BURNS McDONNELL

CASE STUDY

New Research Facility to Bolster Advancements in Precision Medicine

The University of Missouri is going boldly into the future of medical research with the Roy Blunt NextGen Precision Health Building. The signature research facility is designed to enhance the academic experience, while attracting world-renowned researchers and industry partners.

Challenge

The University of Missouri (MU) envisioned a center for practicing precision medicine and conducting advanced medical research. Precision medicine is a form of healthcare that is tailored to an individual's genes, lifestyle and environment rather than relying on a one-size-fits-all treatment approach.

MU wanted a hub for life-changing research and transformative healthcare advancements. Design and construction of the facility posed some unique challenges. In an effort to produce advancements in precision medicine, research with both animals and humans will be conducted in the building. The ultimate goal of this research is to create patented medical products and treatments that will bring MU researchers together with industry partners. The design team had to account for both human and animal research and had to see that no one working in or visiting the facility saw or interacted with animals unless it was for intended research purposes.

Project Stats

Client
University of Missouri

Location
Columbia, Missouri

Completion
October 2021

265K
SQUARE-FOOT FACILITY

28
MONTHS-LONG PROJECT USING EXPEDITED DESIGN-BUILD DELIVERY

Solution

Working in tandem, Burns & McDonnell and Whiting-Turner partnered with MU to design and construct the Roy Blunt NextGen Precision Health Building, a 265,000-square-foot facility for advancing research in precision medicine. MU needed a firm with extensive architecture experience to complete the job under a tight project schedule, and brought on our team to provide architectural services.

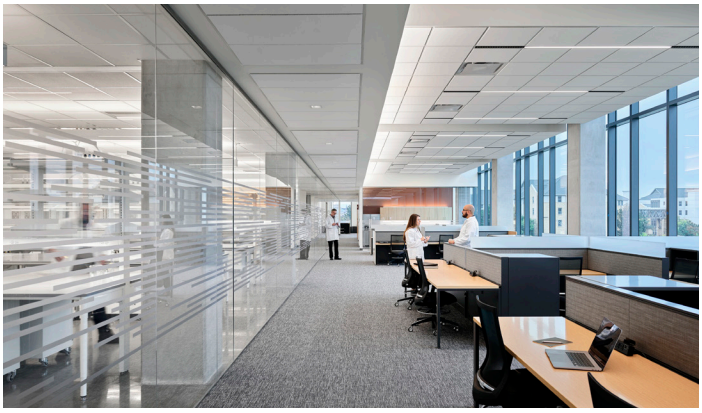
The building enables 30 principal investigators (PIs) and 300 graduate assistants to conduct precision medical research. To offer a collaborative approach to individualized healthcare, the facility brings together healthcare professionals, engineers, and medical and veterinary science students, as well as government and commercial enterprises. It is located near MU Health Care's hospitals and clinics and is available to MU researchers and healthcare professionals.

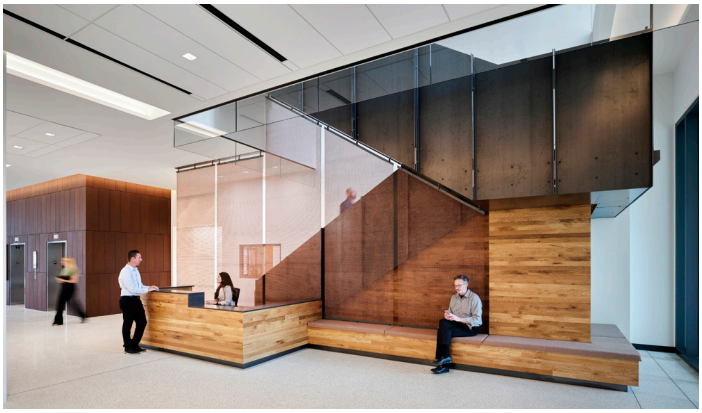
The facility serves as a modern space for the development of medical advancements, while also complementing the existing architecture found on the MU main campus in Columbia. The design incorporates floor-to-ceiling glass walls that provide natural light to brighten work areas, as well as spectacular views of the campus from throughout the building. Tall ceilings, generous windows and high-quality interior finishes speak to the MU's commitment to creating a signature research facility that enhances the system's academic experience, while attracting world-renowned researchers and industry partners.

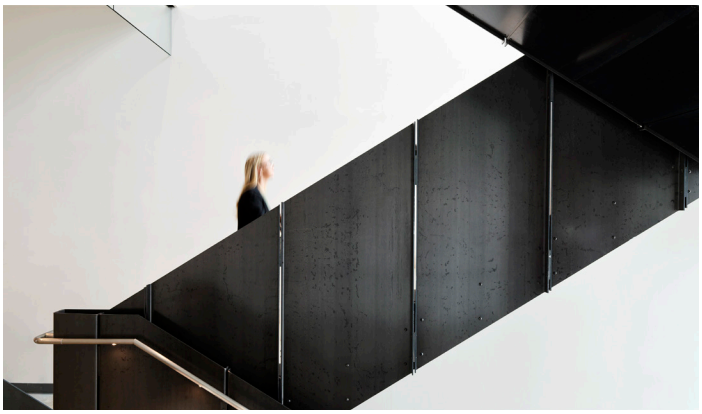
To address one of the major concerns, a vivarium — where small and large animals are kept under conditions simulating their natural environment — is a key part of the design. In addition, there is extensive multidisciplinary laboratory space. The Roy Blunt NextGen Precision Health Building offers unparalleled wet and support labs suited for chemical, biological and computational research. Labs are organized as parts of neighborhoods with associated support functions, equipment, work areas, collaboration spaces and huddle rooms.

The facility also features a state-of-the-art visualization space and a three-device imaging suite. It houses a magnetic resonance imaging machine, and single-photon emission computed tomography and positron emission computed tomography equipment. There is also space for pilot-scale manufacturing.

Also included among the facility's advanced analytical instrumentation is a state-of-the-art Magnetom Terra, a 7-Tesla MRI scanner, one of the first installed in the nation.







This scanner provides higher-resolution images to offer clinical insights into neurologic diseases, including multiple sclerosis and epilepsy, and musculoskeletal conditions that involve the cartilage, muscle and fascia of the knee joint.

Results

The design and construction of the Roy Blunt NextGen Precision Health Building was completed in 28 months. The facility opened in October 2021, approximately six months faster than other facilities of similar scale.

The new complex is poised to elevate the MU's cancer, vascular and neurological research on a national and global scale with the creation of advanced patient-specific treatments. The building also offers leasable space for medical, pharmacological and computational innovators and industry leaders developing new patented medicines and treatments for humans and animals.

It's estimated the medical research facility will cement Missouri's standing as a leader in biomedical research and have a $5.6 billion impact on the state's economy over the next 25 years.

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