

GRAND CHALLENGES RESEARCH BUILDING

University of Arizona | Tucson, AZ

APPLICATION:

The University of Arizona Grand Challenges project, a cutting-edge facility dedicated to advanced research, involved key players like bws Architects, AEI, Kitchell, and Sun Mechanical. Varitec Solutions played a significant role by providing specialized HVAC systems featuring high-pressure atomization humidification and chilled beams for cooling. These innovative solutions ensured optimal environmental control and comfort, addressing the unique requirements of various lab spaces and supporting the facility's advanced functions.

PROJECT TEAM:

Architect: bws Architects
Mechanical Engineer: AEI
General Contractor: Kitchell
Mechanical Contractor: Sun Mechanical

DESIGN & PRODUCT SOLUTIONS

The **University of Arizona Grand Challenges** project is a state-of-the-art facility aimed at fostering innovation and research in various scientific fields. The primary focus was to implement sophisticated HVAC solutions that could meet the unique demands of high-tech lab spaces, particularly those requiring **precise humidity control** and efficient cooling for sensitive equipment and immunocompromised users. The design incorporated **DriSteem high-pressure atomization humidification systems** and chilled beams for cooling, moving away from the standard HVAC technologies commonly used in Tucson.

Collaboration was key to the project's success, involving **bws Architects**, mechanical engineering firm **AEI**, general contractor **Kitchell**, mechanical contractor **Sun Mechanical**, and controls contractor **Climatec**. Varitec Solutions worked closely with AEI to establish the basis of design for the humidification and chilled beam equipment. Leveraging strong relationships with manufacturers and expertise in applied systems, Varitec facilitated a streamlined submittal process and provided essential support in addressing design and installation queries as they arose.

The project showcased several innovative products. The **DriSteem high-pressure atomization humidification system** was selected for its ability to efficiently supply humidity to multiple lab spaces. Its central pump station design allowed for scalability, expanding from the initial three zones to **seventeen zones** to meet the evolving needs of the facility. **Chilled beams** were utilized for effective cooling while maintaining an exposed ceiling aesthetic; all components were painted black to provide a seamless look. Despite challenges such as the complexities of chilled beam orientations and installation in exposed ceilings, the project achieved its objectives. **The systems have performed exceptionally well**, with additional lab spaces requesting humidity control, demonstrating the success and adaptability of the HVAC solutions implemented.

