

Baseline Design Standards For Student Housing



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INTRODUCTION

These Baseline Design Standards for Student Housing are provided as a resource for design & construction professionals and staff at the various Institutions of the University System of Georgia (USG) who are engaged in the design and planning of new student housing. These guidelines represent the collective experience of the USG and its Institutions regarding the suitability and performance of the various materials and systems that may be considered for use in college and university student housing. It is not our intent to limit the ingenuity or originality of the design & construction professionals but to convey our minimum quality standards, preferences, desires, and expectations.

Design and construction professionals are encouraged to bring forward ideas and suggestions that improve the quality of the facility; however variances from these Standards are not permitted without explicit approval by the USG. Requests for variance from these Standards must be submitted in writing. The USG will not withhold approval if the design and specifications do not materially alter the Standards. If specific site conditions, codes, rules, regulations, or laws warrant a deviation from the standards, the USG should be immediately notified prior to proceeding with the design.

Some USG Institutions have developed standards and specifications that cover the design of all types of facilities on their campus. Institution Standards often provide a great amount of detail but are usually not oriented toward student housing design. Information contained in institution standards should be considered in conjunction with these Baseline Design Standards when designing student housing however the minimum standards found here shall be met or exceeded in all instances.

GENERAL REQUIREMENTS FOR PLANNING, DESIGN, AND CONSTRUCTION

1. *General Design Guidelines*

- a. Site Planning
 - i. The location for new student housing should be decided only after careful review of the campus master plan and guidance from the institution.
 - ii. Buildings, roads, parking lots, detention ponds, shall be sited to minimize the loss of trees and use as little land area as possible.
 - iii. Underground storm water detention is preferred.
 - iv. Roadways, sidewalks, curb cuts, stairs, and access ways shall connect the Student Housing facility with the other parts of the campus and the Institution's roadway system as appropriate.
 - v. Pedestrian circulation should be considered in relation to the campus master plan.
 - vi. Patios and other areas for student congregation shall be included where appropriate to the surrounding areas and the master plan objectives.
 - vii. Transformers, Backflow Preventers, Dumpster Enclosures and other service structures shall be located in non-prominent locations and screened as needed to avoid being visually distracting.
 - viii. Backflow devices will be set above ground on a concrete pad and hotbox enclosed.
 - ix. Fire truck access shall be coordinated with the local fire department.
 - x. Design shall meet ADA requirements for both internal and external access. Consideration shall also be made for accessibility to other areas of campus outside the limits of the site.
- b. Landscaping
 - i. Coordinate with the institution for removal of trees and protection/saving methods for tree save areas. Local tree ordinances shall govern.
 - ii. Landscaping shall be appropriate to the climate and reflective of the landscaping on the remainder of the campus. Consideration should be given to plant materials that are easily maintained and attractive.
 - iii. Grass lawns and open areas shall be sodded or seeded with a turf that is consistent with the surrounding existing grassed areas or a turf that is approved by the Institution.
 - iv. All landscaped and grassed areas shall have an irrigation system, with controls, that will connect to the public water with separate meter or the underground storm water storage system if provided.
- c. Utilities
 - i. See the Sharepoint site for information regarding existing utility services.
 - ii. Unless noted otherwise, all utilities shall be connected to existing public trunk lines at the right of way and brought to the new facility. The developer is responsible for the permitting and payment of all tap fees or impact fees.
 - iii. All utilities are required to be metered for each building.
 - iv. The preference is to avoid the use of equipment that requires natural gas.
- d. Exterior Lighting
 - i. All lighting must comply with campus standards for fixtures, poles, lamps, etc. See the Sharepoint site for Campus Standards for exterior lighting fixtures.
 - ii. Exterior lighting shall be provided for buildings, walks, stairs, roadways, parking, etc. to ensure safety and security. Lighting is required at all exterior doors.
 - iii. LED should be strongly considered for exterior and interior lighting.
- e. Site Furniture
 - i. Site Furniture shall be provided as needed to be consistent with campus standards. See the Sharepoint site for Campus Standards for site furniture.
 - ii. Bike racks are to be evenly distributed. Provide, at a minimum, rack parking for 15% of building residents.
 - iii. The racks shall be placed on concrete pads and secured to prevent them from being moved from the designated areas.
- f. Signage
 - i. Signs should be placed appropriately to direct both pedestrian and vehicular traffic. Exterior signage shall match the Institution's Signage System
 - ii. Identification and directional signage shall be provided as required. Signage to identify spaces and units must meet the requirements of ADA.
 - iii. Signage with evacuation routes shall be posted in hallways.
 - iv. Signage that contains building diagram, emergency evacuation routes, and locations of shelter shall be posted on exit door of each suite.
- g. Service Areas
 - i. A remote, secure trash disposal area with dumpsters (adequate for the number of persons to be served) is required for the

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facility. (May require compactor with appropriate electrical service) This disposal area shall be accessible to trucks without impeding pedestrian traffic and shall be screened by an enclosure. Need 6" bollards in front of enclosure and behind each dumpster to protect walls. A (freeze proof) hose bib is required for washing down the area. A thickened concrete pad is required. At dumpster areas drive shall be minimum of 8" deep reinforced 3000 PSI concrete apron to prevent damage from front loader dumpster trucks. The apron shall extend 30' in front of dumpsters to protect the area where the truck wheels turn.

h. Security.

The design of the building and grounds must reflect the importance of student security. A comprehensive security plan will include:

- i. Emergency call stations, adequate lighting levels, and open landscaping at all parking areas and building exteriors. Emergency call boxes must match existing call boxes on Campus. Follow standards and coordinate locations with Public Safety Department on each campus.
- ii. Access control with a single point of entry into the building, door locking systems that restrict access for non-residents, security screens on all ground floor windows, and alarm systems for service and egress only doors.
- iii. A manned control desk to monitor the entrance and enforce visitation policies.
- iv. Glazed openings at all common spaces so that people can be seen inside.
- v. Interior and exterior video surveillance to cover all public spaces and all doors.

i. Building Design

- i. Each student housing facility shall incorporate the character of the campus and shall be constructed with cost-effective, durable, energy efficient and easily maintained materials.
- ii. Size, scale, proportions, and massing of new buildings must be visually compatible with the surrounding existing buildings.
- iii. Designs that include open stairways, corridors, or balconies are not acceptable.
- iv. The floor to floor height of the building shall be sufficient to allow a minimum ceiling height of 9'-0" on all floors.
- v. Design shall facilitate student interaction through use of community spaces, multi-purpose rooms and location of stairways for vertical connection.
- vi. Natural light for study rooms, community rooms, and at the end of long corridors is desired.
- vii. If wood frame "stick" construction is proposed the requirements found in Attachment A of this document for "USG Minimum Design and Construction Requirements for Wood Framed Structures" shall be followed unless prohibited by code.
- viii. A fully furnished and equipped facility is to be provided. In general, all rooms are to be furnished at a quality level consistent with furnishings found in the other housing on campus.

2. **General Requirements for Sustainable Design**

- a. New student housing will be designed and constructed in the most environmentally responsible manner possible, we encourage the exploration of all options to ensure the best outcome for each project and provide innovative solutions. The State of Georgia has set forth standards in their "Energy Efficiency and Sustainable Construction Standards for State Buildings" that are to be implemented to help achieve those goals.
<http://www.dca.state.ga.us/development/constructioncodes/publications/Energy-Efficiency-and-Sustainable-Construction-Standards-FINAL.pdf>
- b. The Energy Efficiency and Sustainable Construction Standards for State Buildings serve as a set of instructions for state agencies, design professionals, contractors, and building operators. The Standards are organized into six sections. Section One, Requirements, outlines the requirements of Senate Bill 130 and provides potential technologies and strategies in addition to a recommended timeline and scope. Section Two, Commentary and Checklists, provides supplementary recommendations in achieving the requirements and examples of the deliverable checklists for the project team to demonstrate compliance with the requirements. Section Three, Resources, provides additional resources to the team to research further information about each requirement. Section Four, Recommendations, outlines additional strategies to pursue energy efficiency and sustainable construction standards. Although achieving specific energy efficient thresholds is not required, optimizing energy performance, conserving energy, and utilizing local and renewable energy sources is encouraged and incentivized. Section Five, Incentives, provides a point scale for the Standards and an opportunity to achieve further incentives in adhering to The Energy Efficiency and Sustainable Construction Standards for State Buildings. Lastly, Section Six, Submittals, provides the deliverable checklists that must be submitted to the agency owner to demonstrate compliance with the requirements. The project team will not need to submit documentation beyond the deliverable checklists. However, the agency owner has the authority to audit each requirement and recommendation pursued by the project team to ensure compliance. Accordingly, project teams should keep all relevant documentation to prove compliance if the project is to be audited. The

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deliverable checklists in Section Six, Submittals, also serve to provide the necessary data to determine the level achieved in the Georgia Peach Green Building Rating System.

- c. Life Cycle Analysis: When developing the sustainable design approach for each project, it is highly recommended that life cycle costs and impacts be considered in final decisions regarding material and system selection. Durable, long-lasting, and non-toxic materials and systems may have a higher first cost, but generally cost less over the life of the building and also require less frequent replacement cause less air quality issues, minimize construction waste and consume fewer natural resources for new materials and systems. The life cycle analysis should include the cost, health, and environmental impact of routine maintenance, as well as the final disposition of products at the end of their useful lifespan.
- d. Appliances: It is recommended that Energystar™ appliances be provided wherever possible and available to maximize energy savings and minimize energy costs.

3. General Requirements for Quality Assurance

- a. General comments:
 - i. Quality: It is important that the design and construction of student housing projects be done in a manner that ensures that they result in well-functioning, durable, safe, secure, clean, and attractive facilities for the use of our students.
 - ii. Quality Control: Quality Control is the system which ensures that products or services are designed and produced to meet or exceed customer requirements and expectations.
 - iii. Quality Assurance is the planned activities necessary to provide a high degree of confidence in the quality of a product or service. Quality Assurance provides quality assessment of the quality control program.
 - iv. Some of the tools available to ensure quality are contracts, campus standards, design guidelines, design reviews, peer reviews, construction inspections, testing, mock-ups, and project oversight.
- b. Campus Standards: Each Campus has provided a list of materials, fixtures, furnishings, and components that are standards for this Institution. Following these standards will ensure aesthetic consistency with the rest of the campus.
- c. Design Reviews: There will be interaction with the USG and each institution in terms of design review and concurrence. The design drawings and specifications will be submitted and presented at the following milestones:
 - i. Building Program & Concept Design: The basic desired scope, program and other key elements will be provided for each institution.
 - 1. Program of building spaces
 - 2. Space/room data sheets for each space in the facility.
 - 3. Concept design studies: Graphic and narrative information necessary to describe fully the proposed solution(s) to the client. These studies shall consider land use, the environment, master plans, traffic, parking, transportation, utilities, and functional relationships.
 - ii. Schematic Design: Schematic design establishes the general scope, conceptual design, and scale and relationships among the components of the project. The primary objective is to arrive at a clearly defined, feasible concept and to present it in a form that achieves client understanding and acceptance. The secondary objectives are to clarify the project program, explore the most promising design solutions, and provide a reasonable basis for analyzing the cost of the project.
 - iii. Design Development: The primary purpose is to further define and describe all important aspects of the projects so that what remains is the formal documentation step of construction documents.
 - iv. Construction Documents: The construction documents are an extension of the design process that defines the design of the project in great detail. The construction documents serve several purposes:
 - 1. Communicate to the client and construction professional in great detail what the project involves.
 - 2. Establish the contractual obligations and responsibilities of each party.
 - 3. Basis for obtaining regulatory approvals needed to proceed with construction.
 - 4. Communicate quantities, qualities, and configuration of the work required to construct the project so that the construction professional is able to prepare accurate cost proposals.
- d. Program Manager: The BOR will engage Program Manager(s) to assist the BOR and campuses with day-to-day activities required in working with the development team for the project(s). The PM's role will work closely with all parties to help coordinate activities and facilitate the decision-making process. The PM will work to ensure that compliance with quality standards are met. The cost of the PM(s) will be paid by the Concessionaire.
 - i. Peer Reviews: The PM(s) will engage independent consultants that will provide specialized peer review of the envelope and

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structural design. These consultants will review the design, make recommendations, and perform construction inspections at the appropriate times.

- ii. Construction Inspections: The PM(s) will engage independent consultants to perform construction inspections on each project to ensure conformance with the approved construction documents.
- e. Mock-ups: The selection of the most appropriate materials and systems to meet program requirements is important for achieving a quality project. Equally important in achieving a quality project, however, is ensuring that those materials and systems are properly installed. Two key tools for ensuring proper installation are mock-ups and testing.
 - i. Required Mock-ups:
 1. A full, typical student bedroom, including all interior finishes, trim, furnishings, windows, doors, heating delivery units, and other equipment found in the room. Heating delivery units and other equipment need not be fully functional, but should include all parts that will be physically located in the finished bedroom. The color scheme should be an actual color scheme to be used in the finished project. It is recommended that the mock-up bedroom be an actual bedroom to be constructed or rehabilitated. Once approved, the mock-up bedroom should be maintained for use in confirming the acceptability of the remainder of the bedrooms in the project.
 2. A full, typical student bathroom, including all interior finishes, trim, accessories, fixtures, windows, and doors found in the room. Fixtures need not be functional, but should include all parts that will be physically located in the finished bathroom. The color scheme should be an actual color scheme to be used in the finished project. It is recommended that the mock-up bathroom be an actual bathroom to be constructed or rehabilitated. Once approved, the mock-up bathroom should be maintained for use in confirming the acceptability of the remainder of the bathrooms in the project.
 3. A typical portion of exterior wall. The mock-up shall include, in the actual color scheme to be used for the finished project, as well as associated lintels, sills, supports, joint fillers, sealants, and flashing required. The wall shall also contain a typical window of each type to be used in the project. The mock-up(s) shall include all masonry types required, associated lintels, sills, supports, framing, trim, joint fillers, sealants, flashing, mullions, and glazing required. Once approved, the mock-up(s) should be maintained for use in confirming the acceptability of the remainder of the exterior walls and windows in the project.
 - f. Required/Recommended Testing:
 - i. The Building Code requires significant testing of many materials and systems commonly used in building projects. The design consultant must evaluate testing requirements found in the code against the project scope, provide a listing of code-required testing, and incorporate the same into the design documents for each student housing project.
 - ii. Additional testing is required for student housing projects that are stick construction, see Attachment A, “USG Minimum Design & Construction Requirements for Wood Framed Structures” attached.
 - iii. Commissioning: Specific building systems are required to be commissioned under the State of Georgia standards in their “Energy Efficiency and Sustainable Construction Standards for State Buildings”, however, it should be noted that any building system can be commissioned. The design consultant should evaluate additional systems other than those identified that could benefit from being commissioned.

4. Entitlements

- a. The Concessionaire is required to obtain all governmental approvals and permits, and pay all associated costs and fees.
- b. Local authorities will provide the Land Disturbance Permit for the project and may assess impact fees for water and sewer connections.
- c. The State Fire Marshal will be the sole authority to conduct plan reviews, issue construction permits, and Certificate of Occupancy.
- d. Typically the local health authority will perform plan reviews inspections and issue a permit prior to opening to confirm that safeguards are in place.

PUBLIC AREAS

5. Main Entrance

- a. Vestibule:
 - i. A vestibule is required at main entrance doors. The vestibule should be sized so that doors have sufficient clearance from one another to provide accessibility for the disabled

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- ii. A walk-off mat or grate is required in main entrance vestibules.
- b. Main entrance doors:
 - i. At a minimum, one pair of double doors, each leaf a minimum of thirty-six inches wide, is required at main entrances to facilitate student move-in/out.
 - ii. Main entrance doors shall be storefront anodized aluminum double-glazed to fit the design intent.
 - iii. Swinging doors at the main entrance shall have continuous “piano” hinges.
 - iv. Consideration should be given to providing automatic opening doors.
- c. Equipment Typically Provided at Main Entrances:
 - i. Card readers to control building access. Card access systems are required at each door to prevent unauthorized access to the student housing. Fully connect and integrate with existing control system on campus.
 - ii. Electric strikes controlled by card readers.
 - iii. Blue Light emergency phone device to call for help in an emergency.
 - iv. Fire alarm manual pull stations must be provided within 5 ft. of entrance (and all exterior) doors.

6. Main Lobby

- a. Finishes in lobbies are as follows:
 - i. Flooring: Floor finishes should be durable, slip-resistant, easily cleaned materials that can withstand water and dirt tracked into the building by occupants and visitors. Approved materials include stone tile, porcelain tile, ceramic tile, and carpet tiles. Mats should be placed inside and outside of all entrances and exits.
 - ii. Walls: Wall construction and finishes shall be of durable materials capable of resisting impact and gouging. Approved materials include impact-resistant gypsum board materials, a level 4 finish, and semi-gloss or gloss paint. Base shall be 4” minimum wood.
 - iii. Ceilings: Approved materials include 2x2 commercial grade lay-in acoustical ceiling tile systems with painted gypsum board borders.
- b. The Resident Director’s office should be located so that it is visible and/or easily accessible from the lobby.
- c. A Reception/Security desk is required at the main lobby adjacent the main entrance.
- d. Drinking Fountains:
 - i. Drinking fountains are required in all student housing.
 - ii. Drinking fountain is to be specified with a hydration station for filling of water bottles.
 - iii. Stainless steel (no. 4 brushed finish) is recommended for all surface finishes.
 - iv. If water coolers are provided, electric power is required in addition to water and waste piping.
 - v. Drinking fountains shall be located in an alcove.

7. Elevators

- a. A minimum of one elevator per building is required. For buildings with more than 350 occupants or more than four stories a second elevator should be added.
- b. Consider locating elevators near stairs to encourage stair use. In addition to health benefits for occupants, this will minimize elevator energy use.
- c. The elevators shall be located to facilitate move-in/out and shall be service type with additional weight capacity and oversized car.
- d. Elevator cab finishes shall be of durable, vandal- resistant materials. Provide pads for protection of walls during move-in/out days.
- e. Hole-less elevators are acceptable.
- f. Elevator may require access control card system. Check with the campus.

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8. *Stairs and Ramps*

- a. Stair Flooring: Floor finishes shall be durable, slip-resistant, easily cleaned materials. Approved materials are vinyl composition tile, rubber flooring and epoxy paint. Floor finishes may be omitted entirely if bare concrete is acceptable to the campus.
- b. Walls: Wall construction and finishes shall be of durable construction capable of resisting impact and gouging. Approved materials include heavy gauge metal stud systems with impact resistant gypsum board or concrete masonry units painted with graffiti-resistant coatings or semi-gloss or gloss paint.
- c. Ramps are preferable to stairs for small changes in elevation.
- d. Rails at stairs and ramps will experience heavy use and shall be constructed of heavy-duty materials and anchoring systems. Rails shall be painted with epoxy to resist nicks and scratches.
- e. 120-volt receptacles shall be provided at each stair landing for cleaning equipment.

9. *Resident Director's Office*

- a. Finishes in the Resident Director's Office include all those appropriate for general office use.
- b. The Resident Director's Office shall be located in close proximity to the main building entrance and entrance lobby.
- c. Electrical Devices Typically Provided:
 - i. Convenience Outlets
 - ii. Telephone Outlet
 - iii. Cable TV Outlet
 - iv. Data Outlet
 - v. Ceiling lights
 - vi. Wireless Technology

10. *Lounge, Multipurpose, Community Rooms*

These rooms can be configured and equipped in many different ways for different uses. Consult with the campus for the specific programmatic use of these rooms and design accordingly.

- a. Finishes are as follows:
 - i. Flooring: Floor finishes should be durable, slip-resistant, easily cleaned materials that can withstand water and dirt tracked into the building by occupants and visitors. Approved materials include stone tile, porcelain tile, ceramic tile, and carpet tiles. Note: Large ceramic tiles installed in spaces such as lobbies and corridors that are on elevated plywood/gypcrete construction are prone to cracking due to flex, extra precautions must be taken.
 - ii. Walls: Wall construction and finishes shall be of durable materials capable of resisting impact and gouging. Approved materials include impact-resistant gypsum board materials, level 4 finish, and semi-gloss or gloss paint. Base shall be 4" minimum wood.
 - iii. Ceilings: Approved materials include 2x2 commercial grade lay-in acoustical ceiling tile systems with painted gypsum board borders.
- b. If a community kitchen is provided, it should be located adjacent to the Community room and at a minimum shall include:
 - i. Ceramic Tile flooring. Note: Large ceramic tiles installed in spaces such as lobbies and corridors that are on elevated plywood/gypcrete construction are prone to cracking due to flex, extra precautions must be taken.
 - ii. Solid wood base cabinets and wall cabinets

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- iii. Solid surface countertops
 - iv. Double sink with disposal.
 - v. Warming oven only that needs no hood.
 - vi. Refrigerator
 - vii. Ice-maker
 - viii. Microwave
- c. Electrical Devices Typically Provided:
- i. Convenience Outlets
 - ii. Ceiling Lights
 - iii. Telephone Outlets
 - iv. Cable TV Outlets
 - v. Power and Cable TV outlets for wall hung televisions.
 - vi. Data Outlets
 - vii. Wireless Technology
- d. Secure storage shall be provided adjacent to lounges, multipurpose, and community rooms for storage of chairs and equipment. Check with campus for specific requirements.

11. **Public Toilets**

- a. Finishes in public toilet rooms are as follows:
- i. Flooring: Floor finishes shall be durable, slip-resistant, easily cleaned materials that are resistant to water permeation. Materials shall be ceramic tile, with a minimum static coefficient of friction of 0.6 at level surfaces and 0.8 at sloped surfaces.
 - ii. Walls: Materials shall be ceramic tile wainscot with gypsum board, level 4 finish, painted with gloss paint.
 - iii. Ceilings: Materials shall be commercial grade suspended painted gypsum board, level 4 finish, painted with gloss paint.
- b. Public toilets shall be located in proximity to the main building entrance and lounge, multi-purpose, and community rooms.
- c. Plumbing Fixtures:
- i. Lavatory:
 - 1. Vitreous china or integral bowls in solid surface countertops.
 - 2. The approved color is white.
 - 3. Lavatory shall have a back-splash if no countertops are provided.
 - 4. A shelf shall be provided over the lavatory if no countertops are provided.
 - ii. Lavatory Carrier:
 - 1. If wall hung lavatories are selected, floor mounted, concealed arm carriers bolted to the floor are required.
 - 2. Concealed arms shall be steel, with fixture locking lugs, leveling screws and a means of attaching, positioning and securing the fixture to the carrier.
 - iii. Lavatory faucet and trim:
 - 1. Lavatory faucets shall be a solid, cast brass product.
 - 2. The faucet finish shall be polished chrome.
 - 3. Ceramic cartridges for faucets are recommended.
 - 4. Grid strainers should be used.
 - 5. "No-hands" electronic faucet types are recommended.
 - iv. Water Closet
 - 1. Vitreous china is the approved material
 - 2. The recommended color is white.
 - 3. A flush valve type water closet is preferred over tank type to reduce maintenance.
 - 4. Open front seats with stainless steel check hinges are recommended.

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5. Wall mounted, rear outlet water closets are preferred because they allow for cleaning under the bowl.
- v. Water Closet Flush Valve:
 1. Flush valves shall be solid cast brass.
 2. Finish shall be heavy chrome plating.
 3. Handles are preferred over pushbuttons. Handles should be ADA compliant.
 4. Electronic flush valves, if used, must be furnished with an override button.
- vi. Floor drain:
 1. Floor drains are required in public toilet facilities. The floor drains serve two main functions: to handle the occasional overflow of a fixture and to facilitate floor washing.
 2. The floor must always slope toward the drain.
- vii. Electric “Air-blade” type hand dryers shall be included in public restrooms.
- d. Bathroom Accessories
 - i. Approved toilet partition systems include systems with solid plastic panels, doors and pilasters. Systems with pilasters anchored at the floor and the ceiling will provide the greatest stability and durability.
 - ii. Solid plastic countertops with drop in china lavatories or integral bowls are recommended. Plastic laminate countertops are prone to delamination and are not recommended.
 - iii. Coordinate the diameter of the toilet tissue holder with the type of toilet tissue roll normally supplied by the campus.
 - iv. 2”x4” blocking is required to support accessories or grab bars that are attached to the walls.

12. Corridors

- a. Variation in the width of long corridors is preferred for visual affect. However, wall insets or alcoves should not exceed 6” to minimize security risks. Corridors shall not be narrower than 6’-0” in any location.
- b. Approved finishes in corridors are as follows
 - i. Flooring: Floor finishes shall be durable, slip-resistant, easily cleaned materials. Consideration should also be given to the selected flooring’s sound absorbing characteristics. Approved materials include vinyl composition tile and carpet. Carpet tiles are preferred over roll carpet for maintainability. Carpet shall be commercial grade, solution dyed, tufted and/or woven with non-porous backing to prevent mold and mildew is required.
 - ii. Walls: Wall construction and finishes shall be of durable construction capable of resisting impact and gouging. Materials shall include studs at maximum 16 inches on center, (with double studs at door jambs) with impact resistant gypsum board, level 4 finish, painted with semi-gloss or gloss paint. Chair rails are recommended to prevent scaring of walls by move-in carts. Corner guards are required on all exterior corners. Base shall be 4” minimum wood.
 - i. Ceilings: Approved materials include 2’x2’ commercial grade lay-in acoustical ceiling tile system.

13. Study Rooms

- a. Approved finishes in study rooms and bedrooms are as follows:
 - i. Flooring: Approved materials include vinyl composition tile and carpeting.
 - ii. Walls: Approved materials include painted gypsum board. Base shall be 4” vinyl cove.
 - iii. Ceilings: Approved materials include suspended painted gypsum board systems.
 - iv. Window Sills: Approved material is solid surface in lieu of wood.
- b. Electrical Devices Typically Provided:
 - i. Convenience Outlets
 - ii. Ceiling Lights
 - iii. Telephone Outlets
 - iv. Cable TV Outlets
 - v. Data Outlets
 - vi. Wireless Technology

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STUDENT LIVING AREAS

14. *Student Living Rooms and Bedrooms*

- a. Approved finishes in study rooms and bedrooms are as follows:
 - i. Flooring: Approved materials include vinyl composition tile and carpeting.
 - ii. Walls: Approved materials include painted gypsum board. Base shall be 4" vinyl cove.
 - iii. Ceilings: Approved materials include suspended painted gypsum board systems.
 - iv. Window Sills: Approved material is solid surface in lieu of wood.
- b. Electrical: All room outlets (electrical, voice, data, CATV) shall be coordinated with proposed furniture layouts. Placement to maximize future flexibility is to be emphasized.
 - i. Each housing unit is to have an individual electrical service panel.
 - ii. If refrigerators are anticipated a separate circuit breaker for them must be provided.
 - iii. Lighting: Overhead lighting fixture with ceiling fan.
 - iv. Convenience Outlets: Multiple electrical outlets coordinated with layout providing a minimum of 20 amps per room or as needed and recommended by the design engineers. Outlets located on walls such that no location on a wall is greater than six feet from an outlet without crossing an opening.
 - v. Arc Fault Circuit Interrupters: If an apartment is considered a dwelling unit as defined in the National Electrical Code, arc fault circuit interrupters are required for all bedroom electrical circuits by the NEC. (Code requirement.)
 - vi. Communications Equipment: Typically one box is provided per student, each with a data jack, and cable TV jack. The boxes are typically provided on opposite walls and located near the student's desk. Typically a 4" box is provided with 3/4" conduit stubbed up above an accessible ceiling.
 - vii. Wireless Technology: Wireless communications are required.
- c. Mechanical: Thermostats in each suite shall be installed with a restricted temperature range between 70 and 78 degrees.
- d. Bedroom Furnishings: One per resident of each of the following shall be provided. Coordinate with campus preferences.
 - i. Extra-long loft-able twin bed with mattress.
 - ii. Three drawer dresser
 - iii. Desk per person with 3 drawers and keyboard tray.
 - iv. Task chair, adjustable, no metal feet.
 - v. Full height wardrobe, if closets are not provided.
- e. Living Room Furnishings: Coordinate with campus preferences.
 - i. Couch
 - ii. Coffee Table
 - iii. Chairs
- f. Provide hooks or pegs for hanging coats, umbrellas, etc.

15. *Student Bathrooms*

- a. Approved finishes in student bathrooms are as follows:
 - i. Flooring: Floor finishes should be durable, slip-resistant, easily cleaned materials that are resistant to water permeation. Approved materials include ceramic tile. Floor joints at tub, shower, and toilets must be sealed to prevent water intrusion due to overflows or spills in bathrooms.
 - ii. Walls: Approved materials include "green-board" gypsum board with gloss paint and cement board with full height tile or solid surface material at shower areas.
 - iii. Ceilings: Approved materials include suspended "green-board" gypsum board systems with gloss paint.
- b. Mechanical:
 - i. All bathrooms should be provided with exhaust ventilation. The exhaust fan shall have a motion sensor or a moisture sensor to eliminate buildup of humidity and reduce the possibility of mold.
 - ii. If direct make up air is not introduced into the space, then door undercuts should be used to provide make up air to the room.

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- iii. Ceiling and wall registers should be aluminum construction in the shower area to reduce the potential for corrosion.
- c. Plumbing:
 - i. Vanity:
 - 1. Each room shall have a vanity with at least one sink per two residents.
 - 2. Materials shall be integral bowls in solid surface countertops.
 - 3. Cabinetry shall be solid wood.
 - 4. There shall be one full-sized mirror over the sink, made of 1/4" cut glass with beveled edge.
 - 5. There shall be one medicine cabinet or base drawers for each resident.
 - ii. Lavatory faucet and trim:
 - 1. Lavatory faucets shall be a solid, cast brass product.
 - 2. The faucet finish shall be polished chrome.
 - 3. Ceramic cartridges for faucets are recommended.
 - 4. Grid strainers should be used.
 - iii. Water Closets:
 - 1. Vitreous china is the approved material
 - 2. The recommended color is white.
 - 3. Tank type water closet is preferred.
 - 4. Toilets must be an elongated tank type with a consistent 2 3/8" minimum diameter trapway that is fully glazed to prevent clogging.
 - iv. Showers/Tubs: Full height solid acrylic units or tubs with tile shower walls. Fiberglass is not approved.
 - 1. Solid acrylic tub/shower units should follow the guidelines listed below:
 - i. Minimum of one-eighth inch vacuum formed solid acrylic sheet formed to multiple layers.
 - ii. A solid support shower base in the standing area. This will prevent flex failures and failures at the drain connection due to movement.
 - iii. One-piece shower units are large units and typically do not fit through 36-inch doors and should be avoided.
 - v. Shower Mixing Valve: The shower-mixing valve is a high use, high maintenance item. Shower mixing valves should be the manufacturer's best quality valve.
 - 1. Mixing valves are required to be a pressure balance type mixing valve, thermostatic or combination pressure balance/thermostatic type valves.
 - 2. Valves should be provided with integral screwdriver stop/checks.
 - 3. Valves can be provided with a high limit stop.
 - 4. The handle and escutcheon plate should be of substantial construction.
 - 5. Valves should be field adjusted once installed.
 - vi. Shower Head: Consider using shower head shut off valves to provide water savings opportunities.
- d. Floor drains are required in all handicap accessible bathrooms.
- e. Electrical:
 - i. Locate at least two GFI receptacles adjacent to sinks, such that one outlet is adjacent to each sink. Coordinate with the Design Professional plans to insure that outlets are not installed in mirrors. Show the outlets on the Design Professional elevations.
 - ii. Provide motion sensor lighting controls in the bathroom area.
- f. Toilet Accessories:
 - i. Towel hooks and robe hooks are preferred over towel bars.
 - ii. Screw-out shower rods and curtain hooks are preferred.
 - iii. 2x4 wood blocking must be provided behind all wall mounted fixtures and accessories.

16. Resident Director's Apartment

- a. The Resident Director's Apartment should have its own separate entrance.

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- b. Utilities for the Resident Director's Apartment should be separately metered and controlled from utilities in the remainder of the building to permit occupancy when the remainder of the building is unoccupied.
- c. The location of the Resident Director's apartment should be discussed with the campus. Some campuses may prefer it be located near the building main entrance/lobby, while others may prefer a more remote location.
- d. The Resident Director apartment is to have its own washer and dryer.

SERVICE AND UTILITY AREAS

17. Vending Area

- a. Each building must have one Vending area and must have water, drain, and electrical connections.
- b. One ice maker per building is required at vending area. Ice machine shall be dispensing type, not open type.
- c. Heat build-up from coolers (such as soda, juice and cold snack vending machines) should be addressed. Increased ventilation or air conditioning should be considered.
- d. Signal wiring: Provide data outlets for vending machines to permit the use of student swipe cards.

18. Storage Rooms

- a. Wall construction should be of durable construction capable of resisting impact and gouging. Approved materials include heavy gauge metal stud systems with impact resistant gypsum board or concrete masonry units.
- b. Finishes: Finishes are optional in most storage rooms. Where finishes are provided, the selection should be based on the materials stored and campus preference.
 - i. Where large or bulky materials (such as furniture) are stored, durable finish materials resistant to impact should be provided.
 - ii. Where liquids are stored, finishes should be water-resistant.
- c. Heating: Storage rooms should have enough heating to prevent freezing of stored materials as well as any piping that passes through the room.
- d. Ventilation: Materials being stored in the storage spaces dictate ventilation requirements.
- e. Smoke detection should be provided within storage rooms.
- f. Space should be provided for collection and storage of recyclables. Check with the campus for specific requirements and locations to coordinate with campus recycling protocols.

19. Laundry Room

- a. Floor finishes should be durable, slip-resistant, easily cleaned materials that are resistant to water permeation. Approved materials include ceramic tile, quarry tile and seamless vinyl flooring, pitched to floor drains. Tile should have a minimum static coefficient of friction of 0.6 at level surfaces and 0.8 at sloped surfaces. Note: Large ceramic tiles installed in spaces such as laundry rooms that are on elevated plywood/gypcrete construction are prone to cracking due to flex, extra precautions must be taken.

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- b. Laundry rooms should be located so that they are visible from well-frequented areas of the building in order to provide personal security for students using the laundry room.
- c. Washing machine hook ups: Provide washing machine hook ups for all washers. Ensure that each washing machine has a hot and cold shut off valve and waste piping at each machine. Piping should be concealed in the wall construction and utilize commercial washing machine valve boxes.
- d. Floor drain:
 - i. Floor drains are required in laundry facilities. The floor drains serve to handle the occasional overflow and to facilitate floor washing.
 - ii. The floor must always slope toward the drain.
- e. Utility sinks: Laundry rooms should have a utility sink. Utility sinks should be located to avoid conflicts with access/exit paths and door swings for laundry equipment. Commercial grade faucets are recommended. Cast iron or stainless are preferred materials for utility sinks.
- f. Exhaust:
 - i. Clothes dryer exhaust:
 1. Clothes dryer exhaust should be installed in accordance with the clothes dryer manufacturer's installation instructions as well as the mechanical code. For multiple dryer installation ensure the manufacturer's requirements for make-up ventilation are reviewed to ensure proper operation of dryers when one or more dryers are in operation.
 2. Ganging more than one dryer into an exhaust duct requires specific engineering to ensure that the lint particles are carried to the exterior of the building.
 3. Dryer exhaust duct must have access points to allow for scheduled cleaning.
- g. An electrical panel should be installed for each laundry room to serve washers and dryers.
- h. Signal wiring: Provide data outlets for washers and dryers to permit the use of student swipe cards.

20. Janitor's Closet

- a. Floor finishes should be durable, slip-resistant, easily cleaned materials that are resistant to water leakage. Approved materials include ceramic tile, quarry tile and bare or epoxy coated concrete, pitched to floor drains. Tile should have a minimum static coefficient of friction of 0.6 at level surfaces and 0.8 at sloped surfaces.
- b. Utility sink: Janitor's closets shall have a utility sink installed. The utility sink shall be floor mounted and be of substantial construction, either terrazzo or cast iron. Provide commercial grade utility faucet. Faucet should have a bucket hook, hose threads and a vacuum breaker. If the faucet is wall mounted, substantial wall blocking is required for support of the faucet and the piping should be well braced to support a full bucket. Wall finishes adjacent the utility sink should be of durable, water-resistant materials, such as ceramic tile or solid plastic panels.
- c. Floor drain:
 - i. Floor drains are recommended in janitor's closets, depending on the size of the space. The floor drains serve two main functions: 1) to handle the occasional overflow of a fixture; and 2) to facilitate floor washing.
 - ii. The floor shall be sloped toward the drain.

21. Elevator Machine Rooms

- a. **Mechanical:** Elevator machine rooms shall be carefully designed with mechanical cooling systems that insure the proper functioning of the elevator and prevent downtime due to overheating.
- b. No piping, conduit or equipment serving systems that are unrelated to the elevator(s) may be contained in or

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pass through the elevator machine room.

22. Mechanical Equipment Room

- a. Wall construction and finishes should be of durable construction capable of resisting impact and gouging. Approved materials include heavy gauge metal stud systems with impact resistant gypsum board or concrete masonry units, painted with semi-gloss or gloss paint systems.
- b. Soundproof construction shall be provided to achieve a minimum STC Rating of 52 at mechanical equipment rooms. Special attention to sound reduction must be given for mechanical equipment rooms that are adjacent, above or below student living spaces. Consideration must be given to thermal insulation at mechanical equipment rooms containing heat generating equipment that are adjacent, above or below student living spaces.
- c. Ventilation: Mechanical equipment rooms should have ventilation provided in accordance with the Mechanical Code and the equipment manufacturer's installation requirements,
- d. Floor drains:
 - i. Mechanical equipment rooms should have floor drains. Floor drains are required in boiler rooms. Floor drains to handle the occasional overflow and to accommodate equipment water discharge, whether it is planned or unplanned.
 - ii. Floor drains should be located near equipment that will discharge water to the space. Floor drains must have adequate capacity for peak demand of equipment discharge.
 - iii. The floor should pitch toward the floor drain.
- e. Equipment access:
 - i. Design drawings should show all equipment coil and filter pull areas. Adequate access needs to be provided for equipment service per manufacturers specifications.
 - ii. Replacement equipment will have to be brought into the space at some point in the life of the building. Suitable access for this equipment should be considered.
 - iii. If equipment is being placed in an attic area, then the designer should review the headroom and actual access that will be available for equipment service. Drawing sections through equipment installed in attics should be provided in the contract documents to ensure adequate space.

23. Communications Room

- a. Terminate services for Telephone, Data, and Cable TV services in a dedicated room.
- b. Coordinate with the facility and service providers to determine space requirements.
- c. All communication rooms must be cooled by an independent HVAC system.

BUILDING SYSTEMS AND COMPONENTS

24. Site Work

- a. Walks, Driveways and Parking Areas:
 - i. Show walks, driveways, parking areas and utilities on the site plans even if they are not in the contract.
 - ii. Consider pervious paving at sidewalks, driveways, and parking areas to minimize storm water runoff.
 - iii. Provide site lighting for walks, driveways, parking areas, and roadways.
 - iv. Exterior lighting should be designed to balance security and safety needs.
 - v. Drives and roadway materials shall be, at a minimum, 4" of asphalt / concrete over compacted crusher

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run (minimum depth 12") within concrete curbs to meet the standards of DOT for medium traffic roadways. Service drives shall have a minimum of 6" of asphalt. At dumpster areas provide an apron with a minimum of 8" deep reinforced 3000 PSI concrete to prevent damage from front loader dumpster trucks.

- vi. Sidewalks shall be, at a minimum, 96" wide to allow access by service vehicles. Walks shall be traffic rated concrete pavers on a crusher run and sand base to accommodate light vehicular traffic, or broom-finish concrete depending on which is more appropriate to surrounding area.
- b. Utilities:
 - i. Ductile iron pipe under building slabs should be a heavy-duty type.
 - ii. Water Shutoff: If underground water shutoffs are provided, valve boxes and valve wrenches must be provided. Valve closing directions should be reviewed with the campus. Underground valves can close with either a right hand or left hand turn. Valves selected should be reviewed with the campus for consistency with their existing valves.
 - iii. Fire service shutoff should be a post indicator valve provided with a tamper switch.
 - iv. Gas Meter/Shutoff: Gas shutoff must be accessible. Check with local utilities for any specific requirements. Regulators should be located away from windows as they have pressure relief valves and can vent gas. This will minimize nuisance reports of gas leaks by building occupants.

25. Exterior Walls / Building Envelope

- a. The building envelope must be closed tight with all holes, gaps, cracks sealed to prevent the intrusion of rodents, birds, and insects into attics or other spaces.
- b. Approved framing systems include wood frame, metal stud, pre-cast concrete, steel and masonry. If wood frame "stick" construction is proposed, the requirements found in Exhibit A of this document for "USG Minimum Design and Construction Requirements for Wood Framed Structures" shall be followed unless prohibited by code.
- c. Approved materials for the exterior wall finishes include precast concrete, brick masonry, and stone. Hardcoat stucco, fiber-cement board, and insulated metal panels, may be used sparingly on higher floors. Less durable materials such as vinyl siding and exterior insulation finish systems (EIFS) are prohibited.
- d. Lintels and decorative bands are to be limestone, precast concrete or cast stone.
- e. Where masonry cavity wall construction is used, flashings should project a minimum of one-half inch from the face of the masonry.

26. Windows

- a. Approved window types include double hung or fixed windows.
- b. The relationship of the window width to height and mullion configurations should closely match windows on other existing student housing facilities on campus. True divided lights are preferred.
- c. Approved window materials include thermally broken aluminum, steel, and aluminum or vinyl clad solid wood.
- d. Approved minimum window grade is heavy commercial, minimum HC-40.
- e. Approved exterior window finishes include anodizing, factory applied paint systems (such as "Kynar"), and aluminum or vinyl cladding.
- f. Window glazing shall be double insulated, low-e glass.

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- g. Limit stops are required to restrict window openings to a maximum of eight inches. Limit stops should be installed with vandal-resistant screws. On double hung windows, limit stops should be provided on the lower sash only. Limit stops shall not reduce the amount of open area required by code.
- h. Stainless steel or rust proof security screens with tamper-proof fasteners are required for all first/ground floor accessible windows. Screens must have releases on the interior for emergency exit.
- i. At operable windows on upper stories tilt-sash types are recommended to facilitate window washing.
- j. Approved materials for exterior window sills include pre-cast concrete or stone. Brick sills are not preferred as they are prone to leakage and difficult to maintain.
- k. Windows are to be set back from the exterior face of the exterior wall a few inches to provide protection from weathering, and prolong sealant life at the window perimeter.
- l. Windows are to be impact resistant if required by code for high wind areas.

27. Roofing

- a. Roof slopes and materials shall be compatible and consistent with surrounding structures.
- b. Low Sloped Roofs:
 - i. Approved roof system types include multi-ply modified bitumen and built-up roofing systems. These systems have proven durable and are relatively easy for maintenance staff to maintain and repair.
 - ii. Low Sloped Roofs must have parapets and slope inward to drains that tied into an underground drainage system.
- c. Shingle Roofs:
 - i. Roof sheathing must be 5/8" min. OSB decking with ice and water shield at valleys and eaves. (Drip caps at edge?) (What about spec for felt?)
 - ii. Architectural shingles shall match existing and must have a minimum of 30-year warranty.
 - iii. Soffits shall be constructed with cement fiber material, perforated or with built in venting systems for attic ventilation. Materials are to be prefinished or factory primed.
 - iv. Gutters and downspouts shall be minimum 6 inch prefinished aluminum. Downspouts shall be tied into an underground drainage system.

28. Interior Construction and Finishes

- a. Floor Construction
 - i. Where precast concrete plank floor construction is used, a topping slab is required to level the floor prior to the installation of floor finishes. Experience has shown that an acceptable level floor cannot be achieved with thin floor finish systems due to typical plank cambering.
 - ii. Where Gypcrete is used as a floor topping it shall be a minimum depth of 1". Gypcrete should not be used in areas subject to water exposure such as bathrooms, kitchens, and laundry rooms.
 - iii. The minimum floor to floor STC Rating is 50. Hard surface floors shall have an acoustical underlayment that is secured to the substrate.
- b. Floor Finishes
 - i. Flooring that may become wet, such as at building entrances, public toilet rooms and student bathrooms, should have a minimum static coefficient of friction of 0.6 at level surfaces and 0.8 at stairs and ramps.
 - ii. Where carpeting is used, carpet tiles should be considered for easier repair and cleaning in the event of damage or severe soiling and they also produce less waste than sheet goods.
 - iii. Recycled carpeting, carpeting that is recyclable, and low VOC carpeting is recommended.
 - iv. Carpet shall be commercial grade, solution dyed, tufted and/or woven with non-porous backing to prevent mold and mildew.

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- c. Wall Construction
 - i. Wall construction between units (apartments, suites or individual student bedrooms) is required by code to be fire rated and shall extend from the floor to the underside of the structure above.
 - ii. Wall construction between resident units is required by code to have a minimum sound transmission class (STC) rating of 50. An STC rating of 50 is also required between individual bedrooms.
 - iii. Mechanical rooms shall have a minimum STC rating of 52.
- d. Wall Finishes
 - i. All walls shall receive a level 4 finish prior to the application of paint.
 - ii. Graffiti resistant coatings are recommended for areas that may be subject to vandalism.
 - iii. The selection of interior wall finishes should be made with sustainability and environmental indoor air quality in mind. Low VOC paints and coatings are recommended.
 - iv. Wet area walls to be ceramic tile or other water resistant material over cement backer board.
- e. Ceiling Systems
 - i. Approved ceiling systems include commercial grade suspended acoustical ceiling systems, suspended gypsum board ceiling systems and gypsum board applied to the underside of floor or roof construction above. The choice of system is dependent on several factors, including acoustic requirements for the space, required access to mechanical and electrical components above the ceiling and the desired appearance.
 - ii. "Hard" ceilings such as gypsum board should be used in student living areas for security reasons. Acoustical tile systems with removable tiles provide a place for concealment of contraband materials.
 - iii. Gypsum board ceilings to be painted shall receive a level 4 finish.

29. Doors

- a. Doors shall be 1 3/4" thick and 7'-0" tall minimum.
- b. Approved exterior door types include insulated hollow metal or storefront anodized aluminum double glazed to fit the application.
- c. Approved interior door types include minimum 20-gauge steel and solid core wood.
- d. Approved interior door frame types include minimum 18-gauge fully welded steel. Knock-down door frames are not preferred. Double studs are required at either side of the door frame opening in metal stud wall construction.
- e. Corridor double doors are to open towards lobby side (exit side). Both card access & hold open devices are both required. A removable center mullion may also be required.

30. Door Hardware

- a. Suite entrance door hardware to include storeroom lever set, chrome plated, cylindrical lock Corbin, Sargent, Schlage Primus, Best, Universal (or equal) cores capable of accepting Best, Core Max Master keying system. Minimum of 1" throw for deadbolt.
- b. Bathroom doors to be passage set.
- c. All panic hardware RIM type. No concealed or exposed rods. Von Duprin System 800 (or equal).
- d. Mullions to be lockable and removable
- e. Closers to be LCN (or equal).

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- f. Hinges to be 1 1/2 pair per door. No electric hinges.
- g. Kick plates shall be installed on both sides of suite entrance doors.
- h. One-piece piano hinges are to be used on high-traffic doors.
- i. Bedroom door hardware to include storeroom lever set, chrome plated, cylindrical lock Corbin, Sargent, Schlage Primus, Best, Universal (or equal) cores capable of accepting Best, Core Max Master keying system. Minimum of 1" throw for deadbolt.
- j. Card Access Controlled Doors: Card access is required at all exterior entry doors, resident corridor doors, suite entry doors, and all common room doors. Connect and integrated with existing access control system on campus. Resident Director's Office shall have a key cabinet wired and connected to the Institution's central card access system for key management control.

31. HVAC System

- a. Each new project shall have a stand-alone HVAC system provided, no connection to existing campus systems is allowed.
- b. There is a strong preference for Variable Refrigerant Flow or other energy efficient HVAC systems which provide individual room temperature control. PTAC units are NOT permitted.
- c. HVAC shall be designed and installed according to applicable codes and standards to ensure a safe and healthy indoor air environment.
- d. Energy Recovery Units (ERU's) to be located in the attic.
- e. Thermostats in resident units shall be installed with a restricted temperature range between 70 and 75 degrees.
- f. All telecommunication rooms must be cooled by an independent HVAC system.
- g. Bathrooms shall have exhaust ventilation. Consideration should be given to increased ventilation rates in toilet and shower rooms due to high demand periods.
- h. Ductwork: Exhaust ductwork from bathrooms and laundry rooms exposed to high humidity shall be resistant to corrosion. Aluminum ductwork is recommended.
- i. Registers: Registers at bathrooms and laundry rooms exposed to high humidity shall be resistant to corrosion. Aluminum registers are recommended
- j. Fans: If possible, locate fans on accessible roofs. If there is a pitched roof, locate fans in an accessible attic or other accessible space.
- k. Heat recovery: Consider using heat recovery if possible, these technologies can reduce the size of HVAC systems and reduce operating costs. There are several kinds of heat recovery units available, including heat wheels, heat pipes, cross flow and run around coils. Consider locating recovery units in the attic.

32. Plumbing System

- a. Piping:
 - i. Water supply lines should be type L copper for pipes larger than 1/2" and CPVC for pipes 1/2" or smaller.
 - ii. Waste, drain and vent piping should be cast iron or schedule 40 PVC. Thicker wall piping will give them increased longevity and stand up to rodding over the years.
 - iii. If "stick" construction is used, rigid pipes spanning vertically more than one floor are required to have flexible

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couplings or other means to allow for movement.

- b. Valves:
 - i. Typically, ball valves are supplied. For most campuses, this is the valve of choice. This should be confirmed with campus personnel.
 - ii. Isolation valves shall be used to segregate bathrooms, janitor's closets, etc. from distribution piping and to isolate floors from risers. Both hot and cold piping should have isolation valves.
 - iii. Valves must be easily accessible to building maintenance staff and must be marked with high-visibility signage for easy location in case of emergency.
- c. Generators: If generators are needed, they shall be natural gas. Verify that the gas utility service to the campus is classified as non-interruptible.
- d. Water Heater: A redundant centralized system with boilers and zoned loops per floor is preferred for domestic hot water. Dual water heater with 100% backup and circulating pumps.

33. Electrical System

- a. Capacity: Verify that the existing campus system has capacity and space to serve the building. Advise utility of anticipated increases in load.
- b. Campus Short Circuit & Coordination Study: Perform a short circuit and coordination study to determine the available short circuit current at the building and to determine that the building over current protective devices are coordinated with upstream campus over current devices.
- c. Building Short Circuit & Coordination Study: Perform a short circuit and coordination system study to determine equipment short circuit ratings and to provide for a properly coordinated electrical system design.
- d. Voltage & Campus Configuration: Verify the campus primary system voltage and primary feeder configuration and show on the drawings.
- e. Main Transformer: Provide transformers on a ground mounted pad. Transformers must meet or exceed Georgia Power standards. Consult with campus to place the transformer in a non-prominent location.
- f. Primary Switching: Primary switching must be outdoors, pad mounted, and meet or exceed Georgia Power standards.
- g. Primary Switching for Sub-panels and Motor Control/Equipment Center: Shall be a metal enclosed switchgear located indoors with a stand-alone HVAC system.
- h. Electrical metering is required.
- i. Single Line Diagram: Include a single line diagram on the contract drawings. Show all major equipment and connections. Show existing site utility system to the extent that all devices affected by the project are included on the diagram.
- j. Grounding Details: Include grounding details to show grounding of electrical services and generators.
- k. Underground primary and secondary service feeders are to be concrete encased PVC and must meet or exceed Georgia Power standards.
- l. Site Lighting Conduits: PVC conduits are to be used for site lighting circuits.

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- m. Attic Junction Boxes: Coordinate with the Design Professional and make sure any junction boxes installed in an attic will be accessible.
- n. Lightning Protection:
 - i. Perform a risk assessment to determine if a lightning protection system should be installed.
 - ii. If lightning protection is included in the project, the drawings must show the design. Show and detail roof penetrations.
- o. Lighting Fixtures: Use energy saving fixtures and lamps, such as compact fluorescents and LEDs, where appropriate.
- p. Acceptable light levels for specific areas shall be in accordance with the ANSI/IESNA Lighting Handbook.
- q. Individual electrical devices trim to be stainless steel.

34. **Communication Systems**

- a. Telephone, Data, and Cable TV Systems are required. The following chart indicates typical quantities for each space type, the final design for each project will determine the actual number of ports for each programmed space.

Room Type	Data	Phone	CATV
2BR Suite	2	0	1
1BR Suite	1	0	1
Suite Living Room	1	0	1
RD APT	4	2	3
Community Room	6	0	4
Lounge	4	0	2
Meeting Room	4	0	2
Study	2	0	0
Reception	2	2	0
Office	2	2	1
Multi-Purpose	4	0	2
Warming Kitchen	2	0	0

- b. A wireless internet system is required that provides connectivity throughout the facility.
- c. Consult and coordinate with the campus and service providers to determine service requirements.
- d. Typically service conduits are required for the service cables provided by a service provider.
- e. Provide a main communications service room for termination of system services.
- f. Provide communications system closets strategically located throughout the building.

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- g. Provide riser raceways and cables.
- h. Design a pathway for cabling from the communications system devices to the service room.
- i. Include riser diagrams on the contract documents for communications and security systems.

35. Security Systems

- a. Access Control Systems –Purchase and install a complete ACS, include all associated costs and required customized programming per the requirements of the Institution. Consult with the Institution to determine type, locations, features, and functions so that the system will integrate with existing systems and facilitate access by the Institution.
- b. Card Access Controlled Doors: Card access is required at all exterior entry doors, resident corridor doors, suite entry doors, and all common room doors. Connect and integrated with existing access control system on campus. Resident Director's Office shall have a key cabinet wired and connected to the Institution's central card access system for key management control.
- c. Video Surveillance System: Purchase and install a complete VSS, include all associated costs and required customized programming per the requirements of the Institution. Consult with the Institution to determine type, locations, features, and functions so that the system will integrate with existing systems and facilitate access by the Institution.
- d. Blue Light Systems: Blue light systems are provided on some campuses to allow a person to call for help in an emergency. Check with the campus for preferences.
- e. Mass notification systems are becoming an integral part of both emergency and non-emergency communications for many colleges. There are many mass notification options and services on the market today. Check with the campus for preferences and standards.

36. Fire Alarm System

- a. Scope:
 - i. All student housings shall be equipped with fully addressable fire alarm systems that comply with NFPA 72 (National Fire Alarm Code).
 - ii. The fire alarm system design should conform to the following requirements:
Integrated Fire/Smoke Detection and Alarm System: A complete fire and smoke detection and alarm system that is fully addressable with addressable devices. It shall include a manual fire alarm system in public spaces and automatic fire/smoke detection installed in all areas of the building, including but not limited to dwelling units, sleeping units, recreation rooms, lounges, dining rooms, laundry rooms, mechanical equipment rooms, storage rooms, corridors, and exits.
 - iii. The Design Professional shall consult with the campus to determine if a campus fire alarm standard exists. The Design Professional shall determine whether a sole source fire alarm system manufacturer is required.
 - iv. The Design Professional should consult with the campus to determine what doors should be provided with hold-open devices (stair doors, corridor doors, etc.)
- b. Reporting/Annunciation:
 - i. The equipment will automatically actuate audible and visual alarms throughout the building when an automatic initiating device is alarmed or when the system is manually activated.
 - ii. Fire alarm systems shall be monitored at a supervising station for retransmission of alarms to the fire department. A supervising station recognized by NFPA 72 National Fire Alarm Code could include a constantly attended University Public Safety communication center, commercial fire alarm central station or fire department communication center (i.e. 911). The Design Professional shall consult with the campus to determine the supervising station location. The

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- fire alarm system shall be monitored by an approved supervising station.
- iii. The Design Professional shall determine if common building alarm, trouble, and supervisory annunciation or point specific annunciation is required.
 - iv. The Design Professional shall determine if the municipality requires a direct interconnection with the fire alarm system.
 - v. Provide a remote annunciator or the fire alarm control panel (FACP) at the entrance normally used by responding emergency personnel. This may be located in a building vestibule and/or lobby.

37. Fire Protection System

- a. Scope:
 - i. All new facilities shall be fully sprinklered throughout with a system that complies in all respects to NFPA 13 (Installation of Sprinkler Systems), 13R (Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height) as applicable to the specific occupancy classification and project specific construction requirements.
 - ii. Standpipe shall be provided as required by the applicable building code.
 - iii. Applicable seismic requirements must be fully detailed on the design drawings.
- b. Design:
 - i. The Design Professional is required to hydraulically design the sprinkler system as part of the design process. Hydraulic calculations should be provided for review if requested.
 - ii. The Design Professional must determine if the existing water supply is adequate for the fire protection system.
 - iii. The drawings shall indicate all piping and pipe sizes. A pipe schedule system is not permitted.
 - iv. Fire pumps (if needed):
 1. Emergency power shall be provided for all electric fire pumps.
 2. The fire pump test header shall be located at the building exterior and shall be readily accessible to testing personnel.
 3. The building fire alarm system shall monitor the fire pump for Pump Running, Phase Reversal, Loss of Phase, and Alternate Power Source Transfer.
- c. Installation:
 - i. A sprinkler floor control valve assembly (control valve with tamper switch, water flow switch, combination inspector's test connection/drain) shall be provided on each floor. The floor control valve assembly shall be readily accessible for maintenance and test personnel.
 - ii. A post indicating valve (PIV) should be provided outside the building in the fire service connection to the municipal or site water supply.
 - iii. Concealed type sprinklers should be used in all areas accessed by residents.
 - iv. An exterior sprinkler alarm bell shall be provided.
 - v. The Design Professional shall coordinate the interconnection of all fire protection devices such as water flow switches, tamper switches, low air switches, and fire pumps with the building fire alarm system.
 - vi. The location of the fire department connection(s) shall be coordinated with the local fire department.
 - vii. Ensure that drain piping discharges to a suitable receptor, i.e. mop sink, or to the exterior. Drain piping should not discharge to a floor drain.
 - viii. Fire protection piping in unconditioned areas such as attics shall be insulated or supplied with heat tape to prevent freezing.
 - ix. Standpipe hose connections within stairs shall be located at intermediate landings as required by NFPA 14.

LAWS PERTAINING TO STUDENT HOUSING

38. *Applicable Laws*

- a. The Georgia Department of Community Affairs promulgates the current State of Georgia construction codes. These may be found at the Georgia Department of Community Affairs' website at <http://www.dca.state.ga.us> under Construction Codes.
- b. For a listing of current State of Georgia fire safety standards, rules, regulations and codes, go to the Georgia Insurance and Safety Fire Commissioner's website at <http://www.oci.ga.gov/FireMarshal/Rules%20and%20Regulations.aspx>

39. *Accessibility for Persons with Disabilities*

- a. Accessibility: As covered public entities under Title II of the Americans with Disabilities Act (ADA), the Board of Regents and its member institutions must ensure that its services, programs, and activities do not discriminate against individuals with disabilities. Housing constructed and/or operated on behalf of the Board of Regents and its institutions is subject to Title II's requirements, including the 2010 ADA Standards. The 2010 Standards for Accessible Design contain new scoping and technical requirements for "housing at places of education." The standards can be found at: <http://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.htm#titleII>
- b. In addition to title II of the ADA, public universities and colleges that receive Federal financial assistance are subject to Section 504 of the Rehabilitation Act of 1973, [which contains its own accessibility requirements through the application of UFAS]. Residential housing in an educational setting is also covered by the Fair Housing Act, which requires newly constructed multifamily housing to include certain features of accessible and adaptable design. Covered entities subject to the ADA must always be aware of, and comply with, any other Federal or State statutes or regulations that govern the operation of residential properties.

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