**Project Description:**

In this 462,000 sf engineering campus building, the client’s main objective was to address the college’s evolving curriculum needs, increasing outreach and recruitment, and the evolution of engineering education.

**Design Challenges:**
- Redesigning 300,000 sf of existing Engineering College building with a 130,000 sf expansion connected by a three story atrium
- Create transparent education facility with personality that encourages learning and collaboration.
- Keep brand/identity consistent with the rest of campus with meeting today’s technological teaching needs.
- Create a balance of connectivity and separation between focused work spaces, learning classrooms, and collaborative areas.
- Extensive planning to complete the project while a portion of the building was still occupied, with as little disruption to students and staff as possible.

**Design Solutions:**
- The conversion of exterior courtyards into interior “collaborative engineering workshops” brings natural light into the core of the building.
- Integrate Transparency & Visibility into the design to engage disciplines and programs and promote Collaborate and achieve “Engineering on Display”.
- Use Atriums as public spaces to connect learning zones, auditoriums, laboratories, faculty & staff areas, and building services.
- Provided Flexible spaces that can be utilized for multiple arrangements and purposes.

This state-of-the art building features:
- 41,202 sf of student collaboration space
- 134,969 sf of teaching and laboratory space
- 1,576 classroom seats
- 272 faculty and staff offices
- Three story atrium and dining areas
One design challenge was seamlessly connecting the new building addition to the existing structure, while keeping the character congruent with the brand/identity woven into the rest of the campus fabric.

In the new design, the exterior skin is composed of an architectural precast concrete façade which complements the historic architecture of the campus, and the building was detailed with the campus’ characteristic arches and Spanish-style clay tile roof. Defined and welcoming entryways are now established.
CONNECTIVITY

The same consideration was carried over to the interiors. The original interiors were dark and cavernous, they lacked personality, and wayfinding was challenging. Emphasis on improving these needs was key. The atrium connecting the new & existing structures not only allows daylight to filter into all three floors, but serves as a conditioned concourse from parking lots to quadrangle, with multiple breakout spaces for students and visitors, all while promoting “Engineering On Display”.

Floorplan Graphics by Signage Consultant illustrate Wayfinding Zoning and Room Number Sequencing.
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Engineering Education Trends considered in the design of the 462,000 sf three story building included:

• Pressure to increase enrollment at Tier 1 engineering colleges
• Demand for engineering specialties evolve in 5-7 year cycles
DAYLIGHTING

• An underutilized, open air courtyard was enclosed and repurposed into a dining area and collaborative breakout space.

• This was done by constructing and adding a ceiling that allows for proper drainage (bottom right), and features glass walls and transoms that effectively provide daylight for interior offices, labs, and classrooms facing.

• Natural Sunlight, wood paneling, and colorful furnishings add character and excitement to the large volume.
One of the main design themes was the focus on “Engineering on Display.” Glass partitions allow students and guests an inside view of the state of the art engineering labs.
Multiple open areas and break out spaces were designed to promote collaboration.

The oversized wood steps featured in the atrium add warmth against the terrazzo flooring and can be used for lectures and assemblies, or as study, meeting, & hangout spots for students.

Custom designed vinyl wallcoverings denote wayfinding zones and add visual interest to large volumes.

A variety of furnishings offer collaborative study spaces for students, faculty, and staff.
One of the client’s visions was to transform the building from a “black box” to a more transparent educational building.

The use of glass and other materials allows natural light to permeate throughout the once dark and closed off interior, and provides an open airy feel emphasized by the catwalks and visible staircases.

Window film was provided on lower portions of glass storefront to aid with visual privacy while still allowing natural light to filter in.
Flexibility was a key design feature in the renovation. Spaces can be rearranged to accommodate functions of all sizes.

In the atriums, students may have engineering projects on display, or other times, is used for assemblies, trade shows, and demonstrations.

The building also features flexible classroom arrangements for modern teaching pedagogies and is on trend with the “flipped classroom concept”.
LEARNING ENVIRONMENTS

State of the art classrooms, labs, and lecture spaces accommodate the spectrum of Engineering programs housed in this renovated building including: Petroleum, Mechanical, Industrial, Electrical, Civil, Environmental, Chemical, and Construction Management.
The client's goal was to create a next-generation environment to inspire learning and discovery.

Engineering Trends utilized include:
• Evolving teaching pedagogy – “Flipped Classroom Concept”
• Focusing on “hands-on” problem-solving laboratories in addition to traditional classroom settings.

Laboratories warranted SDT and epoxy floor finishes, while office, meeting and auditorium spaces feature modular carpet.

LED lighting is used throughout the new building design.
Fixed finish palette and furnishings evoke brand identity and a sense of school pride.

Each program’s departmental suite is zoned to their adjacent labs and classrooms.