payment to the Design Professional identified in Section 6 and must include the University Project Number, Project Name, and issued Purchase Order Number. All Applications for Payment lacking this information will be returned for correction and will not be reviewed for payment.
- b. **Final Payment to the Design Professional** – Final payment to the Design Professional will be held in proportion to the percentage held from the Contractor for the submission of the Project Closeout Documents. Final payment will be submitted to the Design Professional upon the Owner’s receipt of the correct and completed Closeout Documents from the Contractor.

Section 4: Design and Construction Phase Submittal Requirements of The Design Professional

SECTION 4: Design and Construction Phase Submittal Requirements of the Design Professional

Generally, all projects require a minimum of four design phases:

1. Project Initiation and Programming
2. Schematic Design
3. Design Development
4. Construction Documents

The requirements for each phase are described below and are intended to minimize changes in construction documents to accommodate The University of Mississippi requirements. Revised submittals will be required for projects not receiving approval of the initial submittal. Plans, specifications, production schedule, and final cost estimates, for each design phase, shall be detailed and complete.

The Design Professionals are expected to work closely with representatives of Facilities Planning, Landscape Services, Facilities Management, Telecommunications Center, and other University stakeholders in establishing the criteria for the various phases of the planning. The end result of this close cooperation and original thinking will be the basis for a successful project and a well-studied, complete planning strategy.

In the event a conflict should develop between the University and the Design Professional concerning the relation of the requirements to the budget, or concerning the extent of the requirements, or for any other reason, the Design Professional shall document his or her position to the Director of Facilities Planning and the question will be subject to review and arbitration.

The responsibilities of the Design Professionals during the Design and Construction Phases are as follows and as identified in the Design Phase Review Package Checklist:

A. Project Initiation and Programming Phase

1. The Design Professional shall meet with the Department of Facilities Planning to discuss and review the project goals and identify the spatial and functional design program requirements.
2. The spatial and functional design program shall be provided by the University to the design professional for projects of a limited scope of work. Larger or complex projects may require the University to request the design professional to provide this service.
3. The Design Professional's responsibility for satisfying the spatial and functional program is to the Director of Facilities Planning, under whose authority and direction the function of facility planning, design, and construction resides. The Director's responsibility is to the Vice Chancellor for Administration and Finance for The University of Mississippi, and ultimately to higher authorities, the Institutions for Higher Learning, and the Mississippi Bureau of Building, Grounds, and Real Property Management.

4. The program shall contain specific University requirements, including the following:
 - a. Design and relationship requirements
 - b. Title of spaces
 - c. Area of spaces
 - d. Details of spaces, when required
 - e. Interior finishes of spaces, when required
 - f. Type of construction, when required
 - g. Specific mechanical requirements, when required
 - h. Specific electrical requirements, when required
 - i. Specific requirements from the University's Department of Facilities Management
 - j. Specific requirements from the University Telecommunications Center
 - k. Specific requirements for Classroom Technology.
 - l. Specific requirements from the University's Landscaping Services Department
 - m. Specific requirements from Contractual Services.
 - n. Initial overall Project Budget Sheet preparation
 - o. Project Document Production and Construction Schedule.

B. Schematic Design Phase

1. **Schematic Design Review Package List** - The Design Professional shall indicate, on the "Schematic Design Review Package Checklist", the status of each required item (a check mark is interpreted to mean that an item has been included in the deliverables). The Design Professional shall provide a written explanation for the omission of any item in the deliverables package.
2. **Schematic Design Drawings** – One (1) full-size set, one (1) half-size set, and one (1) digital copy of .pdf files of the drawings.
3. **Cost Estimate** – Preliminary construction cost estimate.
4. **Schematic Design Phase Approval** - Upon completion of the Schematic Design Phase, the Design Professional must obtain written approval of the submission prior to beginning the Design Development Phase documents. In addition, the Design Professional shall provide written responses to all comments made at the final review meeting for this Phase. This report shall be submitted, as a requirement, for the Design Professional's pay application for the Schematic Design Phase.
5. **Project Document Production and Construction Schedule** – The Professional shall provide a schedule identifying the completion date of documents for each design phase, major project milestone, review dates, bidding dates, anticipated construction timeframe, etc.

- 6. Space Identification Plan** – Upon approval of the Schematic Design Phase, the Design Professional shall identify all rooms/spaces with names and numbers. A Space Identification Plan shall be submitted to the Department of Facilities Planning for review/approval prior to proceeding to the Design Development Phase. The Plan shall be as follows:
- a. Renovation Plans must consider the numbering/naming of the existing spaces that are left untouched. Close coordination with the Department of Facilities Planning is required. Adjusting numbers of existing spaces will affect the University's data base and scheduling system.
 - b. All building levels shall be noted and identified as First Floor (100's), Second Floor (200's), Third Floor (300's), etc. Basement levels shall be noted as Basement Level (B00's) only if the level is surrounded on all sides by earth and has no ground level entrances or exits [some exceptions may apply]. The term Ground Floor shall not be used. A level shall only be named Mezzanine if it is the lowest balcony area in a theater, auditorium, or lecture hall. Levels with more than one hundred spaces shall be identified with four digits. (e.g., B000's, 1000's, 2000's, 3000's, etc.)
 - c. All spaces accessible from the interior of the building shall be numbered first and then move to spaces interior to the building but accessible only from the exterior. (e.g., mechanical rooms, pump rooms, etc.)
 - d. Initially, rooms/spaces shall be numbered beginning with the Main/Front Entrance and move to each connecting space in a clockwise manner. Each major corridor segment shall be numbered as a primary space that serves other rooms/spaces. For levels above and below the level of main entry, room/space numbering shall begin at the primary access point to that level. For example, if the primary entrance to the Second Floor is through the Elevator Lobby. The Elevator Lobby will be identified as Elevator Lobby 200. Facilities Planning will review the numbering and make necessary edits before DD's begin.
 - e. Exterior Spaces that are covered by roof shall be named with a cardinal direction, space name and 3-digit number starting with "001". Exterior spaces not covered shall be named with cardinal direction and space name only. For example, North Porch 001 (covered) or South Patio (not covered).
 - f. Suites within the building shall be identified with letters. All other rooms/spaces within the Suite shall be identified with numbers and the letter as the prefix. For example, Room A201 will be in Suite A on the Second Floor and is the first space inside the primary entrance. Letters B, E, O, and S shall not be used as a Suite identifier.
 - g. Major rooms/spaces with accessory spaces within them and only accessible through the major room/space shall be identified with letter suffixes (secondary groupings). For example, Storage Room 105A is Storage Room "A", located in Room 105.

- h.** All Stairs, monumental and egress shall be named and numbered as Stair S01, Stair S02, etc. If cardinal directions assist with way-finding, use prefixes for the stair names – Southeast Stair, North Stair, etc. The first stair shall be considered the main stair or the stair closest to the main entrance of the building. Then all other stairs shall be numbered in a clockwise manner. The name and number of the each stair shall be the same on each floor, regardless of level.
- i.** All Elevators and Lifts shall be named and numbered as Elevator E01, Elevator E02, etc. The first elevator shall be considered the main elevator or the elevator closest to the main entrance of the building. Then all other elevators shall be numbered in a clockwise manner. If cardinal directions assist with way-finding, use prefixes for the elevator names – Southeast Elevator, North Elevator, etc. The name and number of each elevator shall be the same on each floor, regardless of level.
- j.** All Restrooms shall be identified as Men’s Restroom, Women’s Restroom, or Restroom (for Unisex Toilets and Gender Inclusive Toilets) and must also be identified with a room number.
- k.** Support rooms shall be named Custodial in lieu of Janitor’s Closet or Housekeeping and must also be identified with a room number.
- l.** Telecommunications Rooms shall be identified as Data and must also be identified with a room number.
- m.** Openings to rooms/spaces shall be numbered to match the room number. If more than one opening serves a room, the openings shall be identified with the number corresponding to the room in which it serves, a decimal and number. For example, two doors serve room Classroom 105. The first door shall be numbered 105.1 and the second door shall be numbered 105.2.
- n.** Coordinate with the Department of Facilities Planning for any situations that should arise that are not accounted for in Space Identification Plan explained above.
- o.** See Section 6 for sample Space Identification Plan.

C. Design Development Phase

Design Development submittals are not required for small projects of limited or specialized scope (such as minor alterations, re-roofing projects, parking lots and re-grading, HVAC or electrical renovations) or projects for which the University's review is for compliance with accessibility standards only. The Design Professional must verify the Design Development submittal requirement with Facilities Planning when establishing the initial Project Document Production and Construction Schedule.

1. **Design Development Review Package List** - the Design Professional shall indicate, on the "Design Development Review Package Checklist", the status of each required item (a check mark is interpreted to mean that an item has been included in the deliverables). The Design Professional shall provide a written explanation for the omission of any item in the deliverables package.
2. **Design Development Drawings** – One (1) full-size set, one (1) half-size set, and one (1) digital copy of .pdf files of the drawings. The Design Professional shall provide, to Facilities Planning, CAD files of the project floor plans, electrical power plans, data/communications plans, security cameras, and access control plans.
3. **Design Development Specifications/Project Manual** – One (1) hard copy and one (1) digital copy of .pdf files of specifications/project manual.
4. **Liquidated Damages** – The Design Professional shall consult with Facilities Planning at this stage to determine the required Liquidated Damages (LD's). Liquidated Damages shall be considered on a Project by Project basis. Liquidated Damages shall be included within the Project and determined based upon the anticipated financial loss incurred by University if the project is delivered later than scheduled.
5. **Energy Model** – The Design Professional, within the scope of the Basic Services Fee, shall provide an Energy Model Report as required by the IHL's Energy Model Guidelines.
6. **Cost Estimate** – Updated construction cost estimate identifying all Alternates and Allowances.
7. **Design Development Phase Approval** - Upon completion of the Design Development Phase, the Design Professional must obtain written approval of the submission prior to beginning the Construction Documents Phase. In addition, the Design Professional shall provide written responses to all comments made at the final review meeting for this Phase. This report shall be submitted, as a requirement, for the Design Professional's pay application for the Design Development Phase.
8. **Design Development Coordination Meeting** – As determined by the Department of Facilities Planning, a meeting shall be held with the Design Team, including all Engineers/Consultants, and all University entities concerned with the project. The Design Professionals shall present each Trade's scope of work to the corresponding University Department that is concerned with the work. This meeting may occur at any time during the Design Development Phase as determined by the Department of Facilities Planning.

9. The Design Professional shall coordinate all interior finishes with the University Interior Designer. The Preliminary Interior Finish Schedule shall be presented at the aforementioned coordination meeting. Include samples with Preliminary Interior Finish Schedule.
10. Updated Project Document Production and Construction Schedule.

D. Construction Documents Phase

1. **Construction Documents Review Package List** - The Design Professional shall indicate, on the “Construction Documents Review Package Checklist”, the status of each required item (a check mark is interpreted to mean that an item has been included in the deliverables). The Design Professional shall provide a written explanation for the omission of any item in the deliverables package.
2. **Construction Documents Drawings** – One (1) full-size set, one (1) half-size set, and one (1) digital copy of .pdf files of the drawings.
3. **Construction Documents Specifications/Project Manual** – One (1) hard copy and one (1) digital copy of .pdf files of specifications/project manual. Hard copy must be double-sided, hole punched and assembled in the appropriate sized 3-ring binder. The binder shall be heavy duty, “D” ring binder, white in color, with label along the end binding and front cover.
4. **Updated Energy Model** – The Design Professional, within the scope of the Basic Services Fee, shall provide an updated Energy Model Report as required by the IHL’s Energy Model Guidelines.
5. **Cost Estimate** – Updated construction cost estimate identifying all Alternates and Allowances.
6. **Construction Documents Phase Approval** - Upon completion of the Construction Documents Phase, the Design Professional must obtain written approval of the submission prior to beginning the Bid Phase. In addition, the Design Professional shall provide written responses to all comments made at the final review meeting for this Phase. This report shall be submitted, as a requirement, for the Design Professional’s pay application for the Construction Documents Phase.
7. **Construction Documents Coordination Meeting** – As determined by the Department of Facilities Planning, a meeting shall be held with the Design Team, including all Engineers/Consultants, and all University entities concerned with the project. The Design Professionals shall present each Trade’s scope of work to the corresponding University Department that is concerned with the work. This meeting may occur at any time during the Design Development Phase as determined by the Department of Facilities Planning.
8. Updated Project Document Production and Construction Schedule.
9. A final Interior Finish Schedule, accompanied by Finish Boards, with all material finishes, shall be required prior to the end of the Construction Document Phase. The Finish Board shall be clearly labeled, and coordinated with the Finish Schedule.

E. Bid Phase

1. **Bid Process and Bylaws** - The University follows the bid process outlined in the Planning and Construction Manual for the Mississippi Bureau of Buildings, Grounds and Real Property. The Design Professional is referred to the Bureau's Manual, Sections 600.37 - 600.57 for the bid process policies. The Manuals can be found on the Bureau's web site www.dfa.state.ms.us/Offices/BOB/BOBProcMan.htm
2. The Design Professional is also referred to Section 900 of the Policies and Bylaws Manual for the State of Mississippi's Institutions of Higher Learning. Section 911, Construction Procedures is on file at the IHL's office, and with each of the institutions of higher education.
3. The IHL web site is www.ihl.state.ms.us. All projects shall be advertised and bid in strict compliance with all bid laws of the State of Mississippi.
4. **Bid Dates** – The University advertises for bids on Fridays of each week and receives Bids on Thursdays of each week beginning at 2:00 p.m. (CST). Final Construction Documents must be received by the Department of Facilities Planning prior to 10:00 a.m. (CST) on the Wednesday prior to the Friday of the first planned advertisement.
5. **Bid File Number** – Upon acceptance of the Construction Documents by the Department of Facilities Planning, the Design Professional shall complete the Advertisement For Bids provided in the Forms Section of this document and email it to the Department of Facilities Planning. Facilities Planning will determine the Pre-Bid Conference date/time and obtain a University Bid File Number. This number will be identified on the Advertisement For Bids, Drawings Cover, and Specifications Cover. The Design Professional shall include a copy of this advertisement within the Project Specifications and Project Manual.
6. **Plan Room Distribution** - Bid documents will be distributed, by the Professional, to at least two (2) plan rooms, as determined with consultation with the Department of Facilities Planning, on a project-by-project basis.
7. **Issuance of Addenda** - The Department of Facilities Planning approval must be obtained prior to the issuance of addenda to the Construction Documents.
8. **Pre-Bid Conference** - The Design Professional shall conduct the Pre-bid Conference, which shall be held a minimum of ten (10) calendar days prior to the date of the bid opening. This date shall be determined by the Department of Facilities Planning and identified in the Instructions To Bidders and the Advertisement for Bids. The Design Professional shall address, at a minimum, the items identified on the Department of Facilities Planning Pre Bid Meeting Agenda.
9. **Bid Day** - The Design Professional shall attend the Bid Opening unless otherwise approved by the Department of Facilities Planning. The Design Professional shall provide sufficient copies of a Bid Tabulation Form and distribute them to all attendees of the Bid Opening. The University shall require five (5) copies of the Bid Tabulation Form for its use during the opening of the bids.

- 10. Award of Bid** - After the bids are formally received, the Design Professional shall consult with the University to determine the successful bidder, and the result of this consultation will be a Letter of Recommendation to Award from the Design Professional to the Department of Facilities Planning recommending the selection of the General Contractor. A Certified Bid Tabulation Form must be included as an attachment to the letter. In return, the Department of Facilities Planning will communicate, in writing, the agreement of the recommendations made by the Design Professional and instruct the Design Professional to proceed with the issuance of Contracts to the successful Bidder.
- 11. Drawings for University and Contractor** - A conformed set of contract documents shall be issued to the University and to the Contractor for their use and files. A full-size and half-size set of documents shall be submitted to the Department of Facilities Planning for their use during construction.

F. Pre-Construction Conference

- 1. Scheduling the Pre-Construction Conference** – Once the Design Professional has received the signed Contracts and all required documentation in an acceptable manner from the successful Bidder, the Design Professional shall forward the Contracts and required documentation to the Department of Facilities Planning for final execution of the Contracts. Upon final execution of the Contracts, the Department of Facilities Planning shall contact the Design Professional to schedule the **Pre-Construction Conference** meeting date and time.
- 2. Conference Requirements** – The Design Professional shall conduct the Pre-Construction Conference. The Design Professional shall address, at a minimum, the items identified on the Department of Facilities Planning Pre-Construction Conference Agenda. All Pre-construction Conferences shall be held at the offices of Facilities Planning, 700 Hathorn Road, University, Mississippi.
- 3. Notice To Proceed** – The official Notice To Proceed (NTP) shall be issued during the Pre-Construction Conference. The Design Professional shall prepare three (3) original Notice To Proceed letters. Each letter shall be signed by the Contractor and a representative from the Department of Facilities Planning during the meeting. One letter shall be given to both the Design Professional and the Contractor. The Department of Facilities Planning shall retain the third letter for the University’s records. At a minimum, the aforementioned Notice to Proceed shall include the information identified on the example NTP in Section 6 of this Design Guide.

G. Construction Phase

1. **Communication During Construction** - The University must be kept fully informed, via written communication, regarding the progress of the work, as a matter of permanent record. All instructions shall come from The Department of Facilities Planning. In the event that the Design Professional acts upon the instructions of other University Representatives, the Design Professional shall be responsible for the costs incurred by the action.
2. **Construction Site Observation** - The University expects competent and diligent construction supervision from the Design Professionals including frequent reviews by a representative of the contracted firm. Each representative shall have first-hand knowledge of the project that he/she is reviewing. The Design Professionals shall regularly visit the site and review the job and submit observation progress reports. Coordination problems that arise as the job progresses shall be addressed in progress reports.
3. **Special Construction Conferences** - The Design Professional shall conduct all necessary Special Construction Conferences. This includes, but is not limited to, Pre-Roofing Conference, Pre-Masonry Conference, Mock-up Reviews, etc.
4. **Monthly Construction Progress Meetings** - The Design Professional and the Design Professional's consultants shall attend all Monthly Progress Meetings. All monthly progress meetings shall be held at the Office of Facilities Planning.
5. **Project Construction Schedule** - The Design Professional must process all RFI's, Submittals, and resolve all construction issues within ten (10) business days of receipt or notification. The Design Professional is responsible for diligently reviewing the Contractor's Construction Schedule. The Design Professional shall stress the importance of the Project Schedule review at each monthly meeting. Any delays shall require a discussion of the delay, including the recording of reasons and responsibilities for the delay.
6. **Construction Change Orders** - All Change Orders must be approved by the Department of Facilities Planning at the monthly progress meetings. If the project is through the Bureau of Buildings, the Change Orders must be approved by the Department of Facilities Planning before being submitted to the Bureau of Buildings. If the project is through IHL, the Change Order must be submitted to the Department of Facilities Planning. The Department of Facilities Planning will review the Change Order, then submit it to IHL for approval prior to the Department of Facilities Planning approving the Change Order. It is expected that Change Orders will be processed by the Design Professional in the month that they occur.

Where the need for a Change Order is recognized too close to the date of the monthly progress meeting, said Change Order shall be processed in the following month.

All pending Change Orders shall be discussed in monthly progress meetings.

All Change Orders must be reviewed and approved by the Design Professional prior to being sent to the Department of Facilities Planning for review and approval. All Change Orders must be provided with the appropriate back-up and breakdowns. See the “Contract Standards Change Order Basics” provided in the Forms Section of this document.

Contractor’s Mark Up for Change Orders - The Design Professional must pay close attention to, and understand, the allowable Contractor and Subcontractor mark-up percentages. See the University’s Special Conditions.

H. Substantial Completion Inspection and Final Acceptance

The Design Professional and the Design Professional’s consultants shall conduct the Substantial Completion Inspection to determine if the Project is sufficiently complete for the Owner’s intended use.

Upon notification of completion of the Contractor’s Substantial Completion Punch List identified in Article 9.8 of AIA Document A201, the Design Professional shall schedule a Substantial Completion Inspection. Representatives from the Department of Facilities Planning, the Department of Facilities Management, and major building occupants shall all be present and participate in the inspection. The Department of Facilities Planning is responsible for coordinating this inspection among University participants.

The Design Professional shall issue the Substantial Completion Punch List to the Contractor within two (2) days of the inspection. The Professional shall give the Contractor a deadline for completing the punch list items that is appropriate to the required work.

The Contractor shall notify the Design Professional when the punch list items have been completed. Upon receiving notice from the Contractor, the Design Professional and the Design Professional’s consultants shall conduct the Final Inspection to review the punch list items.

The Design Professional, upon completion of the Final Inspection, shall indicate the acceptance or non-acceptance of the work by letter to the Director of Facilities Planning, and recommend the respective action to be taken in regards to the Final Inspection and acceptance by the University.

I. Project Closeout and Record Documents

See Section 6 for the Department of Facilities Planning specification regarding project closeout and Record Documents.

The Design Professional shall provide the Department of Facilities Planning a Fee Proposal to conduct a measured as-built of the finished building’s floorplan and site plan. The Fee shall include all time required to measure the entire building, provide a .dwg file for the University’s use. The .dwg shall be drawn utilizing the University’s Existing Building Layering System.

J. Warranty Period

The Warranty Period shall, in general, begin upon completion of Substantial Completion Certificate, as defined by the most current version of AIA Document G704.

During the warranty period the Design Professional shall cooperate as required by the University in overcoming deficiencies and problem situations. Emergency situations must be handled promptly and effectively by the architect and the contractor.

The University requires the Design Professional to perform a year end warranty review and to provide the Contractor with a list of warranty repair items. This must occur thirty (30) days prior to the end of the warranty period. The final warranty review by the Design Professionals is expected to be diligent and comprehensive, including effective follow-up on the resulting corrective procedures to confirm that all deficiencies have been corrected. The Design Professional shall provide a written confirmation regarding the status for any deficiencies.

If a repair to the building, any of its systems, or to the site is necessary during the warranty period, and the Contractor is not able to respond in a timely manner such that the function or use of the building or site is severely impacted, the University reserves the right, after consulting with the Contractor, to make repairs with its own personnel or vendors, and bill the Contractor for the work. If such a case should arise that jeopardizes the health, safety, and welfare of building occupants, the University will act immediately, then notify the Contractor.

Section 5:

Design Requirements and Standards

SECTION 5: Design Requirements and Standards

A. General Requirements

1. Design Considerations

The University of Mississippi expects each of its projects to result in an outstanding work of design. It is the University's aim to achieve the most advanced concepts in design and technology. To this end, the University will allow the greatest possible latitude to mature, talented, designers, consistent with the design considerations contained herein.

The University of Mississippi expects a thorough evaluation of existing conditions prior to the start of design. The Design Professional shall coordinate the extent of the evaluation with Facilities Planning prior to the start of design.

The scope of every project at the University shall include every item of work necessary to provide a fully operational and completely equipped facility, including the extension of streets, walks, utilities and the complete development of open areas within the work area. This work is to be accomplished within the budget set by the University.

These design considerations are intended to communicate preferences and special considerations, which may be unique to the University, and are by no means intended to cover all aspects of a job, or its design and specifications. The Design Professional shall ensure that the following items are addressed within the Contract Documents or the Specifications or the Owners/Contractors Contract.

2. University Master Plan and Architectural Design Guidelines

All designs shall be conducted with reference to the most current edition of the University's Master Plan and the University's Architectural Design Guidelines found on the Department of Facilities Planning website. <http://facilitiesplanning.olemiss.edu/>

3. High Performance Building Requirements

The University of Mississippi is unable to pursue registered LEED projects. However, the design principles contained in much of the LEED program continue to be relevant as we seek to achieve energy efficient and environmentally sensitive buildings that exceed the academic goals of the university community. Design professionals are encouraged to apply principles that result in high performance buildings visually responding to the context of this historic campus.

4. Mississippi Institutions of Higher Learning Sustainability Policy

All new construction and major renovation projects must be in strict accordance with the Mississippi Institutions of Higher Learning Sustainability Policy found on the IHL website. <http://www.mississippi.edu/facilities>

B. Space Planning Requirements

The following requirements apply unless specifically modified in the program:

1. Custodial Closets

The Design Professional shall provide one Custodial closet on each floor of the building. The Design Professional shall coordinate the specific size of any custodial closet with the Facilities Management Department, and its specific requirements for the particular project and/or building. Contact the Assistant Director of Facilities Services in Facilities Management for details.

Custodial closets shall be equipped, at a minimum, as follows:

- a. Hardened concrete floor, waterproofed
- b. Floor drain
- c. Floor type mop sink with hot and cold water services.
- d. At least 12 linear feet of 12" deep shelving for storage of cleaning supplies.
- e. Overhead light and switch
- f. Minimum of two (2) convenience outlets, 110 volt, 48" a.f.f.
- g. Painted walls and ceiling with a scrub resistant surface
- h. Ventilation
- i. Mop racks to accommodate 3 wet mops, dust mop, and 1 push broom
- j. 3'-0" wide door
- k. Lockset, keyed to custodial master key
- l. Closet must accommodate minimum one (1) rolling custodial cart and mop bucket.
Custodial Cart Dimensions – 46"L x 22"W x 38.5"H
- m. Final size of room shall be determined by size of building and the number of floors being served.

2. Break Room

One break room per building for all users of that building is preferred. The room should be a minimum of 144 s.f. and include the following:

- a. Sink
- b. Counter
- c. Electrical outlets
- d. Shelves/cabinets, minimum 8 linear feet
- e. Microwave (typically in an upper cabinet)
- f. Refrigerator (under-counter or full size to be determined)
- g. Water Bottle Fill Stations must be provided in Breakroom

3. Telecommunication Closets

Coordinate location of telecommunication closets with Director of Telecommunication Department.

- a. $\frac{3}{4}$ " Fire Rated plywood backboard
- b. Electrical receptacles as required for equipment
- c. Sufficient HVAC - Consideration shall be given to cooling and humidity control in rooms that will house heat sensitive computer network/ servers. Continued growth in use of technical equipment makes the issue mandatory.
- d. A secondary room may be required for the entrance of the utility to the building, depending on service and entrance requirements.
- e. **See the University's Telecommunications Center website for additional requirements.**

4. Restrooms

- a. Single fixture rooms (one toilet) shall be identified as “Restroom” and graphically represent the “male” and “female” graphic on the sign. There shall not be a single fixture restroom identified specifically for male use or female use.
- b. Large projects shall have at least one single fixture restroom. This shall be determined by Facilities Planning.
- c. Baby Changing Tables –
- d. Water Bottle Fill Station(s) must be provided for public access in building.

5. Vending Areas

- a. Coordinate with Contractual Services on Vending needs.
- b. Drink and Snack machines require one (1) data receptacle and one (1) electrical receptacle each machine required. Coordinate quantities and sizes with Contractual Services.
- c. Laundry Machines require one (1) data receptacle and required electrical service as determined for each machine. Coordinate quantities and sizes with Contractual Services.

6. Classroom Technology Standard Class Layout

- a. **Attendance Scanners** – Rough-ins shall be provided for two (2) scanners in all medium and large classrooms. Provide one (1) ¾” conduit with single gang box at 48” above finish floor at 10’-0” from entrance doors.
- b. **Lecterns** – Each lectern location shall be provided with one electrical receptacle on a dedicated circuit and one data receptacle. Lecterns shall be included in the University’s Classroom Technology Package for each project.
- c. **TV Monitors** – Conference rooms, meeting rooms, and small classrooms will be furnished with at least one large TV monitor in lieu of a projection screen. Adequate blocking in walls must be provided. Provide one electrical receptacle and one data receptacle at each TV location. Coordinate final location with Facilities Planning.
- d. **Projection Screens and Projectors** – All projection screens shall be recessed, electric screens. Coordinate the size of each screen with Facilities Planning and Classroom Technology. Each screen shall be provided with a dedicated electrical circuit, one data receptacle above the ceiling, and one ¾” conduit roughed-in with single gang box at light switch height at the wall location for the operator switch. Provide one dedicated electrical circuit and one data receptacle above the ceiling for the projector. The electrical circuits for the screen and projector may be shared.
- e. **Layout** - Each Classroom and Conference Room shall be provided with electrical services and rough-ins for data/com as required to accommodate the classroom technology that will be installed in each room. See Section 6 for the Classroom Technology – Standard Class Layout.
- f. **Control Room/Equipment Room** - Programs with multiple or large rooms containing classroom technology may require a dedicated room(s) for control equipment and/or technician. These rooms must have sufficient air conditioning, minimum 2 dedicated electrical circuits, adequate data/network and ¾” fire rated plywood on wall for mounting equipment. Coordinate size of room with Facilities Planning.
- g. **Lighting** – At a minimum, 2 levels of lighting must be possible in classrooms, lecture halls, auditoria, and large meeting rooms. If the lighting is expected to be controlled by the classroom technology (lectern), it must be compatible with Extron System and have RS-232 access. This must be closely coordinated with Facilities Planning and Classroom Technology.

7. Mechanical Rooms

- a. Rooms must be of sufficient size to accommodate equipment needs as well as space needed to conduct maintenance or replacement in the future. Access space must be maintained when project is complete and not consumed during construction.
- b. Rooms should be provided with floor drains and properly sloped floors to drains and/or contained curbed areas.
- c. Utility meters, backflow valves, and frequently accessed isolation valves, should be accessible and installed to allow operation and maintenance safely.
- d. Adequate lighting and ventilation of the space must be provided.
- e. Access to all electrical panels on equipment must be maintained with no less than 36" of clearance for all service equipment.
- f. Roof Access and equipment crane must be considered.

8. Offices –

Offices shall be classified and planned for as specified below:

- a. Dean/Director/Department Chair
 - i. Maximum 250 s.f. and includes:
 - ✓ Executive desk – typically U shaped with hutch
 - ✓ Task chair
 - ✓ Two (2) shelving units
 - ✓ Four (4) drawer lateral file
 - ✓ Two (2) guest chairs at desk
 - ✓ Small table (48") with four (4) chairs OR a small sofa and soft seating
- b. Associate Dean/Associate Director
 - i. Maximum 185 s.f. and includes:
 - ✓ Executive desk – typically U shaped with hutch
 - ✓ Task chair
 - ✓ Three (3) shelving units
 - ✓ Four (4) drawer lateral file
 - ✓ Two (2) guest chairs at desk
 - ✓ Small table (48") with two (2) to four (4) chairs
- c. Faculty/Staff/Executive Assistant
 - i. Maximum 120 s.f. and includes:
 - ✓ Executive desk – typically U shaped with hutch
 - ✓ Task chair
 - ✓ Two (2) shelving units
 - ✓ Two (2) drawer lateral file
 - ✓ Two (2) guest chairs at desk

- d. Graduate Assistant/Adjunct
 - i. Maximum 100 s.f. and includes:
 - ✓ L shaped work station
 - ✓ Task chair
 - ✓ One (1) shelf
 - ✓ One (1) guest chair at desk
 - * Can be reduced to 36 s.f. if “hoteling” is a consideration
- e. Teaching Assistant
 - i. Maximum 36 s.f. and includes:
 - ✓ Small L-shaped work station
 - ✓ Task chair
- f. Administrative Assistant
 - i. Typically 36 s.f. and includes:
 - ✓ L-shaped work station
 - ✓ Task chair
 - * Typically considered in conjunction with a lobby or waiting area

9. Lactation Room –

Coordinate requirements with Facilities Planning.

C. Temporary Construction Requirements

1. Designation of Construction and Storage Areas

The extent and boundaries of the work area for a project shall be clearly defined in the Contract Documents. The contract for the Design Professional shall include the development of the complete work area; and both design and construction operations shall be confined to this area.

The exact boundaries of the area or areas, which may be used by the Contractor and subcontractors for the storage of materials, and as working area shall be designated by the Department of Facilities Planning, and shall be indicated in the Contract Documents by the Design Professional. The Design Professional shall indicate the boundary of the required 8'- 0" high, chain link, construction fence and the location of man-gates and vehicular gates. The University's fence specification must be used for all construction fences and gates.

The Department of Facilities Planning may provide additional construction storage and staging areas on the edge of or just off of Campus. These areas shall be considered as part of the Construction Site and all elements of the Contract Documents shall apply.

If gravel or rock is used for construction access or staging, the gravel or rock material must be completely removed from the site prior to placing top soil and final grading.

2. Utilities Rates & Agreement During Construction

Temporary Utilities shall be paid for by the Contractor. The Design Professional shall confirm the utility rates which the University shall charge the Contractor during the course of a Project. The Utility Rates and requirements are included within the University Special Conditions.

The Design Professional shall specify that the Contractor provides and maintains his or her own electrical construction system for all needs during construction. Temporary service to facilities shall be provided by the Owner to a metered point of connection. The Contractor shall be responsible for final connection and payment for energy used.

3. Existing Infrastructure and Landscape Protection

The Design Professional shall indicate in the Contract Documents any areas, buildings, landscaping systems, and landscaping to be protected. The Design Professional shall discuss the protection of trees and plantings with the University's Landscape Services during the Design Development Phase of the Project.

Trees and plantings within the work area shall be protected by a 6 feet high (minimum) chain-link construction fence located 15 feet beyond the drip line of the trees or plantings, at all times. Plastic construction fencing is not acceptable. See University's Fence Specification for details.

Equipment, vehicle parking, and storage of materials shall not be allowed beneath the drip line, in order to prevent damage to existing planting. Special exceptions must be approved by the Director of Landscape Services.

The Design Professional shall refer to the Mississippi Extension Service's publication, "Tree Protection Standards in Construction Sites" for further information and requirements not noted in this document.

Directional boring shall be utilized rather than cutting streets, pavements, sidewalks or curbs. Specifications shall clearly state this requirement. The Design Professional shall consider the extent and locations of existing utilities and landscaping to minimize any cutting or damage to the landscaping. Ground penetrating radar may be used by the Design Professional, with permission of the Facilities Planning staff to assist with locating existing infrastructure. Exceptions to directional boring, when necessary, shall be clearly set out in the program. Damaged items listed above shall be repaired or replaced prior to Final Acceptance.

4. Temporary Erosion and Sediment Control

The Design Professional shall provide, within the Contract Documents and the Specifications, sufficient means to prevent erosion and run off. The Design Professional shall discuss erosion control protection and soil stabilization means with the University's Landscape Services during the Design Development Phase of the Project.

Use Arkansas field stone or river rock for erosion control and ditch work at flared ends of pipe. No limestone rip-rap shall be permitted.

5. Materials to be Salvaged by The University

For each job, the Design Professional shall coordinate with the Department of Facilities Planning to determine what material, equipment, landscaping, etc. is to be salvaged by the Contractor and given to the University, or will be salvaged by the University prior to the start of construction.

6. Excess Excavation

Any excess excavation shall be identified within the Construction Documents, as well as instructions for the removal on a project by project basis. Excess excavation shall not remain on Campus.

D. Asbestos and Other Contaminated Materials

1. Obtaining Testing of Suspect Materials

The Design Professional shall be responsible, on all projects for the contracting of the testing of asbestos and other hazardous materials, and for any subsequent abatement, should abatement be required. The Design Professional shall coordinate the need for such testing with the Department of Facilities Planning. The Design Professional shall require that the Abatement Contractor submit to the Department of Facilities Planning a Clean Air Certificate and a certificate stating that the required abatement was conducted per the Contract Documents.

2. MDEQ Notification

The Design Professional shall properly notify the Department of Facilities Planning and the Mississippi Department of Environmental Quality as to the results of the testing, within the timeframe stipulated by the Mississippi Department of Environmental Quality, prior to the commencement of any abatement or general demolition. A copy of the notification shall also be provided to the General Contractor.

E. Concrete

1. Concrete Slabs

Pre-treat all slab on grade and perimeter foundations for termites. An optional service contract should be made available to the Owner.

Prevent concrete from contact with masonry walls in pouring slabs in wall-bearing buildings. Specify a tolerance in the finish slab surface of a maximum of 1/8 inch in 10 feet. Minimum strength of concrete should be 3500 psi.

Concrete patching will not be allowed unless the patch is completely concealed.

The Design Professional shall establish on the drawings all finish elevations and slopes for concrete slabs at floor drains. Slope slabs consistently from walls to floor drain.

F. Masonry

1. Pre-Installation Conference

A Pre-Installation Conference shall be held, at the Project site, prior to the start of any masonry installation.

2. Face Brick

The selection of brick color shall be discussed with the Department of Facilities Planning as soon as possible in the Design Phases. The standard brick color for University buildings shall be Burlington, paper cut. Alternate brick colors/types shall not be specified unless approved, in writing, by the University Administration through the Department of Facilities Planning.

3. Mortar

“University Buff” color mortar by Ash Grove with White Sugar Sand shall be used for all mortar mixes. A minimum of three (3) mock-ups will be constructed for each project, in order to more closely match existing structures. The location of these mock-ups must be coordinated with Facilities Planning.

4. Donor Brick

Brick for the “Walk of Champions” and in front of “Alumni” shall be Hanson, 4” x 8” x 2-1/4”, orange, by Bricks Are Us.

5. Paving Brick

Normal paving brick units shall be Pine Hall, 2 ¼” x 4” x 8”, Georgian Edge F/R Paver meeting ASTM C-902, Class SX, Type 1, Application PX and C-67 for freeze & thaw and efflorescence testing. Unless otherwise approved, all pavers shall be “wet set” in a mortar bed and grouted.

6. Tactile Pavers

Tactile pavers for ADA use shall be: Wausau Tile ADA-12” pavers, color: ADA-70.

**The old color designation for Wausau Tile ADA-12” pavers was U4008.*

7. CMU Backup

Cavity wall type construction with CMU backup shall be the preferred means of construction. Flash walls properly and provide weep holes and vents as required. Anchor masonry to masonry, masonry to metal, masonry to concrete, etc.

8. Masonry Site Walls & Screens

All Masonry Site Walls & Screens that are constructed on site that receive face brick over a CMU structure or substrate must receive an applied asphaltic coating on the CMU prior to installing the face brick.

G. Thermal and Moisture Protection

1. Thermal Protection

The University requires highly insulated building envelopes. A minimum average assembly of R-30 is required for roofs and a minimum assembly of R-13 in walls is required.

2. Weather Barriers

Vapor barriers shall be required in exterior walls to prevent the infiltration of warm moist outside air into the walls during the summer and to prevent warm moist inside air from migrating into the walls during the winter.

3. Roofing Pre-Installation Conference

A Pre-Installation Conference shall be held, at the Project site, prior to the start of any roofing installation.

4. Standing Seam Metal Roofs

Sloped, standing seam metal roofs are preferred. The roof color for standing seam roofs shall match Valspar 434B1602 Fluorpon L/S Terra Cotta, Coil Order #108576 University Of Mississippi. All roofs shall have a 2-Year Workmanship Warranty and a 20-Year Manufacturer's Warranty.

5. Shingle Roofs

A tabbed designer shingle, UL Class "A" fire resistance; UL classified to meet ASTM D3463, ASTM 3018 Type I and ASTM D3161, Class "F", 110 mph wind resistance must conform to CSA standard A123.5.

Color must be approved by the University.

6. Low Slope Roofs

Low sloped roofs shall be light in color to provide a high reflectance value, and shall be 2-ply modified bitumen with twenty (20) year warranty.

No EPDM or single-ply roofs will be accepted.

7. Roof Drainage Systems

An exterior roof drainage system, with roof scuppers, shall be the preferred means to drain roofs. All roof drainage shall be collected in an appropriate collection system and carried below grade away from the building.

8. OSHA Roofing Requirements

The Design Professional shall ensure that the design and specifications for roof hatches and other openings in roof assemblies, meets all applicable OSHA requirements, including 29 CFR 1910.23, "Guarding Floor and Wall Openings and Holes".

9. Exterior Insulation and Finish Systems

The University prohibits the use of Exterior Insulation and Finish Systems (EIFS) on the exterior of its buildings.

H. Openings

1. Interior Doors

Interior doors shall be solid core wood doors, and fire rated as required.

All rooms in which staff and faculty occupy for conducting University business (office, conference rooms, classrooms, etc.) must have door with vision lites. The size of the vision lites shall be determined to compliment the architectural design of the project.

2. Exterior Windows

Double glazed windows with thermal block to prevent infiltration shall be the preferred window units.

3. Automatic Door Openers

In addition to complying with all ADA requirements, automatic door openers shall be installed on main exterior doors and primary restroom doors, including all multi-compartment restrooms.

Automatic door operators shall be hard-wired with receivers for remote transmitters at main exterior door and primary restroom door locations. Door operators must operate in conjunction with access controls. The preferred Automatic Door Opener is BESAM Model SW100 by Assa Abloy.

4. Door Hardware –

Door hardware shall be compatible with the existing University systems. Keying and hardware schedules should be coordinated with Facilities Planning, the University's locksmith, and with the building's occupant. Use Corbin-Russwin locksets (US26D finish preferred). Locks shall be keyed to existing high-security Pyramid key systems.

Cores shall be ordered and installed by the General Contractor, after receiving necessary security authorization from the University locksmith.

BUREAU OF BUILDINGS PROJECTS ONLY – Cores shall be ordered and installed by the University.

5. Fire Department Key Box

A lockable weather proof security key box and rough-in box shall be purchased by the Contractor from the Facilities Management Department, and shall be installed by the Contractor. The boxes shall be Knox Series 3200.

The Design Professional shall coordinate the location of the key box with the University Fire Services during the Design Development Phase Review meeting. Typically, the box is installed to the left of the main fire alarm panel. The box shall be recessed in a building wall, if possible, or mounted securely to the building. The Facilities Management Department shall be notified by the Contractor, at the end of the Project, in order for Facilities Management to install the keys within the boxes. No keys for the boxes shall be provided to the Contractor.

I. Finishes –

1. General Information

When working on a building renovation or addition project, unless otherwise noted in the Program, the building's character, existing finishes, and maintenance for the existing finishes shall be considered when selecting the finishes for the renovation or new construction. Existing palettes of color within buildings of historical significance shall be considered or matched. Coordinate with the University Interior Designer.

Materials with homogeneous color are preferred, rather than surface finished materials. Avoid custom designed colors and finish materials that would not be easily obtained in the future. Timeless color palettes are preferred.

The University promotes energy efficient green design, construction and building operations. Therefore, the selection of finishes shall be made in consideration with the life cycle environmental impact of the material.

Avoid materials requiring significant specialized maintenance. All specified finishes shall allow for normal cleaning, upkeep, and maintenance. Maintenance for finish materials must be outlined and reviewed with the Facilities Management Department prior to the end of the Contract Document Phase.

All asbestos flooring materials shall be abated prior to installing a new flooring material. If the flooring is suspected of containing asbestos, then testing shall be required.

If interior walls are exceptionally high, such as atriums or loft areas, and have high traffic or abuse, the Designer shall consider the installation of a "break" in the upper wall, such as a picture rail or second contrasting color, to allow for less maintenance painting.

The Contract Documents shall clearly indicate the extent of each finish and all transition materials needed for the building.

Specifications for flooring shall include the Contractor's responsibility to protect the installed flooring until final completion and acceptance of the facility.

Coordinate requirements for attic stock with the University's Project Coordinator.

The Design Professional shall coordinate all cleaning supplies, required by the proposed interior finishes, with the Assistant Director of Building Services.

WD-40 is prohibited on any metal walls, partitions or fixtures.

2. Interior Finish Schedules

The Design Professional shall coordinate all interior finishes with the University Interior Designer. The Preliminary Interior Finish Schedule shall be presented prior to the end of the Design Development Phase. A final Interior Finish Schedule, accompanied by Finish Boards, with all material finishes, shall be required prior to the end of the Construction Document Phase. The Finish Board shall be clearly labeled, and coordinated with the Finish Schedule.

3. Identification of Rated Walls

All fire or smoke rated walls, as required by the Building Code or other applicable authority, shall have the required hour rating, and any fire or smoke wall designation stenciled on the wall, above the ceiling. Details and distances of the stenciling shall comply with the applicable building code.

4. Tiling

Through-body porcelain tile shall be used for floor use. Epoxy grout is recommended, and a dark colored grout is preferred.

High gloss glazed tile is preferred for public restroom walls for ease of maintenance.

5. Ceilings

Sheetrock, plaster, and splined ceilings are strongly discouraged due to lack of access to the space above the ceilings. However, gypsum board and plaster ceilings may be used on a project by project basis. The Design Professional shall evaluate ceiling types on a case by case basis, considering the historical significance, acoustics, maintenance access, and architectural significance.

Ceiling materials shall be selected to provide proper acoustics within the building.

Access doors that are a minimum of 30" x 30" shall be required in all non-lay in ceilings, to provide access to electrical, mechanical, and plumbing systems above them. Access doors shall be recessed units.

6. Resilient Flooring

The basis of design, on campus, shall be Mannington Essentials Vinyl Composition Tile.

Vinyl tile floors shall receive three coats of wax and one buffing. The wax shall be supplied by the University, and the Contractor shall be charged for the wax by the Department of Facilities Management, via a Department of Facilities Planning issued purchase order, for the initial three coats. The Contractor shall purchase the wax, from the Department of Facilities Management, during the Department of Facilities Management's normal working hours Monday through Friday. Contact the Assistant Director of Building Services for further details.

As an alternative, the wax can be installed and buffed by the University, with the Contractor reimbursing the University for the labor.

Flooring shall not be too light as to show scuffs, yet not too dark to show dust and lint.

Luxury vinyl plank and tile shall require a urethane wear layer with aluminum oxide cured by an ultraviolet (UV) process, to prevent scratching.

7. Resilient Base

The color of the base shall not be too light as to show scuffs, yet not too dark to show dust and lint. Standard 6" high resilient base shall be specified in offices, classrooms, and other areas for easy replacement, if needed in the future. Common areas, administrative areas, and specialty spaces may lend the design of a standard designer base profile, depending on the Program requirements for the space.

8. Carpeting

The selection of carpet material shall take into account the program requirements for the facility, including, but not limited to function, proximity to the entrance, budget, transitions, and stairs. Consideration for the use of soil-hiding patterns and colors shall be used for student occupied spaces and high traffic areas. Solid color carpets shall not be acceptable in high traffic areas.

Carpet tile shall be preferred in most locations on campus. Broadloom is a better solution for tiered classrooms, areas where carpeting stairs, and in administrative offices.

Use of 100% solution-dyed nylon fiber is encouraged.

Consideration for the visually impaired should be made when carpeting stairs; stair nosings shall be used as required.

9. Wall Coverings

With rare exception, wall coverings shall not be used in student spaces due to the difficulty with repairing the finishes. Wall coverings shall not be used on exterior walls.

10. Painting

All painted surfaces shall be durable and cleanable. Paint shall be specified for the appropriate use and of sufficient quality for touch-up purposes. All paints shall be low VOC paints; no oil-based paints shall be allowed.

The Architect shall evaluate all existing substrates and determine the appropriate paint to be used over existing substrates and/or finishes prior to execution.

The University Paint Shop stocks a limited number of standard colors. Consideration for these colors shall be made when selecting paint colors. The standard colors are not to influence the design, however, if the selected paint color is close to a standard color, then the standard color shall be considered in the design.

The Designer shall consider using high pigment paints in high traffic areas or areas of abuse.

Zolotone and other special coatings shall not be permitted due to the difficulty with repairing damaged areas.

J. Specialties

1. Visual Display Units

- a.** Chalkboards, Marker Boards, Display Boards, and Project Screens - Requirements for instructional boards shall be reviewed based on the Program for the Project. The Design Professional shall coordinate the location and installation of all visual display units with the University Interior Designer and Classroom Technology. All Displays shall be included in the project construction scope.
- b.** Projection screen location, quantity, and size shall be coordinated with the mounting heights for other instructional boards, furniture layout, and pendant light fixtures. The Professional must locate projection screens so chalkboards & marker boards are able to be used simultaneously while projection screens are lowered.

2. Signage

- a. Site Signage - Site signage requirements shall be determined by Facilities Planning on a project by project basis. The Design Professional shall coordinate with Facilities Planning during the Design Development Phase.
- b. Exterior Building Signage (attached to the building) – Signage shall be Times Roman, with height and color to be determined by Facilities Planning on a project by project basis. The Design Professional shall coordinate with Facilities Planning during the Design Development Phase.
- c. Interior Building Signage - The Design Professional shall coordinate with Facilities Planning during the Design Development Phase. A complete sign palette shall be included in every project.
- d. Commemorative Building Plaques – A commemorative building plaque must be provided for all IHL projects over \$2,000,000.00 and any Bureau of Buildings project. Coordinate the need for the plaque along with the location with the Department of Facilities Planning. Specific requirements of the Mississippi Institutions of Higher Learning’s Building Plaque Format can be found on the IHL website. <http://www.mississippi.edu/facilities>.

3. Toilet Partitions

- a. All new toilet partitions should be solid core phenolic material. Color to be approved by Facilities Planning.
- b. WD-40 is prohibited on any metal walls, partitions or fixtures.

4. Toilet Accessories

- a. **Soap Dispensers** – The University prefers hand pump soap dispensers. The dispensers shall be provided by the Owner, and installed by the Contractor. The Design Professional shall indicate the location of the dispensers in the design documents. Dispenser used shall be Deb Foam Soap Dispensers.
- b. **Hand Sanitizers** – Hand sanitizers shall be provided by the Owner and installed by the Contractor. Sanitizers shall be sensor operated and shall not be installed adjacent to doors, in order to prevent the device from dispensing when pedestrians walk by the device. The Design Professional shall indicate the location of the dispensers in the design documents. Sanitizer used shall be Clorox Hand Sanitizer (battery operated).

- c. **Paper Towel Dispensers and Automatic Hand Dryers** – Automatic Hand Dryers shall be used as the primary source for drying hands. The Design Professional shall provide on the design documents, one paper towel dispenser adjacent to the automatic hand dryers in each restroom that contains multiple toilets/urinals. Dispensers should be appropriate for dispensing existing paper towels and toilet tissue stocked in storeroom. Specifically, nine inch jumbo toilet paper dispensers

The University uses Georgia Pacific En-motion Paper Towel dispensers; 13 3/10" High X 14 4/5" Wide X 9 3/4" Deep

Manual towel dispensers and automatic hand dryers shall be located in close proximity to the hand sinks, to prevent dripping of water across the floor of the toilet space.

The Owner shall provide the towel dispensers and the Contractor shall install the dispensers. The Design Professional shall coordinate with the Department of Facilities Management as to the specifications.

- d. **Toilet Paper Dispensers** – Toilet paper dispensers shall be provided and installed by the Contractor. The design Professional shall indicate the locations and the specifications within the design documents, and shall confirm the specifications for the dispensers from the Department of Facilities Management during the Design Document Phase. Basis of Design shall be – Georgia Pacific GP 59009 Translucent, Smoke, Jumbo Jr. Bathroom Tissue Dispenser; 10.61" wide X 11.29" Heigh X 5.39" deep.
- e. **Toilet Seat Cover Dispensers** – Toilet seat dispensers shall be provided by the Owner and installed by the Contractor. The Design Professional shall indicate the locations in the design documents. Dispensers used shall be Hospeco.
- f. **Sanitary Napkin Disposal** – Surface-mounted sanitary napkin disposal shall be provided by and installed by the Contractor. The Design Professional shall indicate the locations and the specifications within the design documents during the Design Document Phase. The dispensers shall be per Bobrick, Contura Series surface-mounted, Model B-270 or equal.

Non-ADA Stalls – Mount the sanitary disposal on same side as the toilet paper holder, so that the disposal bin is between the toilet paper holder and the toilet wall. Minimum height to opening is 15 inches from floor.

ADA Stalls – Mount the sanitary disposal on same side as the toilet paper holder, so that the disposal bin is between the toilet paper holder and the stall door wall. Minimum height to opening is 15 inches from floor; maintain minimum 1-1/2" clearance below grab bar.

- g. Mirrors** – The design and inclusion of mirrors shall be on a Project by Project basis. The Design Professional shall coordinate the use, type and design of mirrors with the Department of Facilities Planning.

No toilet accessories shall be mounted to the mirrors.

5. Fire Protection Systems and Fire Extinguishers

Fire protection systems and fire extinguishers shall be installed as required with all current codes or as noted.

Fire Protection Systems

- Wet Pipe Systems shall be utilized on academic and dormitory facilities. Wet Pipe Systems shall not be installed in areas exposed to outdoor ambient temperatures.
- Dry interlocked pre-action systems shall be utilized on library, museum, and other specialty higher risk sensitive applications.

Fire Extinguishers

Regardless of Code requirements, fire extinguishers shall be provided in all mechanical rooms, electrical rooms, elevator equipment rooms and data/com rooms. The appropriate rated fire extinguisher shall be used in type each room. Five (5) pound fire extinguishers shall be used at all times unless larger extinguishers are required by Code.

K. Equipment

1. Appliances

All appliances shall be Energy Star appliances.

2. Window Treatments

The Design Professional shall review the need for sunlight filtering in spaces, such as, but not limited to, classrooms, offices, corridors, conference rooms, and seminar rooms for darkening and projection purposes. Standard solutions for window treatments include solar shades (manual or motorized) or blinds.

L. Furnishings

- 1. Furniture - Furniture is not within the scope of construction** projects on campus, unless by special direction from the Department of Facilities Planning. However, fixed seating is frequently a part of the construction project, and should be coordinated, by the Design Professional, with the University Interior Designer.

When designing power and data locations, considerations shall be made to the typical office, classroom, common area, conference room, or other furniture layout.

2. Furnishing Accessories

- a. Waste Disposal Containers** – 23 gallon Slim J waste cans shall be provided by the Owner and installed by the Contractor only in restrooms and classrooms, unless instructed otherwise by the Department of Facilities Planning. The Design Professional shall indicate the location of the containers on the design documents. Containers for offices shall be purchased by the University department through the Department of Facilities Management.

- b. **Recycling Bins** – The Design Professional shall indicate the location of recycling bins with the Department of Facilities Planning during the Schematic Design Phase. Large recycling bins shall be part of the Project’s FFE budget, while smaller containers shall be provided the Department of Facilities Management.

The Large Recycling Bin currently used by the University is a 2-door cabinet from Max-R; 45” Wide X 46” High X 23” Deep.

3. Site Furnishings

- a. **Bike Racks** - The Design Professional shall account for sufficient bike racks around the building site. Coordinate location and quantity with the Department of Facilities Planning. The standard bike rack that shall be used on Campus is by Function First, Inc. Racks shall be in-ground mount, Model Bike Rib Flow Rack; numbers Flow_BR8, Flow_BR6, and Flow_BR4 as required. Color to be standard polyester powder coat, black hammer.
- b. **Trash and Litter Receptacles** – The standard trash receptacle that shall be used on Campus is by Victor Stanley, Inc., T Series Model T-32 with black plastic liner and optional S-2A Dome Lid. Color to be VS-Tavern Square Green.
- c. **Benches** – The standard bench that shall be used on Campus is by Victor Stanley, Inc., Production Series Model PRS-127 with optional armrests. Color to be VS-Black.
- d. **Miscellaneous Site Furnishings** – All miscellaneous site furnishings shall be by Victor Stanley, Inc. and as approved by the Department of Facilities Planning.

M. Special Construction

The Design Professional shall coordinate special requirements with the Department of Facilities Planning.

N. Conveying Systems

1. ELEVATORS

- a. Elevators shall include tamper proof, hands free ADA approved phones.
- b. Elevators shall have non-proprietary controls from a company that manufactures, services, and installs the elevators under existing contract with the University. The Manufacturer must have service technicians available in the Oxford area. Discrepancies noted during warranty period must be properly repaired prior to final acceptance by the owner.
- c. Elevator sump pumps shall not be connected to the sanitary sewer. Sump pumps shall not be used with hydraulic elevators.
- d. Elevators shall not be used during the construction phase, in order to ensure that the warranty begins no earlier than at the time of Substantial Completion.
- e. Elevator protective blankets shall be included within the design specifications by the Design Professional, and shall be installed, by the Contractor, after the final acceptance of the elevator by the Owner, and shall, at that time, become the property of the Owner.
- f. ADA Lifts - Ramps and elevators shall be the preferred methods of accessing different elevations. As such, lifts shall not be used.

O. FIRE SUPPRESSION

1. **Fire Hydrants** – Mueller, Drain-back type hydrants. Manufacturer’s installation instructions including proper bedding for drain back should be followed.
2. **Minimum Supply Line** – 8 inches
3. **Minimum Setback From Curb** - to be 8’-0” from existing curb line; however, no further than 150’-0” from the structure unless otherwise approved by University Fire Services.
4. **Minimum Clearance Around Hydrant** – 3’-0” minimum around all sides.

P. PLUMBING SYSTEMS

- 1. Meters** - All new construction shall have permanent gas, water, and electric meters installed and tested.
 - a.** New or replacement meters shall have both readable faces and electronic pulse for transmitting data to a building automated system.
 - b.** Electronic flow meters and supply/return water temperature main piping sensors shall be installed and tied into the building EMS system for the chilled water and hot water systems for each building.
 - c.** Gas meters shall be a Roots Series B3 rotary meter, by Dresser, or equal for locations on campus, and a Sensus brand programmable or equal meter for other locations. A 1-10 volt pulse capability shall be provided.
 - d.** All meters (gas, water, and electric) shall have conduit run during construction to nearest energy management system enclosure for future connection.
 - e.** All projects where the installation value of the gas service to the facility exceeds \$8,000.00 require that a “Construction Notice” be provided to the Public Service Commission five (5) days prior to installation. See the University’s Special Conditions.
- 2. Piping** – The standard burial depth for all underground piping shall be a minimum of 24 inches below grade. Install a tracer wire from valve or similar box to end of run on piping lines installed underground. Tracer wire shall be No. 12 solid copper. All newly installed underground piping must be locatable before project is accepted.

Domestic, chilled water, condenser, and hot water pipe 2 inches and smaller shall be copper. Solder should be 95-5. Over 2 inches shall be welded steel or copper. Mechanical and Pro-Press joints and fittings shall be acceptable.

All flange bolts for pipe joints shall be tested, by an independent testing company, to insure the bolts are tightened to the torque specifications of the manufacturer. This shall occur for ALL pipe types with bolted joints.
- 3. Condensate Drain Lines** - Condensate drain lines from drain pans, vent pipes, and sanitary sewer lines above grade shall be either cast-iron or PVC. Special consideration shall be given to sound control and flame spread/smoke development aspects of any application. Condensate drain lines shall not be connected to the sanitary waste piping system, without an air gap or automatic trap priming system or other mechanism to prevent sewer gases from being drawn into the air handling systems.
- 4. Pumps** – The University prefers base mounted, end suction, centrifugal pumps, though split cased pumps are acceptable for larger capacities. In line pumps should only be used in extreme situations, where adequate floor space is not available. Variable speed pumping shall be utilized, where feasible.

5. **Underground Gas Lines** - Underground gas lines shall be non-metallic and installed with No. 12 solid copper tracer wire. Underground gas piping shall meet ASTM 2513, SDR 11, PE 2406 and 2407. All gas piping must have 6" of debris-free bedded sand below and above the pipe.

Provide an earthquake actuated automatic gas shutoff valve at the supply side of all natural and propane gas lines, at building gas service entrance. Refer to the Gas Service Entrance Detail in Section 6.

6. **Directional Boring** – Utility lines such as water mains, sanitary sewer mains, and storm sewer mains shall be exposed at cross points before directional boring process begins.
7. **Joining of Plastic Pipe** – All Contractors using heat fusion or electro fusion for installations and repair to PE pipe must be certified to perform the task.
8. **Sanitary Sewer** - Sanitary sewer lines below grade should be schedule 40 solid core PVC. Sanitary waste piping for building main service connections shall be a minimum of 6" size. The sanitary service piping serving multiple water closets shall also be a minimum size of 6". Gasketed sanitary mains (Gravity), outside of buildings, shall comply with ASTM D3034, SDR 26, KPVC
9. **Plumbing Specialties** – Exposed to view and small stop valves providing service water to individual sink, lavatory, and tank-type water closets shall be one quarter turn ball-type. Supplies from these stops to fixture connections shall be flexible stainless steel braided jacket reinforce type. Similar stop, maintenance/connection valves, and supplies shall be utilized for connections to ice machines, ice makers, small under-counter dishwashers, and washing machines.

The University requires all potable water valves, strainers, etc., of 2" size or larger, to be insulated with removable/reusable insulation similar to Corrick valve covers.

Flush valves are preferred for the water closets and urinals.

10. **Water Testing by Health Department** – All domestic potable water shall include flushing, chlorinating, and disinfection of domestic plumbing and bacteriological sampling, as required by the Mississippi Department of Health, the University requires documentation of completion before the domestic water system is placed in operation.
11. **Cross Connection Control** – Appropriate backflow protection devices shall be installed in facilities where potential cross connection with high hazard contaminants exists. Examples would be water make up connections between potable water sources and treated heating or cooling water (water treatment for corrosion control or glycol). Laboratory sinks should be equipped with vacuum breakers.
12. **Isolation Valves** – **Inside Buildings:** Shall be provided at each branch main leaving the riser(s) on each floor to allow sections or floors to be isolated from the rest of the system. This would include potable water (hot and cold), chilled water, and heating water (supply and return lines). For large buildings, isolation valves may be needed at suites of wings. This shall be discussed with Facilities Management.

- 13. System Connection** - There shall be no interruption of campus systems in order to make building or utility connections. This should be done using hot taps for connection to the campus mains.

Q. HVAC SYSTEMS

The warranty period for the HVAC system will begin only after the University accepts the building from the Contractor, at the time of Substantial Completion.

The air handling system used for a building obviously depends on a number of factors. It is not the intention of this handbook to require the Design Professional to select a particular system, but the University does have preferences, which are to be taken into consideration.

In general, the University prefers:

- VAV reheat systems. Every effort shall be made in designing the system to minimize the number of air handling units.
- Full air side economizers, with either modulating or two position dampers.
- Variable frequency drives to modulate the speed of the fan.
- Centrifugal fans.

The Mechanical HVAC design shall include:

- Appropriate dehumidification capability, control, and monitoring
- Appropriate building pressurization
- Adequate zone temperature control, that considers changes in external solar effects, occupancy, etc.
- Protecting air handler unit (AHU) coils from freezing, incorporating such items as glycol loops with heat exchangers, freeze recirculation pumps, etc.
- Appropriate air filtration
- Equipment sound attenuation
- Minimize equipment vibration and sound transmission
- Interior building air handling arrangements; roof mounted AHU's shall only be acceptable in special cases
- Pressure gauges on both sides of all pumps and AHU coils.
- No mercury bulb thermometers shall be allowed; Pete's Plugs shall be replaced with separate temperature and pressure gauges. Pressure gauges shall be liquid filled.
- Isolation ball valves on all gauges and air vents.
- System components should be specified that are easily/readily accessible for maintenance.

Expansion tanks are not needed on chilled or heating water systems connected to and using the campus piping loop(s), but the University prefers:

- Air separators with automatic air bleeds at each building connected to the loop(s).
- Replaceable full bladder expansion tanks, air separators, and separate make-up water provisions are required on building standalone HVAC water systems, and on similar water secondary systems that are isolated, using heat exchangers, etc. off the campus loop system.

1. **Underground Chilled Water Lines** - Underground chilled water lines connected to the chilled water loop shall be pre-insulated ductile iron slip joint pipe with an insulation K factor of .13 or better and polyethylene or PVC outer jacket designed to make a smooth, gap-free butt joint. All underground chilled water lines must have No. 12 solid copper tracer wire placed between the two (2) lines (supply and return) and brought to the surface in a valve box every Three Hundred (300) feet.
2. **Hot Water Loop/Steam Piping** - Steam supply pipe shall be schedule 80 steel; steam condensate Schedule 80 A53 steel. Central hot water loop piping, routed below grade, shall be either pre-insulated ductile steel or pre-insulated welded steel. All underground hot water lines must have No. 12 solid copper tracer wire placed between the two (2) lines (supply and return) and brought to the surface in a valve box every Three Hundred (300) feet.
3. **System Connection** – All connections/tie-ins to the Chilled Water System and Hot Water System must be conducted with “hot taps”. If “hot taps” are not possible within the project, alternative methods must be presented to Facilities Management for final approval prior to bidding. There shall be no interruption of campus systems in order to make building connections.
4. **Pumps** – The University prefers base mounted, end suction, centrifugal pumps, though split cased pumps are acceptable for larger capacities. In line pumps should only be used in extreme situations, where adequate floor space is not available. Variable speed pumping shall be utilized, where feasible.
5. **Piping** – In general, the standard burial depth for all underground piping shall be a minimum of 24 inches below grade. Install a tracer wire from valve or similar box to end of run on piping lines installed underground.

Domestic, chilled water, condenser, and hot water pipe 2 inches and smaller shall be copper. Solder should be 95-5. Over 2 inches shall be welded steel or copper. Mechanical and Pro-Press joints and fittings shall be acceptable.

All flange bolts for pipe joints shall be tested, by an independent testing company, to insure the bolts are tightened to the torque specifications of the manufacturer. This shall occur for ALL pipe types with bolted joints.

6. **Valves - Hot and chilled water shut-off, above grade:**
 - Two inch and below: quarter turn full port ball valves with bronze bodies, stainless steel balls, Teflon seats
 - Larger than two inch: butter fly-lug type or gate non-rising stem
 - Isolation valves installed in ductile iron chilled and hot water loop: Flanged mechanical joint gate valves
 - Steam and steam condensate shut off valves: 2 inch and below – ball valves; above 2 inch – gate.
 - The University requires all HVAC, steam system valve strainers, etc., of 2” size or larger, to be insulated with removable/reusable insulation similar to Corrick valve covers.

7. **Isolation Valves** – Inside Buildings: Shall be provided at each branch main leaving the riser(s) on each floor to allow sections or floors to be isolated from the rest of the system. This would include potable water (hot and cold), chilled water, and heating water (supply and return lines). For large buildings, isolation valves may be needed at suites of wings. This shall be discussed with Facilities Management.
8. **Ductwork** – Ductwork considerations shall include, but not be limited to the following items.
 - In general, rigid metal ductwork shall be utilized. “Ductboard” shall not be allowed.
 - Interior lined versus external wrapped ductwork insulation shall be determined on a project specific application basis.
9. **Heating Systems** - The University Heating System uses a hot water loop system or remote forms of heating such as boiler or gas furnace depending on application. Some locations may utilize other energy saving methods of combined heating and cooling. When possible, it is preferred that buildings be connected to the campus hot water system. Heating systems connected to the campus heating loop need to be able to operate at supply water temperatures of 105 Degrees in summer months and 180 Degrees in winter months. Actual water supply temperature is determined by a reset schedule based on outside air temperature.

Systems that depend on outside air intake will be piped to a heat exchanger that in turn is connected to the Central Hot Water Loop or a hot water boiler(s) in the facility. In either, case the circulated heating water will be treated with non-foaming polypropylene glycol to prevent coil freezing at the unit on the building side.

Steam coils are not acceptable at the air handlers. If a building is connected to the steam heat systems, it shall use heat exchangers, hot water coils, and pumps. Building hot water systems shall be variable volume, with 2-way valves at coils and VFD's at pumps.

If a building cannot be added to the central campus heating water system, the heating system shall be gas boilers. The University prefers stainless steel heat exchange condensing boilers with modulating burners and variable pumping system. The second preference is for cast iron sectional hot water boilers.

All independent building hydronic heating systems shall be provided with expansion tanks and air separation system arrangements.

Boiler specification sheets shall be submitted to the owner. Facilities Management will ensure Form 502-B10 is completed and submitted to MDEQ.

- 10. Chillers** - Whenever practical, it is desired to add new buildings' cooling load to the campus chilled water loop. The loop operates with 45°F water.

Building pumps that are connected to the chilled water loop shall pull off the loop supply; pump through the building, and back into the return loop. Any pump connected to the loop shall have a check valve installed with it to prevent the pump from turning backwards. Chilled water systems connected to the loop shall be variable flow systems, using predominately 2-way control valves at the coils and VFD's at the pumps.

If chillers are to be installed for a building that is too far from the loop, the University prefers:

- Scroll compressors for chillers in the 15-60 ton range
- Screw compressors for chillers in the 60-120 ton range
- Centrifugal compressors for chillers above the 120 ton range, with a minimum efficiency of .58 kw/ton at design conditions

- 11. Water Treatment and Freeze Protection** – Chilled and heating water systems connected to the loop do not require any water treatment equipment, though all the systems are to be flushed and cleaned before being connected to the University loop. During installation of chilled water and heating water lines (supply and return), the new lines should be filled and all air bled from the building system prior to opening that system to the Campus Loop piping.

Hot and chilled water loop treatment shall be added centrally. Secondary or stand-alone systems shall be treated on the secondary side or at the building.

Glycol used for freeze protection, of air handling and applicable air terminal unit (ATU) coils susceptible to freezing, shall be polypropylene glycol; non- foaming.

The University has a water treatment contract with a vendor. The water treatment equipment provided for hot water, steam, and cooling tower systems shall be coordinated, by the Design Professional, with that vendor, with references in the Contract Documents.

- 12. Variable Frequency Drives** - VFD's for fans and pumps shall have:
- Key pad operation with alphanumeric display
 - Pulse width modulated output wave form
 - 1-10 vdc input control signal fully wired bypass with magnetic contactors
 - Toggle switch selector in a proper and applicable NEMA 1 enclosure
 - Bypass panel utilizing mechanical contactors
 - BACNET communications capability
 - Electrical safety protection from under/over voltage, loss of phase, and phase reversal
- 13. VAV Boxes** - VAV boxes must be provided with butterfly dampers with external shafts onto which a quarter turn actuator may be installed.
- 14. Network and Server Rooms** - Consideration shall be given to cooling and humidity control in rooms that will house heat sensitive computer network/ servers. Continued growth in use of technical equipment makes the issue mandatory.

- 15. Controls** - With few exceptions, all buildings are being installed with DDC controls that are compatible with the University's campus wide Andover System, or Johnson Controls. The Design Professional shall specify, through an Allowance, Andover System and Johnson Controls, for bidding purposes, unless otherwise directed by the Department of Facilities Management, where the existing DDC controls that will remain, in a facility, exceeds 50% of the total installation after the Project is complete. Controls shall be limited to those two manufacturers.

Coordinate all HVAC operational and monitoring controls with Facilities Management Engineers.

All controls shall be easily accessible for operations and maintenance operations, including above and below ceiling locations. Provide access doors when inaccessible ceilings are included in the Project, at control junction boxes, controllers, sensors, and other locations requiring periodic maintenance or replacement.

16. Control Specifications

a. Scope

- The building HVAC control system shall be the DDC electric type.
- The Contractor shall provide all DDC controllers, control panels with terminal strips, VAV box damper actuators, and a set of control drawings showing termination points in the control panels and wiring schematics for electronic HVAC controls. The Contractor shall be responsible for providing and installing all control wiring in an approved raceway, sensors, actuators other than those that are factory installed and the VAV box actuators provided with the equipment, control valves, dampers, and fittings required to make the controls function as described by the drawings, specifications, and point list. The Contractor shall be responsible for programming the controllers and interfacing the system with the campus's existing system(s). Site specific animated custom graphics with periodically updated monitoring temperature, pressure, air flow, water flow, load, alarms, etc. shall be displayed.

b. Equipment

- i. **Statuses** - Fan and pump status shall be monitored with a current switch placed around motor leads.

ii. **Control Valves**

- **1 and smaller** – electronic DDC ball valves with bronze bodies and female NPT threads, blowout proof stem design, glass reinforced Teflon thrust seal washer, adjustable packing gland screw, stainless steel ball and stem. Valves ½” and smaller shall be two-position. Larger valves shall be modulating type.
- **1¼ and larger** – electronic DDC globe valves with bronze bodies, female NPT threads, stainless steel valve stems, brass valve plugs, EP V-rings for water application and Teflon V-rings for steam application.
- **Water**
 - **Chilled water** – 2 way or 3-way modulating, normally closed, rated for 250 psi
 - **Hot water** – 2 way or 3 way modulating, normally open, rated for 250 psi
 - All control valves shall be rated for a minimum 100 psi positive shut-off.
- **Steam** – 2 way modulating, normally closed, rated for 150 psi pressure ratings.
- **Actuators**
 - 2 position – 24 vac input power, drive both ways, spring return.
 - Modulating – 24 vac input power, positive positioning, responding to a 1-10 vdc or 4–20 ma signal with a gear or cam driven design, visual valve position indicator, manual override button or tri-state, drive both ways, and spring return. It shall be equal to Delta, Belimo, or Barber Coleman, with minimum 80:1 turndown.

iii. **Damper Actuators**

- **VAV Box damper actuators** – shall be provided as an integral part of the VAV box DDC controller provided by with the Project.
- **2 Position** – 24 vac input power, drive both ways, gear driven design, with actuator designed to be attached directly to damper shaft, with spring return.
- **Modulating** – 24 vac input power, drive both ways, gear driven design, with actuator designed to be attached directly to damper shaft, responding to a 1-10 vdc input signal. Actuators shall include spring return.

iv. Electrical Requirement for Control Equipment

- **AC power to DDC controllers**
 - The Electrical Contractor shall be responsible for running a dedicated 110 volt AC circuit to the DDC control panels provided and installed by the Controls Sub-Contractor, including all VAV box and fan coil controllers.
- **Communication And Control Wiring**
 - The Contractor shall utilize a minimum of 22 gauge, plenum rated, twisted pair cable for low voltage control wiring. The University shall be responsible for providing the fiber line connection from the building to the University's existing EMS system network, and assign the necessary IP address(es).

v. Installation

- The Contractor shall install the control panels in the locations shown on the control drawings and in such a way that they are easily accessible. Wiring to the panels, actuators, and sensors shall be run in the appropriate raceway in mechanical rooms and in exposed areas.
- The Contractor shall be responsible for providing and installing all sensors, control valves, damper actuators, and statuses called for on the control drawings and EMS point list. The Electrical Contractor shall install an on/off switch in the 110 volt power service to each VAV or fan coil unit box controller.
- The Electrical Contractor shall be responsible for providing and installing room sensor raceway and boxes concealed in walls, unless otherwise approved by the University, to match existing building/wall constraints. In general, boxes and raceways in finished spaces shall be concealed, except for opening of boxes for accessibility. A 2" x 4" box for sensors should be installed roughly 5 feet off of floor, or as appropriate, and conduit shall turn out 6 inches above the ceiling. Label box and conduit with spray paint or other marking device to indicate that it is for space sensor.

- 17. Energy Management System 120 Volt Circuits** - The Electrical Engineer must coordinate with the Mechanical Engineer regarding the power requirements of the energy management system. The Electrical Contractor is to run 120 volt dedicated circuits to all EMS controllers, 10 controllers per 20 amp circuits. Each VAV box and air handler will have an EMS controller, as will the boiler room and other HVAC equipment rooms.

The Electrical Contractor is responsible for installing ½ inch room temperature sensor conduit and 2" x 4" boxes in the walls at locations shown on the mechanical drawings, or as directed by the Mechanical Engineer. The Electrical Contractor shall stub out the conduit above the ceiling, and mark the end of the conduit and the box with spray paint, designating it as a room sensor conduit.

R. ELECTRICAL SYSTEMS

1. Codes and Standards

All electrical designs shall comply with national, state and local codes. The consultant shall incorporate into the design, as a minimum, the industry standards and design criteria in the following references:

- National Fire Protection Association (NFPA) Standard 70 National Electrical Code

All other applicable NFPA Standards:

- American National Standards Institute (ANSI) Standard C2 National Electrical Safety Code
- National Electrical Manufacturers Association (NEMA) standards for materials and products

2. City Meters – Coordinate with Facilities Planning when projects are considered within City of Oxford.

3. Electric Distribution System

The electric distribution system serving the Campus is owned and maintained by the University. The primary voltages are 12,470Y/7200 three phase, four wire or 4160Y/2400 three phase, four wire. If a connection to the 4kv system is necessary, a dual voltage transformer will be specified in preparation for future conversion to 12kv.

The Design Professional shall coordinate with the University Utility Engineer for specific methods and details concerning those items and work to be provided under the contract documents. If testing of existing primary conductor is necessary and required, testing of new primary conductor shall be done by a certified independent company.

4. Service Entrance - Provide only one service entrance per building except where otherwise specifically permitted by the Owner.

Service entrance equipment shall be switchboard, panel-board or (where the building is very small) a fused disconnect. Overcurrent protection for the entire building shall be by single main device.

Service entrance switchboards shall have at least two spare breaker spaces, each fully provisioned and sized for estimated future loads.

Service entrance panel-boards shall have at least three 3-pole spare breaker spaces, each fully provisioned and sized for estimated future loads.

If ground fault protection is provided on the main overcurrent protection device, ground fault also shall be provided on feeder devices in the same switchboard or panel-board. All ground fault equipment shall be adjustable.

All new or renovated fraternity or sorority houses shall have a main disconnect on outside of building.

5. Building Power Distribution System

- a. **New Buildings** - The power distribution system shall separate life safety and emergency, lighting, power and mechanical loads into dedicated panel-boards with dedicated feeders originating from the service entrance equipment. Sub-panel use within the separate load categories will be permitted.
- b. **Renovations and Small Additions** - The consultant shall separate loads as much as possible without adding more panels merely to attain separation.

6. Conduit

Duct-banks for primary voltage shall be either rigid galvanized conduits or concrete-encased PVC.

Primary electric duct banks shall be concrete encased PVC, or if approved, rigid galvanized. Each PVC conduit will be supported and completely encased in concrete with a minimum of 3 inches on all sides. The number of bends will be minimized and all bends shall be long-radius types. All duct-banks shall be buried no less than 36 inches below finished grade or finished pavement. All empty conduits shall be left cleaned and with a 100 pound test nylon pull cord. Primary conduit runs shall be approved by a representative of Facilities Management before being encased in concrete. ALL concrete for duct banks shall be integrally died orange in color.

Minimum home run conduit sizes shall be $\frac{3}{4}$ " (interior) or $1\frac{1}{4}$ " (exterior). Provide two coats of asphaltum or bitumastic paint to all underground metallic conduits that are not encased in concrete.

Warning Tape – Place 2", red warning tape 12" above duct banks. Tape shall say "CAUTION BURIED ELECTRIC LINE".

7. **Directional Boring** – Utility lines such as electrical cables and telecommunications cable shall be exposed at cross points before directional boring process begins.

8. Wire and Cable

All wiring shall be #12 AWG type THHN/THWN minimum, except for fire alarm, communications and control systems. For these special systems, cables approved by the respective system manufacturer may be used.

All conductors shall be copper. **Aluminum is strictly prohibited.**

All medium and high voltage phase conductors shall be single-conductor, copper-shielded, insulated power cable, rated 15 KV. Circuits shall include a separate 600 volt neutral.

All primary conductors shall be single conductor, 15kv with concentric neutral.

Do not mix 277/480 and 120/208 conductors in the same raceway, pull box or junction box, except where control wiring is a different voltage than power for the same system.

System wiring shall be color coded as shown below:

<u>208/120 volt system</u>	<u>480/277 volt system</u>
Phase A – Black	Phase A – Brown
Phase B – Red	Phase B – Orange
Phase C – Blue	Phase C – Yellow
Neutral – White	Neutral – White
Ground – Green	Ground – Green

One set of the electrical riser diagrams shall be mounted near the main switchgear. The drawing(s) shall be protected by a frame with clear protective material.

9. Devices

Provide receptacles in all corridors every 50 feet on center and no further than 25 feet from the end of the corridor. The branch circuit shall be dedicated to corridor outlets only.

Provide receptacles in each stairway landing and at exterior doors. Exterior receptacles shall be GFCI, weatherproof types.

10. Panel-boards

- a. **General Requirements** - Panels generally shall be 25% spare capacity, consisting of spare breakers and/or spare spaces. All spare spaces shall be provided with all hardware installed from manufacturer.

No single-phase panels shall be installed in a three-phase system.

Bussing shall be copper (no aluminum permitted) with all current carrying parts plated.

Neutral bussing shall be full-size with an appropriate lug for each out-going circuit (which requires a neutral connection).

Future spaces shall be fully bussed, complete with all necessary mounting hardware (without the future circuit breaker) and located as shown on the panel schedule.

- b. **Equipment and Circuit Identification** - All main distribution panel-boards, branch circuit panel-boards, disconnect switches, motor control centers, and motor starters shall be identified with permanently attached name plates. Circuit directory cards shall be accurate and neatly typed. Mark all electrical boxes to denote panel-board and circuits that pass through or terminate in the box.

11. Circuits

- a. **Circuit Breakers** - Circuit breakers shall be thermal-magnetic, molded case, bolt on types, with a permanent inverse time current overload and instantaneous magnetic tripping unit, unless otherwise shown.

Overcurrent devices containing solid state trip units shall be set up by the manufacturer.

- b. **Branch Circuits** - Wherever possible, lighting branch circuits shall be 277 volt, single-phase. When 120/208 voltages are used, provide separate circuits for lighting loads only.

Motor branch circuits shall be 480 volt, three-phase, wherever possible. Large motors, such as chiller motors, shall be fed directly from service entrance equipment, wherever possible.

- c. **Life Safety Circuits** - Life safety power circuits shall include fire alarm, warning systems, and emergency communication systems.

Life safety lighting circuits shall include emergency exit lighting and exit signs. Backup power shall be provided by an emergency generator or individual 90 minute minimum batteries.

Provide separate dedicated wiring circuits in facilities with emergency generators. For facilities relying on battery backup light fixtures, power for each fixture shall be taken from the local lighting circuit, but connected ahead of all switching.

12. Interior Lighting

- a. **Energy Efficiency Fixtures and Lamps** - The energy efficiency of systems and equipment is an essential part of the University's design philosophy.

Energy efficient lighting systems are required. LED fixtures shall be used in most spaces. HID and Fluorescent lighting fixtures may be used where appropriate.

If used, fluorescent fixtures generally shall have high-color-rendering T-8 lamps and electronic ballasts.

Incandescent lamps, because of their poor efficiency, shall be used only where more efficient bulbs are unsuitable.

- b. **Light Fixture Approval** – The Design Professional must submit to Facilities Planning, for approval, cut-sheets on ALL light fixtures that are to be used.
- c. **Lighting Controls** - Lighting within key spaces shall be designed and specified for occupancy sensor controls. The Design Professional shall coordinate this item with the University prior to the start of Schematic Design.
- d. **Maintenance Accessibility** - Lighting design shall emphasize accessibility for re-lamping, cleaning, and maintenance.

- e. **Stairwell Fixtures** - Stairwell lights shall be wall-mounted fluorescent or HID fixtures that can be reached by hand from the landing floor or located over the landing to permit the safe use of ladders.
- f. **Life Safety** - Life safety, exit and night lighting fixtures shall not be equipped with switches. Exit signs shall have LED-type lamps. All other light fixtures shall be switched or controlled.

13. Exterior Lighting

- a. **General Requirements** - Exterior and site lighting fixtures shall be served by separate circuits controlled by a photocell. Parking lot and other area lighting fixtures shall be circuited separately from stairway, porch, or canopy lights; however, the same photocell may control both kinds of lighting.
- b. **Light Fixture Approval** – The Design Professional must submit to Facilities Planning, for approval, cut-sheets on ALL light fixtures that are to be used.
- c. **Campus Lighting Standards** – The exterior lighting on Campus shall be designated by six (6) “Lighting Zones”. Refer to the “Site Lighting Standard” Plan.
- d. **Lighting Zone 1 – Campus Core** - Decorative light fixtures and poles. (ie. globes, acorns, etc.): Globe site lighting fixtures with fluted bases shall be coordinated by the Design Professional with Facilities Planning on a project by project basis, as to the type of globe and pole to be used. Coordination shall occur during the Design Development Phase.
- e. **Lighting Zone 2 – Primary Vehicular Roads** - Decorative LED acorn pole lights. (Hill Drive, Coliseum Drive, Fraternity Row, Etc.)
- f. **Lighting Zone 3 – Secondary Vehicular Roads** - LED 30'- 0” pole lights (Jeanette Phillips Drive, Chapel Lane, Etc.)
- g. **Building Lighting** - Building entrances, walkways, and parking areas shall be properly illuminated for safety and security. All fixtures shall be approved prior to the end of the Design Development Phase. Refer to the Site Lighting Standards Plan on the following page.

Low-level walkway and bollard type lights are not recommended and shall be reviewed/approved by Facilities Planning on a project by project basis.

Site lighting fixtures shall be limited to the following, or their equals:

- “LaneVue LED Roadway Lighting” by Holophane
- “Granville Premier Series” Decorative Outdoor Light by Holophane
- Globe lighting fixtures by Spring City (limited use with Facilities Planning approval only).

14. Emergency Generator Systems

Emergency generators shall be located in a suitable protected area and shall readily accessible by vehicular crane and other maintenance vehicles.

The Contractor shall provide the University technical literature, including a manual of sequential operations, recommended preventative maintenance, parts list with recommended spares and all pertinent control manuals and wiring diagrams, at the conclusion of the project. In addition, the Contractor shall instruct the maintenance staff in the operation of the system and in all required periodic maintenance.

The engine shall operate on diesel where practical. However, natural gas will be considered on a case by case basis.

Exterior generators shall have enclosures that are tamper proof and weatherproof.

Generators larger than 30 kw must be load-banked after installation. Exhaust silencers shall be rated hospital-grade.

Generator specification sheets shall be submitted to Facilities Planning. This information will then be given to Facilities Management to ensure that the required Form 502-B10 are completed.

15. Meters

All new construction shall have permanent electric meters installed and tested. New or replacement meters shall have readable face and electronic pulse for transmitting data to a building automated system.

All meters (gas, water, and electric) shall have conduit run during construction to nearest energy management system enclosure for future connection.

16. Fire Alarm and Detection System

Fire alarm system shall consist of a zoned, non-coded, electrically supervised, addressable system with verification and general alarm. System shall be installed in conduit.

Actuation of an initiation device shall cause the following actions:

- Activate general alarms (audible and visual)
- Activate associated zone indicators (audible and visual)
- Activate provisions to close all smoke doors.
- Activate provisions to shut down all air supply units.
- Transmit signal to Central Fire reporting station in the Mechanical Plant on Gertrude Ford Boulevard.

Furnish all necessary hardware required to accomplish this function and coordinate installation of all equipment required to make system compatible with existing receiving system at the Mechanical Plant on Gertrude Ford Boulevard.

System wiring shall be Class B as defined by NFPA. Any system circuit wiring ground or open, or any system component failure shall cause all trouble signals to operate. System components shall be protected against transient over voltages by General Electric Series L metal oxide varistor or equal.

Smoke detectors of proper size and type shall be furnished and properly installed in each of the air handling duct systems as required by NFPA.

Main terminal cabinet shall be equipped with a drill switch which, when activated, shall cause only the general alarm audible and visual signals to activate but no other general alarm functions shall be affected.

A remote 80 character LCD annunciator shall contain separate trouble and alarm description for each zone, and internal audible trouble and alarm signal. Device and zone identifications shall be by an area description or device involved and shall be by means of character description.

Main terminal cabinet shall have battery standby complete with metered charger. Batteries shall be maintenance free sealed type capable of operating system for 60 hours. Charger shall be rated for recovery of batteries from full discharge in 24 hours or less.

The University shall be supplied with all necessary programming software and license for system operation and maintenance. Provide a hard copy of programming, manuals, and training to maintain fire alarm systems.

An existing fire alarm system's components, to be maintained and reused in a construction project, shall be protected from damage and contamination during construction.

Contract installers shall complete NFPA Fire Alarm System Record of Completion included in Section 6.

S. COMMUNICATIONS SYSTEMS

Communications Systems - Questions regarding the requirements should be directed to the University's Telecommunications Center at 662-915-5922.

The Design Professional shall contact the University's Telecommunication Center for a copy of the most recent edition of the University's 'Standards for Telecommunications Wiring. This shall occur no later than the Design Development Phase of the Project.

Telecommunication rooms must be large enough to accommodate the "telecom" equipment. In multi-story buildings they should be stacked with adequate vertical chase connections. They shall be located as centrally in the building as possible to minimum the length of wire runs.

Provide electrical outlets on each wall of room with vertical conduit to above ceiling location. Telecommunications wiring shall be installed prior to the installation of the ceiling grid and tile system.

Master Time System – The Project's necessity for the extension of the University's master time system shall be determined on a project by project basis. The Design Professional shall coordinate the need for clocks with the end user during the Pre-Design Planning Phase. Generally, clocks are not provided unless requested by a University Department. The University Standards for the Master Time System shall be followed: Primes Wireless.

T. ELECTRONIC SAFETY AND SECURITY SYSTEMS

Security and Access Control Systems - Project necessity for security, cameras, and/or access control systems shall be determined by the project building committee during the programming and design development stages of the project.

If systems are necessary, functional requirements of the systems shall be determined by the end users of the facilities, in conjunction with the design team.

Equipment and system operation shall be approved by the Department of Facilities Management, Contractual Services, University Police Department, and any other departments involved with operating the systems.

Access Controls – All doors with electronic locks shall have keyed overrides. The keyed system shall be specified by Facilities Management.

U. EXTERIOR IMPROVEMENTS

1. Roads, Streets, and Drives

All roads, streets, and walks necessary for the full development and integration of the project into the campus system shall be included. Road, street, and walk layouts are to be reviewed and approved by the Department of Facilities Planning, Department of Facilities Management, University Police Department, Department of Parking & Transportations, and Landscape Services.

All projects shall consider access to building(s) for maintenance, service deliveries, emergency services, etc.

Bike lanes shall be included on both sides of all roads and streets. Their layout will be reviewed by the aforementioned UM departments.

Pavement design should be project specific with factors being traffic volume, percent of heavy vehicles, soil bearing capacity, and other factors not mentioned. The following is a guide for road and street design.

Heavy Duty (bus):

Sub grade density of 95%

12 inches of base, either crushed limestone or equivalent sub grade treatment

6 inches of MDOT grade asphalt paving

Total Road Structure of 18 inches

Light Duty (cars only – limited use)

6 inches of crushed limestone base

4 inches of MDOT grade asphalt

Total Road Structure of 10 inches

Street Markings shall be liquid or heat applied thermoplastic material with a minimum thickness of 90 mil. Follow the “Manual on Uniform Traffic Control Devices” for the layout of symbols, arrows, stop bars, etc.

Parking Lots shall be marked with paint line 4 inches wide. Use white for regular parking and blue for ADA parking.

2. Bicycle & Pedestrian Considerations

The University of Mississippi Master Plan and the Design Philosophy of the Department of Facilities Planning values accommodating private motor vehicles, mass transit vehicles, bicycles, and pedestrians in equal measure as deemed appropriate by the context. The university will facilitate and support bicycle and pedestrian networks on campus through the following design and engineering efforts.

At the Schematic Design Phase of each project affecting transportation, roads and/or paths on campus, the Design Professional shall identify the ways in which the needs of pedestrians and bicyclists are met and an explanation of why the selected treatments were chosen. The Active Transportation Advisory Committee will review and provide input to the proposed design solution as pertaining to bicycles and pedestrians.

Ensure end-of-trip facilities are adequate and available in sufficient quantities, such as bike parking and shower facilities; especially when campus buildings are constructed or extensively renovated.

Bicycle facilities shall conform to current best practices and guidelines—such as the National Association of City Transportation Officials *Urban Bikeway Design Guide*, American Association of State Highway and Transportation Officials *Guide for the Development of Bicycle Facilities*, Federal Highway Administration *Separated Bike Lane Planning and Design Guide*, and relevant publications from the Mississippi Department of Transportation.

3. Curbs, Gutters, Sidewalks, and Driveways

Concrete curbs and gutters must be specified. Adequate storm drainage will be installed. Curbs and gutters must be reinforced with three 1/2 inch diameter steel rods equally spaced. Where practical, curbing machine may be used if approved by the engineer. Otherwise, metal or wood forms will be used.

Sidewalks must be a minimum of 8'- 0" wide at major pedestrian thoroughfares and where they abut curbs being used for wheel stops in parking areas. All sidewalks shall have less than 2 percent cross-slope. The Design Professional shall coordinate the required sidewalk width with the Department of Facilities Planning during the schematic design phase.

Concrete, for the sidewalks, should be at least 3500 psi, reinforced with wire mesh or fiberglass and broom finished. Provide expansion joints of the mastic type and design tooled joint pattern. Tooled joints shall be expertly done and on 4'- 0" intervals on 8'- 0" wide sidewalks. Provide a 3" wide tooled window pane at all joints. All projects must specify a mockup of at least 8' x 8' with two intersecting, tooled control joints to determine a standard for all concrete finishing on the job.

Design Professionals must design ample sidewalks around new buildings for pedestrian circulation and ADA access. Curb cuts and ramps are to be installed as needed and shall be designed in full compliance with the current edition of ADA. All curb cuts shall receive the standard University Tactile Paver.

Sidewalks shall be designed to provide a continuous path of travel from the new building, or existing building, to existing sidewalks or parking lots within or adjacent to the boundaries of the Project site.

4. Paving Specialties

All parking spaces and aisles shall have less than 2 percent cross-slope in every direction. All ADA parking spaces shall have access to a minimum 5'- 0" wide loading area. All regular ADA parking spaces shall be a minimum of 8'- 0" wide. All van ADA parking spaces shall be a minimum of 11'- 0" wide. All parking areas shall have at least one van space. All ADA parking spaces shall have an accessible route provided to the building the parking lot serves without requiring the user to go into the parking lot.

ADA Markings shall be traffic grade paint. 40" x 40" blue background with white wheelchair logo. Follow all ADA and ABA guidelines when designing new parking areas and sidewalks.

ADA metal signs shall be 12" x 18" blue on white. Van signs shall be 12" x 6" placed under the parking sign as needed. Signs shall be installed a minimum of 6'- 0" above the ground to the bottom of the sign on a 2" black pole. See Section 6 for details.

Signs to be equivalent to style R9-6B, R9-013 from the National Sign Co. in Ottawa, KS.

5. Landscape Irrigation

The Design Professional shall be aware that the University utilizes automatic water irrigation for all of the lawns and landscaping surrounding its buildings. Consideration for irrigation is to be included in the site work design, including water stub-outs, valves, controllers, backflows, exterior electrical service, and sleeves under sidewalks and drives.

An electrical disconnect shall be provided on the outside of the building for an irrigation controller that will be provided and installed by the Owner. The Design Professional shall coordinate this work with the Directors of Facilities Planning and Landscape Services, or their representatives during the Design Development Phase of the Project.

4" Schedule 40 PVC sleeves shall be provided under sidewalks and service drives. Two (2) sleeves, side-by-side may be required in some locations. Sleeves shall be a maximum of 12" below grade. The sleeves shall extend a minimum of 12" outside the edge of the concrete and must be turned up with a 90 degree elbow up to 24" above the finish grade and capped with a PVC cap. Coordinate requirement with Landscape Services and Facilities Planning.

Sleeve locations shall be marked by the Contractor with a "V" stamp in the sidewalk or pavement surface where the sleeves pass below the concrete. A "V" stamp can be checked-out from Landscape Services via a Work Order issued by Facilities Planning. The Work Order will be charged Two Hundred Dollars (\$200.00) if the stamp is not returned to Landscape Services in the condition it was originally received by the Contractor. The \$200.00 will be deducted from the Construction Contract via change order.

6. Site Improvements

Handrails and Guardrails – Unless otherwise approved by Facilities Planning, the Design Professional shall use the University’s standard guardrail design for all site walls or areas where adjacent surfaces exceed 30 inches in height. See Section 6 for details.

Bollard Standards – All bollards are to be powder coated black. Height of bollards shall be 31 inches from ground to top of bollard.

Bollard Types:

Traffic and Pedestrian Control Bollard – 2½” bollard made of schedule 40 metal pipe with chains to be used in traffic and pedestrian control are to be placed at 9’-0” O.C. Chain to be 3/16” GR 30 proof coil. Chain tabs to be located 5” from top of bollard. Bollards shall be purchased from the Landscape Services Department.

Removable Bollard – 4” bollard made of EMT conduit pipe used for roadways are to be placed at 6’-6” O.C. The bollard must have a spring-loaded, lockable cap receiver. 2” DOT approved, red and white reflector tape must be placed on top portion of bollard when in roadways. Bollards shall be purchased from the Landscape Services Department.

Dumpster Location(s) & Pads - The Design Professional is to work into the overall site plan for new building construction a suitable dumpster location that is easily accessible by the garbage trucks and custodial staff.

The approach to dumpster pads shall be configured of a minimum 12’ x 12’ concrete pad structurally sufficient to support the dumping operation and a sidewalk should be provided to the dumpster to allow custodians from the building to push a cart directly to the dumpster.

7. Grading, Lawns, and Plantings

Grades shall develop natural configuration of the grounds where possible. Slopes less than 4 to 1 shall be retained structurally. The final grading must be within a constant 1/10” from the designed final grade. There shall not be any dips, ruts, etc. in the final grading. All areas not being planted should receive sod installed by the Contractor.

The University has developed a list of specifications and plant material to be used on campus. The University also has Landscape Architectural Services (Design and Installation) under separate contract. The Design Professional shall discuss sodding requirements with the University’s Landscape Services during the Design Development Phase of the Project.

The landscaping estimate from Landscape Services shall be included as part of the Project Budget.

Absolutely NO “Net” straw erosion control blankets, geotextiles, or geomembranes are to be used in planting areas on Campus.

Absolutely NO bed edging, metal edging, or edging of any sort are to be used on Campus.

V. SITE UTILITIES

1. Water Utilities, Distribution Equipment, and Wells

No one shall be permitted to tap into aquifers under University Land without explicit written approval from the University.

No construction operations shall extend into the aquifer(s) below University property without the review and approval of the Office of Facilities Management.

This includes the Main Campus and any satellite campus or properties.

2. Sanitary Sewerage Utilities

Sanitary sewer lines located within the project boundaries must be video inspected prior to Substantial Completion with a video camera to document the clean, sound condition of the pipes. All pipes must be free of debris and there must not be any obstructions within the pipes at the completion of the project. This includes all existing pipes and new pipes.

3. Storm Drainage Utilities

Storm sewer lines located within the project boundaries must be video inspected prior to Substantial Completion with a video camera to document the clean, sound condition of the pipes. All pipes must be free of debris and there must not be any obstructions within the pipes at the completion of the project. This includes all existing pipes and new pipes.

Curb inlets shall be by EJ Iron Works, 7030 Series, T1 Back, with M2 or M6 grate.

Catch basins shall be V-5600 or V-5700 Series.

Use only concrete flared end sections at pipe discharge points, even if using ADS pipe. No ADS or other plastic flared ends shall be permitted.

Use Arkansas field stone or river rock for erosion control and ditch work at flared ends. No limestone rip-rap shall be permitted.

4. Fuel Distribution Utilities

Natural Gas Pipeline Construction Reporting Requirements

The Design Professional shall provide within the Project Manual, instructions to the Contractor in regards to reporting requirements to the Pipeline Safety Division of the Mississippi Public Service Commission for construction work, in excess of an estimated construction cost of \$8,000, for meters and exterior and interior pipelines containing either natural gas or any other hazardous material. The reporting to the Division of Pipeline Safety shall be provided not later than five (5) working days prior to the start of any such construction. A copy of the completed form shall be returned to the Department of Facilities Planning. Also see Operations, Maintenance and Emergency Planning MDPC Tolerance Zone.

5. Electrical Utilities

- a. **Electric Distribution System** – The University’s primary voltage characteristics are described in the Electrical Systems Section of this manual. The University Utility Engineer and the Design Professional will agree upon the source location in the Design Development Phase of the project. The project will provide a minimum of the transformer required to serve the proposed building and the primary conductor from the University’s source to the transformer.

The normal delivery voltages will be 120/208 or 288/480 pad mounted transformers. Transformers shall be located in a safe location agreed upon by the Design Professional, University Utility Engineer, and Facilities Planning. Transformers will be connected delta primary with wye secondary. Transformers shall be the standard product of an approved transformer manufacturer and (among other standard protection fuses) shall have a primary load break switch.

Provide two coats of asphaltum or bitumastic paint to all underground metallic conduits that are not encased in concrete.

- b. **Metering** – A form S-9 meter socket shall be furnished and normally attached to the transformer on the secondary side. Current transformers shall be provided and sized according to the available current of the transformer. Meter will be provided and installed by the University.

All services shall be metered by KWH/KWD equipment that has 30 minute demand registers.

Meter must be installed and/or tested by a certified meter company.

- c. **Distribution Transformers** - Transformers shall be the standard product of an approved transformer manufacturer. They shall conform to the owner’s specifications.

Transformers shall be located outside the building and accessible by vehicular crane. Orientation with respect to buildings, structures, and landscaping shall provide adequate open space in front of the transformer for service operations.

- d. **Service Entrance** - Provide only one service entrance per building except where otherwise specifically permitted by the Owner.

Service entrance equipment shall be switchboard, panel-board or (where the building is very small) a fused disconnect. Overcurrent protection for the entire building shall be by single main device.

Service entrance switchboards shall have at least two spare breaker spaces, each fully provisioned and sized for estimated future loads.

Service entrance panel-boards shall have at least three 3-pole spare breaker spaces, each fully provisioned and sized for estimated future loads.

If ground fault protection is provided on the main overcurrent protection device, ground fault protection shall also be provided on feeder devices in the same switchboard or panel-board. All ground fault equipment shall be adjustable.

All new or renovated fraternity or sorority houses shall have a main disconnect on outside of building.

Testing of new or old underground primary cable shall be tested by a certified independent company.

Minimum home run conduit sizes shall be 1 ¼" (exterior).

The University discourages the use of bus-ways in electrical system design. Service entrance bus-ways are prohibited.

6. Communications Utilities

All communications utilities are to be installed per University Telecommunications specifications available at

<http://www.olemiss.edu/depts/telecommunications/specification.html>

Section 6:

Forms and Miscellaneous Documents

SECTION 6: Forms