

SOUTH DAKOTA BOARD OF REGENTS

Budget and Finance

AGENDA ITEM: 7 – J
DATE: December 13-14, 2023

SUBJECT

NSU Business and Health Innovation Center/Lincoln Hall Facility Design Plan (FDP)

CONTROLLING STATUTE, RULE, OR POLICY

- [SDCL § 5-14-1](#) – Classification of Capital Improvements
- [SDCL § 5-14-2](#) – Supervision by Bureau of Administration of Capital Improvement Projects – Payment of Appropriated Funds
- [SDCL § 5-14-3](#) – Preparation of Plans and Specifications for Capital Improvements – State Building Committees – Approval by Board or Commission in Charge of Institution
- [BOR Policy 6.4](#) – Capital Improvements
- [BOR Policy 6.6](#) – Maintenance and Repair

BACKGROUND / DISCUSSION

Northern State University requests approval of the Facility Design Plan for the construction of the NSU Business and Health Innovation Center at a total cost of \$31,450,000. The Preliminary Facility Statement and the Facility Program Plan were approved in October of 2021. The project was included in Governor Noem’s FY23 recommended budget and received approval from the South Dakota Legislature during the 2022 legislative session with the passage of SB 44 which provided funding of \$29.5 million through the American Rescue Plan Act (ARPA) Capital Project Funds. During the 2023 legislative session SB 173 was passed, providing \$1.5 million of state general funds to be used for planning and design costs. These funds enabled the project to continue to evolve while the ARPA application was under review by the U.S. Treasury. Funding was approved by the U.S. Treasury in September.

IMPACT AND RECOMMENDATIONS

The Business and Innovation Center will be located on the northwest corner of campus at the current site of Lincoln Hall and Briscoe Hall. This location will provide a welcoming entry point to campus for those arriving on campus from Aberdeen’s Main Street. The two-story facility will include 40,600 square feet. The ground level will include office space for the School of Business faculty, dean, and staff, two classrooms, study spaces, huddle rooms

(Continued)

DRAFT MOTION 20231213_7-J:

I move to approve NSU’s Facility Design Plan for the Business and Health Innovation Center Facility at an amount not to exceed \$31,450,000, using the funding sources identified in the item.

for small group meetings and telehealth, and the Northern Innovation and Startup Center. Academic programming, such as offices and classrooms, will be located around the perimeter of the building. On the second floor, there will be three classrooms, two of which are designed primarily for the School of Business while the third will be used for nursing classes. In addition, the second floor will include a technology-rich conference room, offices for nursing faculty and staff, nursing simulation labs, debrief rooms and a skills lab. The building’s two-story commons area will provide ample space for students to study and interact, however specialty nursing equipment on the second floor will be safely separated from general building users. This space will also be utilized for events hosted by the adjacent Innovation and Startup Center.

Estimated Project Costs

Description	Budget amount
Construction Costs	\$22,895,497
Construction Contingency	\$1,368,725
Architect/Engineer Fees	\$1,990,000
OSE Fee	\$ 75,000
Briscoe Hall Demolition and Asbestos Abatement	\$2,428,250
Furniture, Fixtures & Equipment	\$2,428,250
Survey	\$19,500
Geotech and Construction Testing Commissioning	\$123,090
Commissioning	\$148,200
Abatement	\$160,000
Miscellaneous	\$64,800
Owner Contingency	\$ 1,726,938
Total	\$31,450,000

Proposed Funding Sources

American Rescue Plan Act (ARPA) Capital Projects Funds	\$29,500,000
General Fund Appropriation	\$1,500,000
NSU Auxiliary System Plant Funds	\$450,000

ATTACHMENTS

Attachment I – Northern State University Business and Health Innovation Center/Lincoln Hall Facility Design Plan

**Northern State University
Business and Health Innovation Center
Facility Design Plan**

Northern State University requests approval of the Facility Design Plan for the construction of the NSU Business and Health Innovation Center at a total cost of \$31,450,000. The Preliminary Facility Statement and the Facility Program Plan were approved in October of 2021. The project was included in Governor Noem's FY23 recommended budget and received approval from the South Dakota Legislature during the 2022 legislative session with the passage of SB 44 which provided funding of \$29.5 million through the American Rescue Plan Act (ARPA) Capital Project Funds. During the 2023 legislative session SB 173 was passed, providing \$1.5 million of state general funds to be used for planning and design costs. These funds enabled the project to continue to evolve while the ARPA application was under review by the U.S. Treasury. Funding was approved by the U.S. Treasury in September.

The Construction Manager for the project is the team of McCownGordon Construction and Quest Construction. The information and drawings included in this Facility Design Plan are provided by CO-OP Architecture and Anderson Mason Dale Architects with consultant information from Helms & Associates, Sichmeller Engineering, IMEG, and Confluence.

A. Architectural, Mechanical, and Electrical Design

The Business and Innovation Center will be located on the northwest corner of campus at the current site of Lincoln Hall and Briscoe Hall. This location will provide a welcoming entry point to campus for those arriving on campus from Aberdeen's Main Street. The two-story facility will include 40,600 square feet. The ground level will include office space for the School of Business faculty, dean, and staff, two classrooms, study spaces, huddle rooms for small group meetings and telehealth, and the Northern Innovation and Startup Center. Academic programming, such as offices and classrooms, will be located around the perimeter of the building will include glazed interior partition walls to allow daylight to reach the core of the building and its spaces. On the second floor, there will be three classrooms, two of which are designed primarily for the School of Business while the third will be used for nursing classes. In addition, the second floor will include a technology-rich conference room, offices for nursing faculty and staff, nursing simulation labs, debrief rooms and a skills lab. The building's two-story commons area will provide ample space for students to study and interact, however specialty nursing equipment on the second floor will be safely separated from general building users. This space will also be utilized for events hosted by the adjacent Innovation and Startup Center. The use of ceramic tiling, carpeting, and resilient tile flooring is planned throughout the building, ensuring practicality and visual appeal. Polished concrete is another cost-effective flooring option that may also be considered. Ceilings include acoustic panel, gypsum board systems, and wood trim, which contribute to the building's acoustic performance and visual warmth. Special attention will be given to the main commons to create a professional and welcoming atmosphere, particularly achieved with wood accents and technology-rich display boards.

The exterior building façade was designed with extreme care to fit into the existing fabric of campus. Special consideration was taken into the height and proportion of building elements to

ensure a respectful juxtaposition to the campus green and adjacent structures. The exterior building materials consist of brick and metal panels which will complement existing campus facilities. A glazed curtain wall system will break up the façade, allowing for a variation in material and for access to daylight into the building. The use of both clear insulated glass and spandrel units will be utilized on the curtain wall. The open staircase in the lobby also serves as a focal point on the exterior of the building, sitting directly adjacent to the curtain wall which provides visibility into the commons area. On the east side of the building, the elevator tower anchors the building to the quad and proudly displays the Northern ‘N.’

The building will be designed to meet Green Globe standards as required by the State.

Mechanical/Plumbing Systems

HVAC SYSTEM:

The air handling system will consist of multiple air handling units for each unique department area to accommodate their different occupancy schedules, and their HVAC requirements unique to that area of the building.

Each Air Handling Unit (AHU) will provide the morning warmup heat, all cooling, and all ventilation requirements of the facility by supplying air to variable air volume boxes (VAV’s) with hot water reheat coils. The AHU’s shall utilize hot water heat during the heating season or chilled water cooling during the cooling season (chiller is located to the south by Graham Hall) and shall incorporate a supply fan section with VFD, an air blender, full economizer (free outside air cooling during hot water heating season) from a stationary intake louver, and an integral return fan section with VFD providing full relief through a stationary relief louver.

The main mechanical penthouse containing the three AHU’s that serve the building will be located on the attic level. A faux chimney extending from the sloped roof will house stationary louvers on the east and west sides to provide the fresh outside air and corresponding relief for the penthouse air handlers.

Data Rooms: The central VAV air handler system will serve the data rooms or electrical rooms requiring cooling on their own zone, which will provide individual cooling to the space year-round, rejecting heat back into the central HVAC system.

Individual Zone Control

Each individual zone will have a VAV box located above accessible ceilings, within mechanical rooms, or in the attic space. If a zone calls for cooling the VAV box damper opens and allows the 55-62 degree air to enter the zone from the air handler satisfying its cooling requirements. If the zone is calling for heat, the VAV box damper opens to its heating position and the reheat coil is used to heat the air to satisfy the zone’s heating requirements. When there is no call for heating or cooling, the VAV provides for proper ventilation air.

Supplemental cabinet unit heaters will be utilized to offset infiltration in high traffic locations with exterior doors, and at all vestibules.

Supplemental hanging unit heaters will be utilized to heat non-critical spaces such as the mechanical rooms and loading dock.

Supplemental radiation heat will serve perimeter areas where necessary for improved occupant comfort.

Hydronic Heating Water Heating System

The hydronic heating piping will consist of an insulated, two-pipe hydronic hot water loop that will use circulating pumps to circulate heating water to the AHU, VAV's, CUH's, hanging unit heaters, and panel radiation where applies. Heat will be injected to the hot water heating loop as needed by using high efficiency, near condensing natural gas fired boilers located in the first-floor mechanical room. Boiler venting will be routed up through the building to a faux chimney termination per manufacturer's recommendations. Combustion air will be routed through the building to a louver under the soffit on the south wall of the building.

Hydronic Chilled Water System

The chilled water system will be served by an air-cooled chiller installed in a mechanical yard by the existing Graham Hall. The chilled water circulating pumps, air separator, and expansion tank on the chilled water loop will be located in the first-floor mechanical room. Below grade pre-insulated piping will be utilized to route chilled water supply & return piping into the building through the floor.

Ventilation Systems

Continuous exhaust will be provided in code required areas such as storage rooms and restrooms. Inline exhaust fans will be utilized to provide exhaust for each restroom group and associated janitorial/storage areas. Inline exhaust fans will be utilized and ducted to an exhaust louver on the south side of the building. Exhaust fans will be applied based on the areas served, and any unique occupancy schedule requirements of the zones served.

Temperature Control System

The temperature controls will consist of a new web-based direct digital control system with a graphics interface for changing setpoints and monitoring and will have remote access capability for owner designated personnel.

HVAC WARRANTIES

The mechanical contractor shall warrant his work against failure and workmanship for a period of at least one year from the date of substantial completion. Any work that is defective within that one-year period shall be replaced by the Contractor without charge. If longer/special warranties are noted elsewhere in the specifications, those warranties shall apply.

EXTENDED COMPRESSOR WARRANTY ON THE AIR-COOLED CHILLER.

Compressor parts shall be under warranty for an additional four years from the date of original installation but, in no event, for longer than five years and six months from the date of shipment from the factory. During this time, the manufacturer will repair or replace any compressor part which upon inspection proves to have been defective. Labor for replacing the compressor would be at a cost to the owner.

PLUMBING SYSTEM

The plumbing systems shall consist of the following:

Sanitary Sewer Service

The new facility will have a new six-inch sanitary sewer service.

Storm Sewer Service

The new facility will have a new storm sewer service by others to serve the gutters and downspouts for storm drainage.

Domestic Water Service and Dedicated Fire Sprinkler Water Services

A new four-inch domestic water service, riser, and meter fit will be installed in the new first floor water entry room. A new dedicated six-inch fire sprinkler service will be installed in the same room with a fire sprinkler riser and zone valves.

Plumbing Fixtures

New fixtures will be ADA compliant where necessary.

Wall hung photo-eye operated flush valve toilets and wall mount urinals will be provided. Photo-eye operated faucets will be utilized for lavatories. Wall mount manual soap dispensers would be by others. Plumbing fixtures will be high efficiency, low water consumption fixtures to meet the requirements for the Water Use Reduction Green Globe credits.

Exterior wall hydrants to be located such that they cover the perimeter exterior of the first floor.

Domestic Water Piping & Insulation

To prevent pitting, scaling, or corrosion below & above ground domestic cold, hot, and recirculating hot water piping & fittings shall be Uponor PEX-A with a 25-year warranty. The exception will be all piping within the mechanical room, at the water meter fit, & gas fired water heater. All mains & branch piping above grade shall be insulated with fiberglass and a sealed vapor barrier.

Domestic Hot Water System

A high-efficiency, gas-fired domestic hot water heater with recirculation pump in the first-floor water entry room will be utilized to store water at 140F and distribute 120F water to the domestic hot water system by using a digital mixing valve. Venting & combustion air will be routed out the south wall per manufacturer's recommendations. A domestic hot water recirculation system will be used to ensure that the building occupants do not have to wait for hot water.

Sanitary Waste/Venting

All sanitary waste and venting shall be PVC piping except for cast iron venting required in any return air plenums.

Natural Gas Piping

All natural gas piping shall be schedule 40 black pipe with isolation valves and pressure reducing valves as necessary.

A new natural gas service & meter fit will provide natural gas necessary to serve the high efficiency near condensing boilers and high efficiency water heater that will provide for the heating and domestic hot water needs.

Storm Drainage

Building storm drainage will be by others with gutters and downspouts to a below grade storm sewer by others.

Cooling Condensate Drainage

All condensate drain piping from the Air Handling Units shall be insulated Type “L” Copper or Schedule 40 PVC and routed to floor sinks.

Sump Pump System

A sump pump and basin will be installed in the elevator pit for the new elevator for the proposed Lincoln Hall. Summer discharge shall be into a drain leader from the gutter downspout leading into underground storm drainage. Winter discharge will discharge into a mop sink in the second-floor custodial room. A high-water alarm panel will be in this room as well. Piping materials shall follow the same requirements as sanitary waste/venting.

FIRE SPRINKLER SYSTEM

A complete fire sprinkler system will be installed meeting NFPA, local codes, & the Fire Marshal’s requirements. A fire department connection will be installed on the street address side of the building. The fire sprinkler system will be from a dedicated fire sprinkler service installed in the new perimeter water service room.

Pending discussion with Owner on protection of IT/Data equipment, either a double interlock preaction sprinkler system with electric/pneumatic release or a clean agent/dry chemical system will be applied in IT rooms as required. The dry chemical system will also require protection with the main sprinkler system unless otherwise approved with the authority having jurisdiction.

Electrical Systems

Project Description

This project will include work on Graham Hall for separation of electrical services that are fed from Lincoln. A new electrical service will be fed from the Student Center. A primary electrical room, water entry / domestic water boiler and (Main Distribution Frame) MDF will be located on the ground floor, adjacent to a service drive. Additional electrical rooms and Intermediate Distribution Frame (IDF) rooms are located on the upper floor levels. Mechanical Penthouse will include units accessible via one stairway and one stretcher sized elevator that will go to the mezzanine level.

Sustainability and Energy Goals

Project will comply with Green Globes.

Points will be reviewed and determined by the design team and owner.

Lighting Systems

Lighting levels for each space will be designed in conjunction with the NSU building/grounds specifications and the illuminating engineering society (IES) lighting handbook.

Additional mandatory controls for lighting that include manual switching, automatic controls to reduce lighting levels, and day lighting controls will be installed.

Lighting System Components

Interior Luminaires:

LED luminaires will be used for all lighting.

Exterior Luminaires:

LED luminaires with low temperature drivers will be located in exterior applications at exit doors, parking lots, and along walkways and drives. Exterior lighting will be a combination of building mounted downlighting, with decorative and accent lighting being explored as appropriate. Exterior luminaires will be selected to match the existing campus standard for building mounted and pole mounted luminaires. Design of the exterior lighting will be coordinated with the architect and landscape architect.

Lighting Controls

Lighting controls will comply with the applicable energy code.

Emergency Lighting

Emergency egress lighting units shall be provided utilizing battery inverters for main corridors and open areas and bug eye style luminaires for utility spaces. Myers Lighting inverters are the basis of design.

Exit signs will be LED type luminaires with die cast aluminum housing. Emergency battery-powered wall pack luminaires will be provided in all the mechanical and electrical utility rooms.

Power System Requirements

The electrical service to the new Lincoln Hall addition will be served by the owner existing 500KVA transformer that will be relocated at grade level on the south side of the building. From the utility connection cabinet at the Student Union, underground electrical primary service will be routed in duct bank to the transformer.

Metering will be installed in accordance with the Northern States University requirements.

Main Distribution

The service entrance main switchboard (SB-1) is anticipated to be rated 1600-amp at 120/208-volt, 3-phase, 4-wire, 100k AIC. MDC will include 1600-amp adjustable-trip, ground fault main

circuit breaker and an Arc Maintenance Switch (AMS) to temporarily reduce the interrupting rating of the main circuit breaker for personnel safety per the NEC.

Generator

No generator is planned for this project.

Normal Distribution

New normal power branch lighting loads will be served from new 200-amp, 208/120 volt, 3-phase, 4-wire branch circuit double tub panels with 84 circuits. Each floor will have a minimum of two 200-amp dedicated branch circuits that will serve east and west side loads.

A 120/208 volt, 3-phase, 4-wire, 42 space branch circuit panelboard will serve mechanical equipment loads on Level 1 and Level 2.

A 120/208volt, 3-phase, 4-wire, 24 space branch circuit panelboard will be provided for each floor to serve lighting loads.

Branch Distribution

Branch circuit design will be based on a maximum of 1,900 volt amperes per 20 ampere, 120 volt circuit, and 4,400 volt amperes per 20 ampere, 277 volt circuit.

Lightning Protection

No protection is planned. There is not an existing system on campus.

Grounding System Requirements

A grounding system and equipment grounding will be provided per National Electrical Code Article 250 for transformers, motor starters, panelboards, switchboards, transfer switches, wiring systems, etc.

Electronic Metering

A power monitoring system will be provided. This power monitoring system will consist of electronic power monitoring devices on distribution panels as required to track receptacle, lighting, motor, fan, and miscellaneous loads separately per the Green Globe requirements.

Fire Alarm and Communication System Requirements

The new Voice communication fire alarm system design shall consist of a detector at the fire alarm control panel (FACP). Fire/smoke dampers are anticipated to be electric (120-volt) and can be controlled through spot detection, groups of detectors or duct detectors as allowed in the International Building Code (IBC). Each initiating device, including manual pull stations, will have their own unique address and report to the fire alarm control panel. Addressable monitor modules will be used to monitor sprinkler flow and tamper valve position. The existing campus fire alarm system is connected to the Johnson Control system and the fire alarm system will require relays for interconnection to that system.

Firestopping: All penetrations to fire rated wall will be fire stopped.

Utilities

The electric power will be from NSU's electric distribution system. NSU receives a WAPA allocation and supplemental power is purchased through the State of South Dakota contract with Heartland. Natural gas will be provided by Northwestern Energy.

B. Changes from Facility Program Plan

The size of the building has been reduced and the departments to be housed in the Business and Health Innovation Center have changed. The Facility Program Plan included 48,000-50,000 square feet to accommodate the School of Business, Accelerated Nursing, International Programs, Admissions, Development and Alumni and incubator space.

Due to budget constraints related to increased building costs as well as further consideration of departmental adjacencies, the size of the building has been reduced to 40,600 square feet. The new facility will be home to the School of Business, the NSU nursing program, and the Innovation and Startup Center.

C. Impact to existing campus-wide heating, cooling and electrical systems

The new facility will have standalone heating and cooling systems. Graham Hall, currently served from the existing Lincoln Hall being demolished in this project, will have a new standalone cooling system and will utilize capacity from the Avera Student Center heating system. The existing campus electrical loop has the capacity to absorb the increase in demand resulting from this project.

D. Changes from the cost estimates for operational or M&R expenses

There have been no changes to estimated operating costs or M&R costs from those provided in the Facility Program Plan.

E. Estimated project costs**Project Costs**

Construction Costs	\$22,895,497
Construction Contingency	1,368,725
	\$24,264,222

Soft Costs

Architect/Engineer Fees	\$1,990,000
Office of the State Engineer Fee	75,000
Briscoe Hall Demolition and Asbestos Abatement	450,000
Furniture, Fixtures & Equipment	2,428,250
Survey	19,500
Geotech and Construction Testing	123,090
Commissioning	148,200
Abatement	160,000
Miscellaneous	64,800
Owner Contingency	1,726,938
Total Soft Costs	\$7,185,778

Total Estimated Project Cost	\$31,450,000
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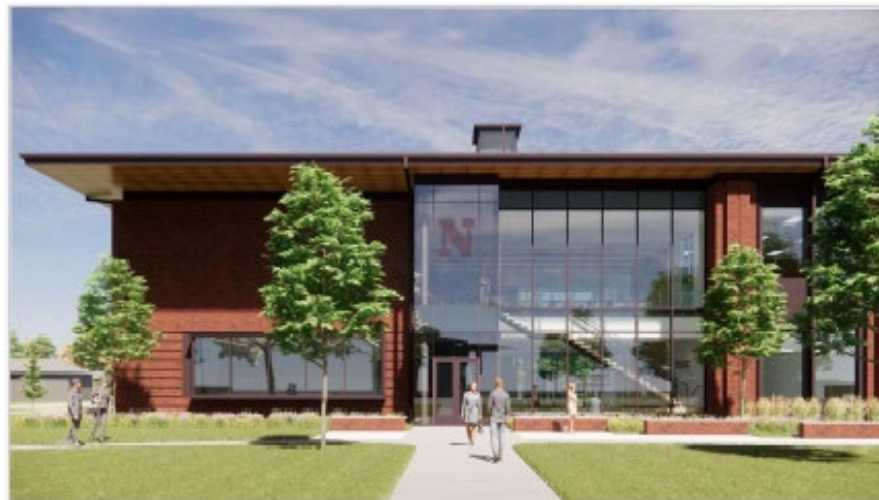
Funding Sources

American Rescue Plan Act (ARPA) Capital Projects Funds	\$29,500,000
General Fund Appropriation	\$1,500,000
NSU Auxiliary System Plant Funds	\$450,000
	\$31,450,000

F. Timeline

The Guaranteed Maximum Price (GMP) will be established in early 2024. Asbestos abatement will begin in January. Demolition and construction will begin in the spring of 2024 upon approval of the GMP. With an expected construction period of 14 months, the anticipated completion date is July of 2025.

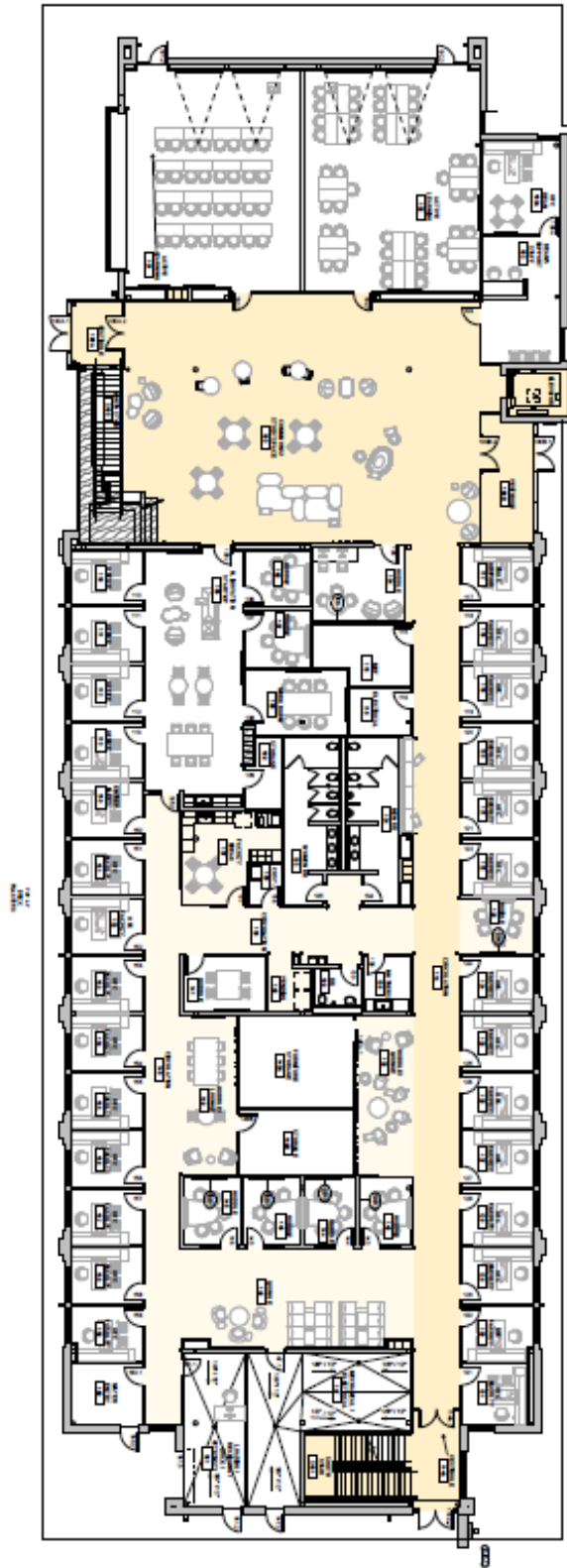
Exterior Renderings



Commons Area



First Floor



Second Floor

