

2013 Exhibition of School Planning and Architecture

San Jacinto College
Central Campus
Science Building

Indianapolis, Indiana

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Central Campus

Science Building



Exterior with Interior Education classes

- **Community Environment:** Through open community meetings explaining the factors for a building program, cost and growth needs of the College, and getting community feedback, to advertisements, a phone campaign, the 2008 Bond was successful and fully engaged the local community.
- The faculty's expertise was leveraged during programming and planning to ensure a successful educational facility that fully responded to the community's needs.
- The College has several well established partnerships with local business, education and industry. The new science building has been designed with several flexible spaces that can host a variety of functions to support these relationships.
- The new science building has been designed to support the College's mission of high-quality affordable education by providing a welcoming and open learning environment.



Community of Students in Class

- **Community Environment:** The College is located at the heart of a historically blue collar community. The local economy is dominated by the petroleum refining, petrochemical processing, and health care industries. The new science facility will prepare students to meet the workforce needs of the local economy.
- The new facility's physical attributes evoke a high-tech, first-class facility. The facility appearance is an indirect reflection on the local industrial complex with its tall metal skin and glass and projecting aluminum sun shading system.
- The facility will present the College to the community, as a leading educational institution striving for excellence particularly in the science sector, moving forward into the 21st century.
- 21st century students are technologically driven and the design response included integrated technology in the classroom and wireless access, video monitors throughout, exterior gathering/studying areas and many interior collaborative spaces designed to connect to the modern student.



Learning Environment Spaces

- **Learning Environment:** Multiple inviting spaces, both interior and exterior, that will support collaboration, and provide opportunities to engage in classroom prep or discuss the previous class with peers or educators and of course leave room for leisure activities.
- Teaching spaces support the auditory, the visual and the kinesthetic learner in both classroom and lab setting, through the use of state-of-the-art science equipment, integrated teacher and student controlled technology, tiered multi-function lecture rooms and traditional classrooms.
- The science building was designed to be an inviting “learn anytime, anywhere” environment that extends beyond the laboratories and classrooms. Numerous exhibits and collaborative areas, wireless access and video monitors have been dispersed throughout the building to enhance and encourage learning not only inside the classrooms, but outside as well.



Collaborative Environments

- **Learning Environment:** Incorporated into the building are two large Atriums or Malls. The largest Atrium is on a north-south axis, each end has a 3-story glass curtain wall with entry and the upper roof has clerestory windows. A second Atrium is at the main visitor entrance, giving visitors a soaring view. These dynamic spaces allow natural daylight to enter creating spaces ideally suited for gathering of students and staff or exhibiting projects. Along with the multiple collaborative spaces, put together, the open areas foster a learning environment that is exciting.
- Labs and classrooms are in close proximity helping to promote easier communication between staff and learners.
- The new integrated technology at all student stations and teaching labs, web-based learning, flexible classroom spaces and uniformity of lab sizes with organized and systematic delivery of laboratory piped services, will support future changes in educational delivery systems.



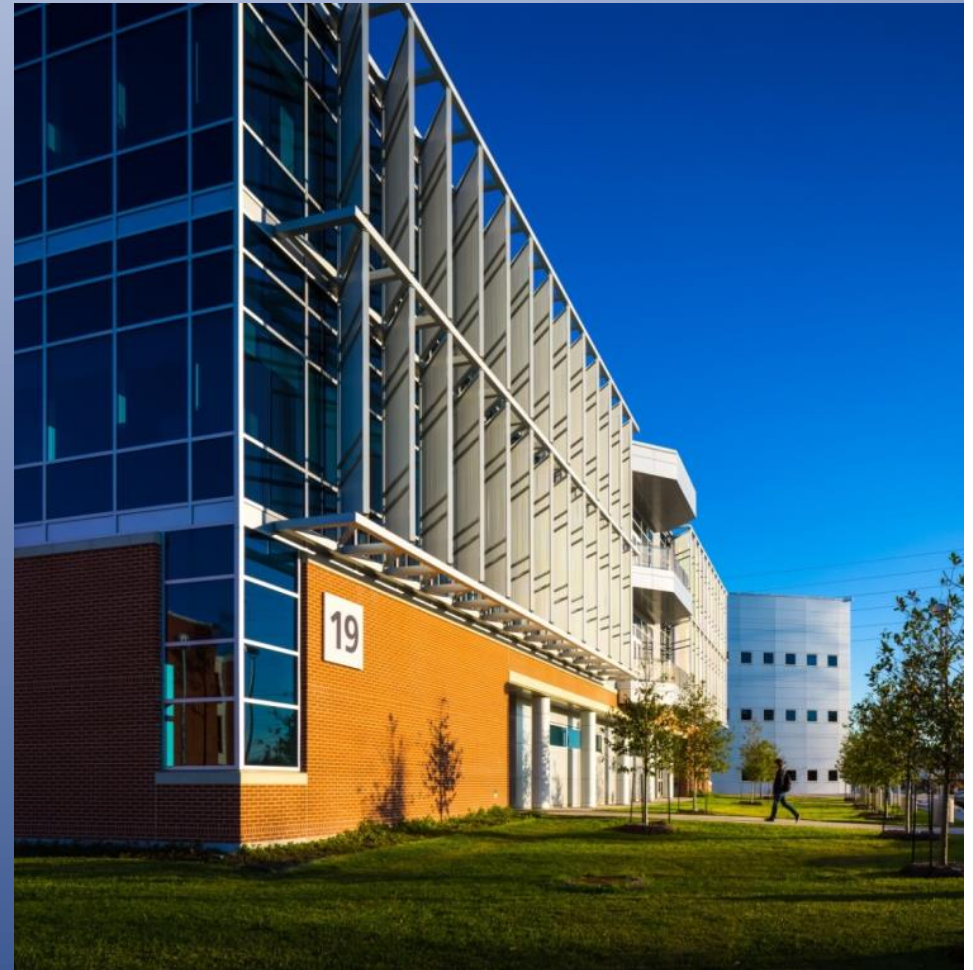
Design Elements

- **Physical Environment** - In the main Atrium, a wall is dedicated to a large (30' high x 54' wide) custom stylized "Periodic Table." Users and visitors alike can appreciate the relationship of building and the science curriculum. Incorporated into the confines of the Periodic Table, are windows into Labs, adding an air of transparency from Lab to Atrium and Atrium into Lab.
- The functional relationships of the space are organized to allow the best constructability and flow in an ordered manner. The tiered classrooms due to their size and height requirement are on the first floor in one wing. Opposite this wing and across the Atrium is a bank of traditional classrooms, thus giving the first floor the most student population at one time. This works better for fire egress, and gives the offices and labs which are on the upper floors, better acoustics. The Chemistry & Biology labs are situated on the third and highest floor to allow direct access to the roof due to their exhaust requirements.
- Niches, alcoves, open areas and the Atrium "bridges" were designed for collaboration and leisure and were furnished with seating and tables.



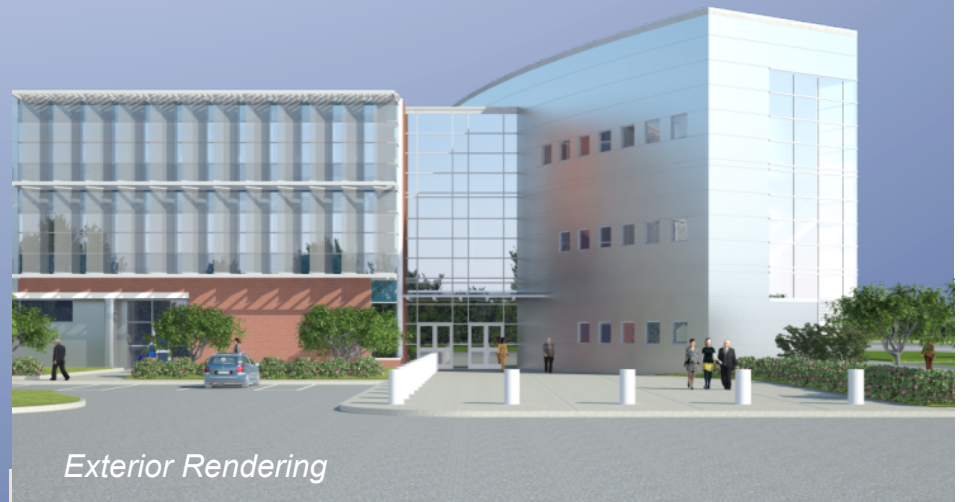
Sustainable by Design

- **Physical Environment:** A custom aluminum sun shading system was installed on the west side to screen the 2nd and 3rd floor curtain wall, day lit filled interior, indirect lighting with sensors, bamboo paneling and millwork were all physical systems that can be readily identified to impart a sense of sustainability
- Aluminum composite panels and high-performance glass curtain wall clad the majority of the exterior of the building envelope, but “red” brick masonry was also used to make a connection to the campus, whose buildings are clad in the “red” brick.
- Two landscaped pedestrian plazas were developed on the exterior. One on the west side main visitor entrance and one plaza facing the north to make a smooth aesthetic transition between the new science facility and the campus proper. With built-in planters to act as seating areas, the new north entry plaza makes a seamless introduction from the main campus to the new science facility.
- Internally, the facility is exciting with two, three story large Atriums filled with natural daylight. Bridges cross the Atriums to allow persons to travel from one wing to the opposite wing. Areas of collaboration are mixed in, giving the space an active feel.



3D Planning

- **Planning Process:** The Process started in planning for the 2008 Bond Campaign. The College, the College Foundation and the Architect developed a Master Plan of the Bond, and a Bond team was formed to get Community. The Bond received community support.
- The Design Team facilitated programming meetings which involved all the stakeholders, sometimes by department, and sometimes all together. “The Vision, the Goals, and the Needs” were established.
- The Process included “Stakeholders,” all of whom were involved from the start of Programming. The construction delivery method selected by the College was to use a Construction Manager At Risk (CMAR) and the CMAR entered into the process at the beginning of the Schematic Design phase. This group became the “Planning Team”.
- One of the more important goals was to provide informal collaborative spaces, normally these unassigned spaces are included within the “Circulation” percentage; however, it was agreed to assign square footage for entries, lobbies and collaborative areas in the Program to ensure that these spaces were accounted for as a goal to be met.

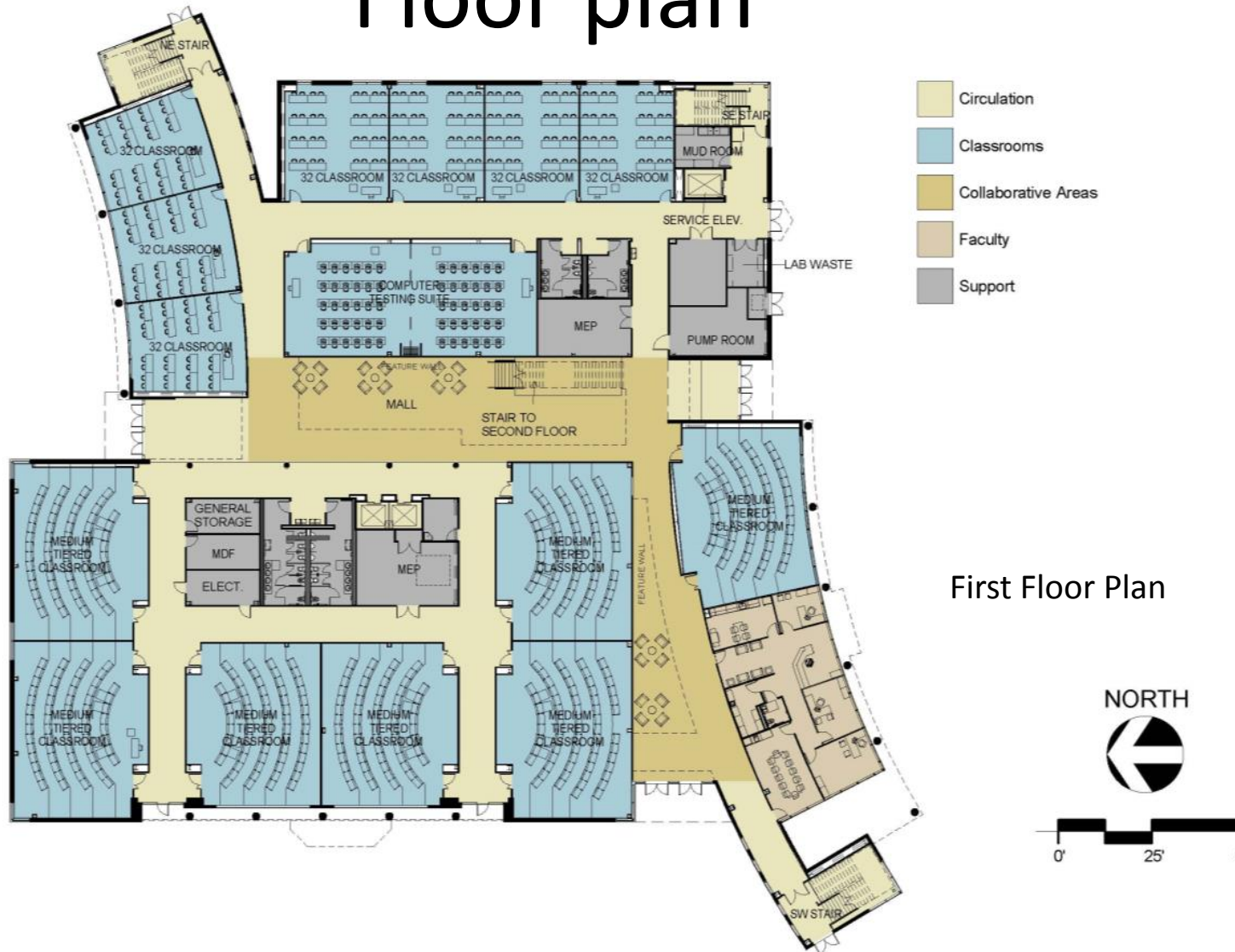


Comprehensive Science Building

- **Planning Process:** Prototypical rooms, labs and finishes were a goal for long term flexibility and cost effectiveness. These prototypical rooms were developed in Programming and used in Schematic Design in the Conceptual Plans. Exterior Renderings, materials and finishes were developed and presented during Schematic Design. All items were reviewed with all the stakeholders.
- During Design Development, the method used was to conduct several departmental meetings to study the “room-by-room” requirements of each department. All facets of the rooms were looked at including specialized equipment, electrical, integrated technology, lighting, A/V needs, and locations of all.
- Once the Construction Document phase began, at plan review stages, the stakeholders assembled to review and comment. The learning environment benefited from this detailed planning process, the Vision of a new “high-tech” showplace facility with user collaboration spaces, state-of-the-art equipment and technology, sustainable programs and systems all became realized through the sustained participation of the Planning Team.



Floor plan



Floor plan



Floor plan



Exhibition of School Planning and Architecture

Project Data

Submitting Firm :	BAY-IBI Group Architects
Project Role	Architecture Firm
Project Contact	Calvin Powitzky, Jr.
Title	Associate Director
Address	18201 Gulf Freeway
City, State	Webster, Texas
Phone	281-286-6605

Construction Firm:	Spaw Glass
Project Role	Construction Manager At Risk
Project Contact	Garett Wheaton
Title	Project Manager
Address	13800 West Road
City, State	Houston, Texas
Phone	281-970-5300 (Main) 281-924-8657 (m)

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Project Details

Project Name	A New Science Building
City	Pasadena
State	Texas
District Name	San Jacinto College
Occupancy Date	September 1, 2013
Grades Housed	13-14
Site Size (acres)	3.25 Acres
Gross Area (sq. ft.)	108,320
Per Occupant(pupil)	75.22 sq.ft./pupil
Gross/Net	$108,320/76,619 = 1.41$ (Circulation only was deducted from gross area to get net square footage)
Design and Build?	No - Construction Manager at Risk (CMAR)
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	\$ 3,282,000
Building Construction:	\$24,176,000 (estimated after closeout)
Fixed Equipment:	n/a
Other:	Demolition of Maintenance Bldgs and new parking lot will not start until summer of 2013
Total:	\$27,458,000 (estimated - not closed out yet)

Supporting/Supplemental Files/Images



- The facility gives a dynamic “high tech” and “sustainable” look.
- A daylight filled atrium is the pedestrian hub separating two three story wings with bridges crossing and seating for informal gathering.
- A stylized “Periodic Table” fills the east wall of the Atrium indicating “Science” is spoken here.
- A plaza on the north side ties the facility into the campus. Controlled access provides security.





Display Cases



Interior Atrium with Collaboration Spaces



- The LEED Silver design has a compact plan, multi-use spaces and prototype labs giving size and cost efficiency.
- Life cycle costs were reduced with sustainable materials and systems including capturing rainwater and condensate for irrigation, high-performance glazing, sun shading system shields west side curtain wall from heat gain, cool roofs, an Energy-Recovery lab exhaust system, an HVAC demand control system regulates air in labs, VAV interlocked with occupancy sensors controls temperature.