RECOMMENDED ACTION OF THE EXECUTIVE DIRECTOR

Approve SDSU’s Facility Design Plan to construct a four building residence hall complex in the southeast quadrant of campus at a cost not to exceed $45,752,596. Funding for this project includes $44,900,000 from bond issuance, $352,596 from Residential Life R&R Accounts, and $500,000 from private donations. If approved, SDSU requests the Building Committee be granted authority to approve the Guarantee Maximum Price (GMP).
In accordance with the Board of Regents Policy 6.4 for Capital Improvements, South Dakota State University (SDSU) requests approval of this Facility Design Plan. SDSU also requests that the Board of Regents grant authority to the Building Committee to approve the Guaranteed Maximum Price (GMP) in January to allow the construction process to proceed in Spring 2012.

The Southeast (SE) Living Community project shall construct an 800-bed residence hall complex to meet the goals outlined in the Updated Residential Life and Dining Services Master Plan (2011-2018). This submittal is a result of the schematic design completed by Koch-Hazard Architects, Treanor Architects P.A., and construction manager at risk (CM@R), Sioux Falls Construction Inc.

A. Architectural, Mechanical & Electrical Schematic Design

Schematic Design and Summary of Architectural Work:

1. There are four buildings in the proposed design that create unique communities for freshmen and sophomores.
   a. The northeast (NE) and southwest (SW) buildings have four floors and provide double occupant rooms for housing freshmen. The buildings have private bathroom facilities that are adjacent to small groupings of rooms.
   b. The southeast (SE) building has three floors and provides two different room configurations. Double occupant rooms with adjacent bathrooms for freshmen and 4 person suites which private bathrooms for sophomores.
   c. The central building provides three different configurations to accommodate both freshmen and sophomores. There are double occupant rooms with adjacent bathrooms as well as four-person and eight-person suites with private bathroom facilities.

2. Each community (26 to 41 students) will have a living room, kitchen, laundry, and study spaces.

3. Lobbies with a front desk shall be located on the Central and SW buildings. The SE and NE buildings will have staff offices to serve students.

4. Hall Director Apartments will be located in NE and SW buildings.

5. The lobby in the Central building provides offices, programming space, and an additional study lounge.

6. The NE, SW and central buildings will include recreation space in the basement.

7. Universal design shall be incorporated into public spaces. Resident’s beds are capable of lofting; the rooms shall be adequately sized to allow all furniture to be situated on the floor if necessary.
8. Each building shall have dedicated mechanical and electrical rooms, storage, and support spaces. Primary hydronic and air handling equipment will be located in lower level and/or enclosed roof level spaces.

9. Elevator shall be located in each building; providing access to all public spaces.

10. The exterior walls of the facility will be constructed of precast concrete with a combination of thin brick and textured concrete to integrate the appearance of the facility with the surrounding buildings. The interior walls shall be firred-out with insulation and drywall.

11. The roof will be constructed of precast concrete cored roof slabs with insulation and a single-ply roof membrane. Any sloped roofs shall be standing seam steel.

12. Lower level and on-grade floors will be four-inch concrete slab. Precast concrete cored floor slabs with concrete topping shall be used on upper level floors and where first floor spans lower level spaces.

13. Flooring will be a combination of carpet and vinyl tile. Community corridors, community lounges, and community quiet rooms will have carpet flooring.

14. The floor-to-ceiling assemblies will meet a sound transmission class of at least 55 and an impact insulation class of at least 50.

15. Interior walls shall be of steel stud with gypsum board and sound attenuation. The interior wall assemblies will meet sound transmission class of at least 50.

16. Ceilings shall be acoustical panel ceiling (fixed gypsum board) within residence spaces. Public areas shall have mix of acoustical panel ceiling and lay-in ceiling with grid (where access is required for building systems).

17. Bathroom spaces shall have ceramic tile flooring. Walls shall have ceramic tile full height in shower areas and partial height in all other locations.

18. Building access for residents will be accomplished with card swipe systems at primary entrances. Room access will be with an assignable key.

19. The facility will be designed to meet LEED Silver requirements.

Description of Mechanical Systems:

1. Fire Protection:
   a. Fire sprinkler system shall be installed throughout the facility; designed to comply with NFPA 13 and NFPA 14. Dry-pipe if subject to freezing; wet-pipe elsewhere.
   b. Each building will have also have a manual wet standpipe system.

2. Plumbing:
   a. Domestic water service shall be fed from the adjacent existing water mains. Each building shall have its own service connection. Within the building the service shall branch for domestic use and fire suppression. Existing Pierson and Brown Halls will house the domestic hot water heaters and water softeners. The water softeners will treat water used for domestic hot water use. The domestic hot water will be generated using semi-instantaneous, steam-fired, hot water heaters. Recirculation system shall maintain system temperature. The hot water will be distributed the new halls through walking tunnels that connect all the buildings.
   b. Sanitary sewer shall be directed from the facilities to adjacent service mains located within the site.
   c. Storm sewer drainage shall be provided at necessary locations to pick up building roof drains and any site drainage around the facilities that cannot be accomplished through site grading. New service mains shall be located within the site and directed to match up with existing mains.
3. HVAC:
   a. The facilities will be fed from the campus district steam system. Steam service shall be upgraded to both Brown and Pierson Halls through both existing and new walking tunnels. The steam shall be used for both heating domestic hot water use, and the hydronic heating system.
   b. The heating, ventilation, and air conditioning system for public and residential spaces shall be a two-pipe heating/cooling fan coil units with auxiliary electric coils. Buildings shall be zoned controlled on an individual room or per suite basis, with a typical range of control of about 6 degrees for each unit.
   c. Building ventilation systems shall be centralized with ducted distribution to all fan coil units. The exhaust system will serve the bathroom facilities and other general exhaust requirements. The exhaust shall be centralized and directed back to the ventilation system with heat recovery.
   d. The two-pipe heating/cooling hydronic system shall be operated based on seasonal requirements. The primary equipment for the hydronic systems will be located in Pierson and Brown Halls with the distribution piping running to the new facilities through the walking tunnels. The heating capacity shall be served by a steam-to-water shell and tube heat exchanger. Duplex pumps shall be installed for redundancy. The cooling capacity shall be served from the campus chilled water system and coupled through plate-and-frame heat exchanger to the building hydronic system.

Description of Electrical Systems:
1. Electrical service shall be routed from the campus electrical distribution. New primary feeds shall be routed through the site feeding a combination of sectionalizing switches and transformers. A feed through type transformers shall be utilized to loop primary feeds and provided redundancy. Each building will have a dedicated transformer providing 480V to the building.
2. The electrical distribution system will have 480V main service panels within each facility for use with building equipment. Secondary transformers shall provide 208V/110V power as distributed to local panel boards on each floor. TVSS protection shall be provided at each floor for protection of resident’s electronics.
3. Interior lighting shall be a combination of T-8 and T-5 fluorescent fixtures and compact fluorescent fixtures for common areas. Residential spaces and community rooms shall be equipped with wall outlet switching for occupant provided task lighting. LED lighting shall be used in exits. Lighting levels throughout shall be designed to meet IES standards. Emergency lighting with battery back-ups shall be provided where code requires.
4. Exterior lighting shall be provided for new paths, entrances, and building surface details. Metal halide fixtures shall be controlled with photocell.
5. An addressable fire alarm system shall be installed throughout each building per appropriate code.
6. Campus internet system shall be distributed to a dedicated hub located within each of the buildings. From the hub, data drops shall be distributed per program requirements. There shall be one drop for each room occupant within the residential spaces. Commons spaces including community living rooms and study room shall also have access to internet with data drops and wireless.
7. Telephone service shall be distributed in the hall staff spaces and several public locations in each of the buildings. Residential spaces shall generally not have wired phone service due to the high percentage of cell phone use among the student population.
8. A cable television system shall be distributed to each of the buildings. From there the signal service shall be distributed based on program requirements. There shall be one drop for each residential spaces. Service shall also be installed in community living rooms.

See attached floor plans and elevations view.

Project Timeline:
By the end of January 2012, the architect will complete the design development phase which will result in a guarantee maximum price (GMP) from the CM@R. This price will be reviewed and acted upon by the BOR Building Committee. Upon completion of this phase, the construction of the facilities will proceed with an anticipated completion date of August 2013.

Project Schedule:
Key Dates:
- GMP by CM@R: January 31, 2012
- BOR Building Committee Reviews GMP: February 2012
- Construction Start: April 1, 2012
- Construction Completion: August 2013
- Student Occupancy: Fall Semester 2013

B. Changes from Facility Program Plan
The Facility Program Plan for this project was approved by the BOR at the October 2011 meeting. This document was presented in a combined submission with the dining expansion project. To further clarify the details associated with each project the Facility Program Plan was revised and resubmitted to the BOR for approval in December of 2011. Based on this approach there are no changes from the Facility Program Plan.

C. Impact to Existing Building or Campus Wide Heating/Cooling/Electrical Systems
Electrical Distribution:
The residence halls will receive electrical power from the existing campus electrical distribution. Recent upgrades to the electrical loop will allow it to accommodate the capacity required for the facility. Utility extension to the new facilities will enhance redundancy to adjacent existing facilities including Brown, Pierson, and Mathews Halls.

Impact to Existing Tunnels (and associated utilities):
Utility tunnels shall extend to the new residence halls. Additional walking tunnels shall be built to route steam and hydronic piping to the new facilities. Utility extension to the
new facilities will provide redundancy for the steam service; benefiting adjacent existing facilities including Brown and Pierson Halls.

**Chilled Water System:**
Piping from the central chiller water plant will extend to the new facility to meet the required cooling loads of the buildings.

**Water:**
New water service, sized to handle the domestic water and fire protection requirements will be extended to the existing water mains located on 9th street, Grove Lane, and Student Center Lane. Fire hydrants on the site will be located to meet code.

**Sanitary Sewer:**
New sanitary sewer service from each building shall be extended to the existing sanitary mains located on 9th street, Grove Lane, and Student Center Lane.

**Storm Sewer:**
New storm sewer system shall be routed through the site to serve both the buildings and site drainage. These mains shall be installed and routed to the north to meet up with existing storm drainage systems. These improvements shall greatly enhance water drainage in the area of construction as much of the area relies on surface drainage.

**Natural Gas:**
Natural gas main shall be extended through the site and connect to each building.

D. Total Estimated Construction Costs:
The total project cost is estimated to be approximately $46,650,566 for the design and construction of the facilities including utility infrastructure. The breakdown is shown in the following table.

<table>
<thead>
<tr>
<th>Project Cost Estimate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Construction</td>
<td>$35,587,973</td>
</tr>
<tr>
<td>Utility Infrastructure Construction</td>
<td>$2,692,920</td>
</tr>
<tr>
<td>Contingency*</td>
<td>$3,328,694</td>
</tr>
<tr>
<td>Total Construction Costs</td>
<td>$41,609,587</td>
</tr>
<tr>
<td>Facility Design Costs</td>
<td>$4,143,009</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT COST ESTIMATE</strong></td>
<td><strong>$45,752,596</strong></td>
</tr>
</tbody>
</table>

* 8% of construction costs.

Project funding shall include $44,900,000 from bonds issued to cover the facility construction and project costs, and utility infrastructure; and $352,596 from Residential Life Repair and Replacement Accounts to support a portion of the utility infrastructure, and $500,000 in private donations to fund program space in the central hall.

E. Changes from Cost Estimates for Operation or M&R Expenses
SDSU does not anticipate any changes from the estimated operating, and maintenance and repair expenses noted in the Facility Program Plan.
Construction, ongoing operating, and maintenance and repair expenses will be funded through student rents as well as rent from the Honors College for program space in the central hall. The rental fees for the new facilities will be between $2,400 - $2,500 per student, per semester.
NORTHEAST BUILDING: FIRST FLOOR PLAN VIEW
SOUTHWEST BUILDING: FIRST FLOOR PLAN VIEW

Upper floors are connected above passage.