

# MISSOURI UNIVERSITY OF SCIENCE & TECHNOLOGY

## CAMPUS BUILDINGS

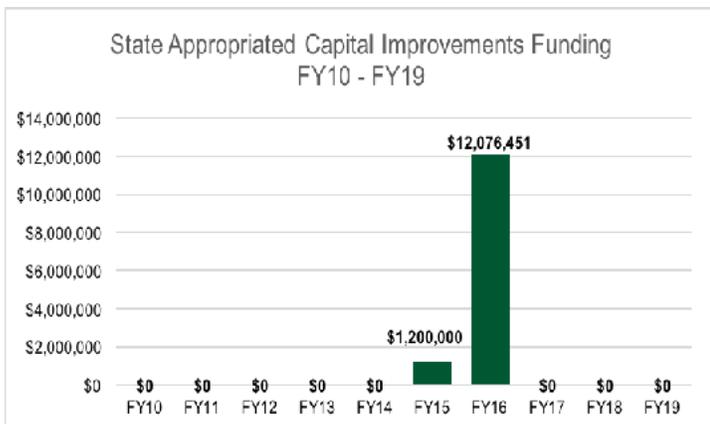
|                                     |                      |
|-------------------------------------|----------------------|
| Education & general (E&G) buildings | 104                  |
| E&G building SQ. FT.                | 1,996,165            |
| Auxiliary (AUX) buildings           | 44                   |
| AUX building SQ. FT.                | 980,216              |
| Buildings leased from               | 13                   |
| Leased from building SQ. FT.        | No less than 146,462 |
| Buildings leased to                 | 6                    |
| Leased to building SQ. FT.          | No less than 10,358  |
| Student housing/bed space           | 2,315                |
| Percent of bed space utilization    | 90%                  |
| <b>Maintainable campus SQ. FT.</b>  | <b>2,976,281</b>     |

### Grounds

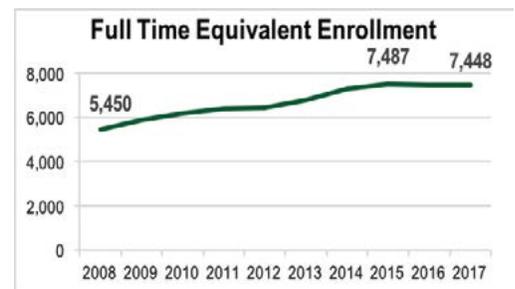
|                      |                       |
|----------------------|-----------------------|
| Tunnels              | 0.35 Acres/12,826 lf  |
| Roads paved          | 1.47 Acres/2104 lf    |
| Sidewalks            | 4.2 acres (Estimated) |
| Paved parking lots   | 30.85 acres/44 lots   |
| Gravel parking lots  | 0                     |
| Farm acreage         | 0                     |
| Other Specialty Land | 0                     |

### Buildings Needing Demolished

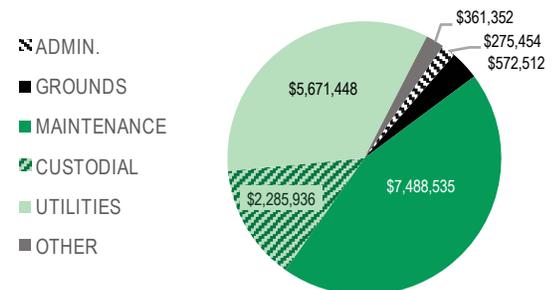
|              |           |
|--------------|-----------|
| Schrenk Hall | \$690,000 |
| IDE          | \$280,044 |
| TKE          | \$160,370 |
| 1602 Pine    | \$20,000  |



The state has appropriated \$13.3 million in capital improvements funding to the Missouri University of Science & Technology over the last decade.



### FY18 E&G FACILITIES PLANNED BUDGET



### Utility Providers

|                    |                      |
|--------------------|----------------------|
| <b>Electric</b>    | RMU                  |
| <b>Natural gas</b> | Ameren               |
| <b>Water</b>       | RMU                  |
| <b>Phone</b>       | Fidelity/CenturyLink |
| <b>Internet</b>    | Fidelity             |

### Total Institutional Facility Debt/Bonds

|                            |    |
|----------------------------|----|
| E&G Buildings              | NA |
| AUX Buildings              | NA |
| Available bonding capacity | NA |

### Community Facilities on Campus

|                  |        |
|------------------|--------|
| Bullman Building | 38,837 |
| Havener Center   | 12,605 |
| Castleman Hall   | 16,600 |

### Buildings on Historic Registers

|                                 |  |
|---------------------------------|--|
| Bureau of Mines Building (1940) |  |
|---------------------------------|--|

### Physical Asset Reinvestment (M&R) for E&G Purposes

|  |              |
|--|--------------|
| Total deferred maintenance for E&G Buildings | \$61,903,474 |
|--|--------------|

The Missouri S&T Geothermal Energy Project has served the heating and cooling needs of 17 buildings and augmented the campus chilled-water system, which serves many of the university's ancillary facilities since 2014.

### Utility Distribution (Linear Ft.)

|                 |        |
|-----------------|--------|
| Chilled water   | 20,400 |
| Domestic water  | 11,000 |
| Steam/Hot water | 20,400 |
| Electrical      | 10,500 |

Campus Physical Address:

1870 Miner Circle,  
Rolla, MO, 65409

Year institution was founded:

1870

Date last campus master plan was completed:

2017

Date last deferred maintenance audit was completed:

2010/2017

Total campus size:

311 acres





# Missouri University of Science & Technology

Missouri University of Science and Technology (S&T) is a highly selective institution located in Rolla. S&T has a major responsibility for meeting Missouri's needs for engineering education, but it offers a variety of bachelor's, master's, and doctoral degree programs — several of which contain many science and math courses — and others that are focused on the liberal arts and the humanities. Each degree program has a technological focus that is unique to S&T. About 8,900 students attend S&T; about 78% are undergraduates, and 22% are graduates.

## Capital Improvement & Facilities History

The Missouri University of Science & Technology has only received state funding twice in the past decade for capital improvement projects. In 2015, the university received \$1.2 million for the renovation and construction of an Experimental Mines Building. The funding was matched by local donations to construct a building including laboratories and classrooms where S&T's growing number of mining and explosive engineering students can conduct real-life mining experiments. The university's experimental mine is one of only two in the country where professional competitions are held so first responders can train to properly respond to mine disasters. In fiscal year 2016, S&T received Board of Public Buildings bond funds to renovate Schrenk Hall West.

## Facility Challenges

The S&T campus consists of 104 Education & General Buildings and 44 Auxiliary Buildings with over 2.9 million gross square feet (GSF). The geothermal project, completed in 2014, reduced energy use by 57 percent, reduced carbon dioxide emissions by 25,000 tons per year, and reduced water usage by over 18.7 million gallons per year. The geothermal project was leveraged to make improvements to infrastructure and systems throughout campus, resulting in an overall reduction of the deferred maintenance backlog by over \$60 million, a 27 percent reduction at that time.

However, over 22 percent of the E&G buildings on the campus have not had a major renovation in over 50 years and another 40% of the buildings have not had a major renovation in over 25 years. Approximately 21 percent of the total gross square feet of E&G buildings on the campus have a rating of below average or worse. Currently, the campus has over \$154 million in facilities needs including over \$62 million in deferred maintenance. A significant portion of the deferred maintenance is building systems (i.e. mechanical, electrical, plumbing, etc.) as well as interior finishes (i.e. painting, floor systems, ceiling systems, etc.).

“

*The Missouri University of Science & Technology integrates education, research and application to create and convey knowledge that serves our state and helps solve the world's great challenges.*

”

# Capital Priorities

The Board of Curators and the Missouri University of Science & Technology have identified the following as the university's top three priorities for the future. The total state request for these projects is about \$53 million.

## 1. Schrenk Hall Addition and Renovation – Phase III

The Phase III project will build on the success of Phase I, Bertelsmeyer Hall, completed in 2013, which houses chemical and biological engineering programs; and Phase II, a partial renovation of the Schrenk Hall's west wing, which is currently in construction. The new Biosciences Building is the final phase of an interdisciplinary complex dedicated to providing world-class education and research in biological sciences, chemistry, and chemical and biochemical engineering.

**Project Cost: \$54,005,000**  
**Local Contribution: \$11,005,000**  
**State Request: \$43,000,000**



This renovation and expansion project will provide a technological, student-centered anchor for innovation. By adding expanded research space, modern classrooms, open-concept research labs, and improved accessibility, the Biosciences Building will leverage S&T's strengths in computational science, environmental engineering, materials science, and engineering to advance medical, environmental, and biomedical research. The building will also be home to an interdisciplinary Center for Research in Biomaterials. Students and faculty will conduct research in bio-active, bio-inspired, and bio-mimetic materials for a variety of applications. The Biosciences Building will be an integral component of the student experience at S&T. Almost every student will take at least one class here in one or more important foundational courses in biological sciences or chemistry.

This project will complete the renovation of the west wing which was started in the Phase II project. This project will demolish the existing east wing and construct a new four-story 90,400 GSF addition. The facility will provide teaching laboratories, research laboratories, a vivarium, classrooms, support space and administrative offices. An atrium will bring the east and west wings together to provide a collaborative environment for both students and faculty.

## 2. Engineering Research Lab Addition and Renovation

The Engineering Research Laboratory (ERL) Addition and Renovation project will renovate the ERL, built in 1971, and connect it with Straumanis-James Hall (built in 1967 and renovated in 2011). The new Research Building of approximately 86,500 GSF will be constructed east of the ERL building (45,800 GSF) and north of the Straumanis-James Hall (30,200 GSF). It will incorporate the geothermal plant addition into its structure and create a unified research center of approximately 162,500 GSF that will aesthetically anchor the northeast corner of campus. This building will provide additional interdisciplinary research space which has been identified as a high priority in both the strategic plan and campus master plan.

**Project Cost: \$43,000,000**  
**Local Match: \$33,000,000**  
**State Request: \$10,000,000**



cont. >>

Since this project will house interdisciplinary research, its impact will be felt campuswide and will affect all degree programs. An estimated 1,300 students will be impacted by this project annually. The need for additional interdisciplinary research space has been identified as a high priority in both the strategic plan and campus master plan. The campus space utilization study indicated a deficit of research laboratory space.

The ERL has received minimal renovation since its construction over 45 years ago. This project will address life safety code issues, implement energy conservation measures, address accessibility issues, and replace building systems that have exceeded their life expectancy. This project will eliminate \$8.7 million of facilities needs.

Additional operating costs are estimated to be \$230,000 annually and will be funded by the campus operating budget.

### 3. Wilson Library/Learning Commons Addition and Renovation

Current trends in academic library design indicate the Curtis Laws Wilson Library (92,000 GSF) is in need of a substantive renovation

**Project Cost: \$10,318,000**  
**Local Match: \$10,318,000**

to best serve the needs of the university. This project includes comprehensive phased planning for the four-story structure to align with the library's strategic plan. Focus was given to incorporating a learning commons featuring flexible, collaborative spaces for students and faculty. Wayfinding improvements include relocating the service desk and staff office space, opening the building's east-west axis, and reconfiguring the IT help desk area. Another important effort includes incorporating technology throughout the building. Relocating non-library uses out of the facility will also provide additional collaborative space.



The Library/Learning Commons Addition and Renovation will impact the entire S&T campus, serving all students, staff, and faculty. One of the major goals of the project is to implement a learning commons with additional spaces for groups to convene. A learning commons is a place for individuals to share, meet, learn, and get help. The learning commons at S&T will be unique in that it will also be a place to design and create. Library spaces will be grouped as follows: Share: collaborative open seating, semi-private flexible spaces; Meet: café, games, living room, enclosed group study rooms; Learn: collection, CLC, library classrooms; Get Help: service desk, IT help desk, and; Design/Create: “dogbone” graphics stations, and makerspace. The Wilson Library/Learning Commons Addition and Renovation project will address code and standards issues, implement energy conservation measures, address accessibility issues, and replace building systems that have exceeded their life expectancy. This project will eliminate \$8 million of facilities needs.

Click [here](#) for campus map.

Click [here](#) for Google view.

Click [here](#) for virtual tour.