Radiant Innovation: Enhancing Sustainability and Comfort at Arizona State University

Built for Creativity and Sustainability

At Arizona State University, sustainability is more than a goal—it's a guiding principle. The Rob and Melani Walton Center for Planetary Health, formerly known as ISTB7, exemplifies this commitment. Designed as a world-class research hub dedicated to addressing global environmental challenges, the 281,000-square-foot facility redefines high-performance design in the desert climate.

From the project's inception, ASU and the design team set ambitious targets: achieve at least LEED Gold certification, with the aspiration of LEED Platinum. Meeting such rigorous performance standards in a complex research facility required seamless collaboration, innovation, and the integration of cutting-edge systems. Among these, Zehnder's Alumline Radiant Ceiling Panels played a pivotal role in realizing the building's energy, comfort, and acoustic goals.

Project
- Rob and Melani Walton Center for Planetary Health (ISTB7)

Year Completed
- 2002

Property
- 281,000 square feet

Architect
- Architekton + Grimshaw Architects

Sustainability
- LEED Platinum

Radiant Panel System
- Zehnder Alumline Radiant Ceiling Panels

For more information on the project please scan the QR code.

Solution

The design team, led by Buro Happold and TDIndustries, selected Zehnder's Alumline panels for their superior ability to provide efficient, quiet, and consistent temperature control. Unlike traditional HVAC systems that rely on forced air, Zehnder's radiant cooling technology circulates chilled water through ceiling-mounted panels, absorbing heat from the occupied spaces and cooling them through radiation.
This method not only reduces energy consumption but also delivers an exceptionally comfortable indoor environment, free of drafts and mechanical noise—an essential feature in research settings where acoustics and thermal stability directly impact productivity.

By minimizing the need for extensive ductwork and reducing mechanical loads, Zehnder's radiant panels help the Walton Center lower operational costs and carbon emissions, supporting ASU's long-term sustainability mission. The system integrates seamlessly into both lab and office environments, providing individualized comfort control while maintaining architectural flexibility and aesthetic integrity.

The Walton Center's architecture, designed by Architekton in partnership with Grimshaw Architects, draws inspiration from the Sonoran Desert and the natural resilience of its ecosystems. The building's façade mimics the pleated surface of a saguaro cactus, which naturally shades itself from intense sunlight. This biomimetic approach is reinforced by passive cooling strategies—including deep exterior fins, a porous atrium that channels airflow, and the use of low-thermal-mass materials that minimize heat retention.

Within this climate-responsive framework, Zehnder's radiant ceiling panels complement the architecture perfectly.

The panels provide invisible thermal comfort while allowing the clean, expressive design of the interior spaces to shine. Coordination between Zehnder, Buro Happold, and TDIndustries ensured the system's integration aligned seamlessly with lighting, structure, and acoustical elements—an achievement that underscores the power of collaborative, performance-driven design.

In addition to its high-efficiency radiant system, the Walton Center incorporates several pioneering sustainability features that align with Zehnder's philosophy of total building performance. It is the first building in Arizona to use the BubbleDeck structural system, significantly reducing the embodied carbon of the concrete floor slabs. Supplementing this are fly-ash concrete admixtures, smart glazing systems, and building-integrated photovoltaics that enhance daylighting while generating renewable energy.

Zehnder's radiant technology supports these strategies by lowering the building's overall energy intensity, contributing directly to the project's LEED Platinum pursuit and carbon-reduction goals.

> *"By prioritizing collaboration, we were able to implement innovative solutions—from sustainability to schedule optimization—to bring this complex project to life."*

Carlos Diaz
Project Director
McCarthy Building Companies

The result is a building that functions as a living laboratory—demonstrating how integrated mechanical innovation can advance both human comfort and planetary health.

In a region where water is one of the most precious resources, the Walton Center takes conservation seriously. The facility captures condensate from mechanical systems and utilizes non-potable water from the Salt River Project canal for landscape irrigation. This strategy, combined with native desert plantings and evapotranspiration cooling, reduces reliance on municipal water while maintaining lush, inviting outdoor spaces.
These measures, together with Zehnder's energy-efficient radiant panels, create a holistic building ecosystem that operates in harmony with the desert environment.

"As a gateway to the Tempe campus and one of the highest-performing sustainable labs in Arizona, ISTB7 represents a legacy project for our team and partnership with ASU," said Carlos Diaz, Project Director with McCarthy Building Companies. "By prioritizing collaboration, we were able to implement innovative solutions—from sustainability to schedule optimization—to bring this complex project to life."

The Walton Center embodies what's possible when architecture, engineering, and technology unite under a shared vision. It stands not only as a physical gateway to the Tempe campus but also as a symbol of environmental leadership and technological advancement.

Results

- Certification Target: LEED Platinum
- Energy Efficiency: Reduced HVAC energy consumption through radiant cooling
- Acoustic Performance: Quiet, draft-free environment ideal for research and collaboration
- Carbon Reduction: First use of BubbleDeck inArizona + low-carbon materials
- Water Conservation: Condensate capture and non-potable irrigation system
- Architectural Harmony: Seamless integration of radiant panels within design aesthetic

Conclusion

At the Rob and Melani Walton Center for Planetary Health, Zehnder's radiant ceiling technology demonstrates how comfort, efficiency, and sustainability can coexist without compromise. By pairing high-performance engineering with climate-responsive architecture, the project showcases the transformative power of radiant systems in modern, environmentally conscious design. Through innovations like the Alumline radiant ceiling panels, Zehnder continues to help leading institutions like Arizona State University push the boundaries of sustainable building performance—creating spaces that support both human well-being and planetary health.

Please scan the QR code
below to learn more about
Zehnder Rittling

Zehnder Rittling
100 Rittling Boulevard · Buffalo, New York USA 14220
Tel. 716-827-6510 · Fax 716-827-6523 · sales@zehnder-rittling.com · www.zehnder-rittling.com