CASE STUDY: SCHOOLED IN SUSTAINABILITY

Groundbreaking Approach to Designing Schools

Smarter. Stronger. Steel.

Canyon View High School

Location: Waddell, Ariz.
Size: 231,000 sq. ft
Students: 1,800

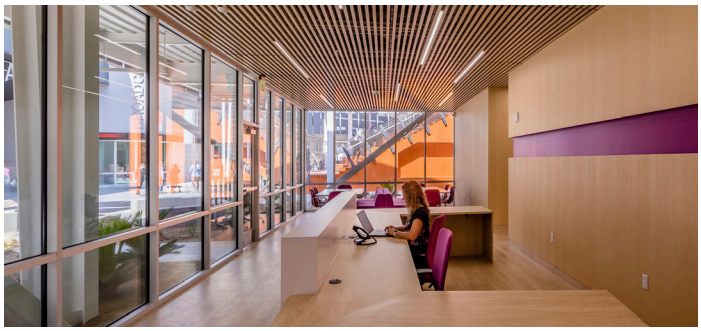
Energy efficiency was the central design premise for Canyon View High School in Waddell, Ariz. Innovative architectural practices, including an exposed steel frame, create a welcoming educational environment while also allowing natural light to penetrate deep into the building, minimizing the need for artificial light. The 231,000-sq.-ft campus not only emphasizes sustainable practices but also integrates innovative architectural strategies to enhance the learning environment. Exposed structural steel framing allows natural light to permeate deeply into the learning spaces, fostering a unique educational atmosphere that seamlessly merges indoor and outdoor space. Thanks to structural steel, solar panels on steel framing serve as canopies to reduce heat gain while generating 20% of the campus's energy usage.

Challenges and Design Shift

The design and construction of Canyon View High School emphasized the use of steel to meet energy efficiency and design flexibility goals. Grouping steel buildings together streamlined construction and reduced the schedule by nearly two months while providing both structural stability and aesthetic value. Steel was key to achieving the school's innovative design and sustainability objectives.

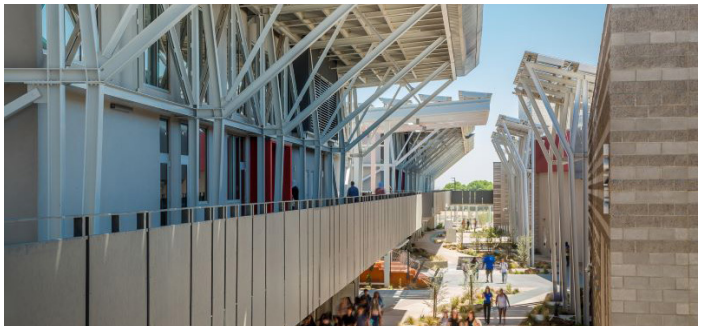
Benefits of Steel Construction

Design flexibility: Steel framing allowed for large, open spaces with minimal columns, enabling the creation of flexible learning environments and the innovative "Accelerator" space.



Energy efficiency: The exposed steel structures facilitated natural lighting and integrated solar components, contributing to the campus's energy efficiency and sustainability goals. Extensive shading cools the outdoor spaces.

Streamlined construction process: Grouping all the steel buildings together on the north side of the campus allowed the team to optimize labor and resources--cutting construction time by two months.



Solar shading: The steel-framed solar structures, with patterns inspired by the shape of human DNA, shade the central "Agora" while generating 20% of the campus's energy needs, merging functionality with educational design. The Agora is designed to maintain a peak temperature of 85 degrees in the desert heat.

Sustainability: American structural steel members contain at least 93% recycled content and are 100% recyclable, making it a material that is circular for generations.

Canyon View High School showcases the transformative potential of steel in designing schools of the future, combining energy efficiency, flexibility, and aesthetic appeal. Steel met the school's ambitious goals while creating an environment that enhances learning and inspires innovation. Careful design blends indoor and outdoor space and cuts down on the energy needed to study comfortably in the desert heat.

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