coalescing ecology

Project: College of Architecture and Landscape Architecture
University of Arizona

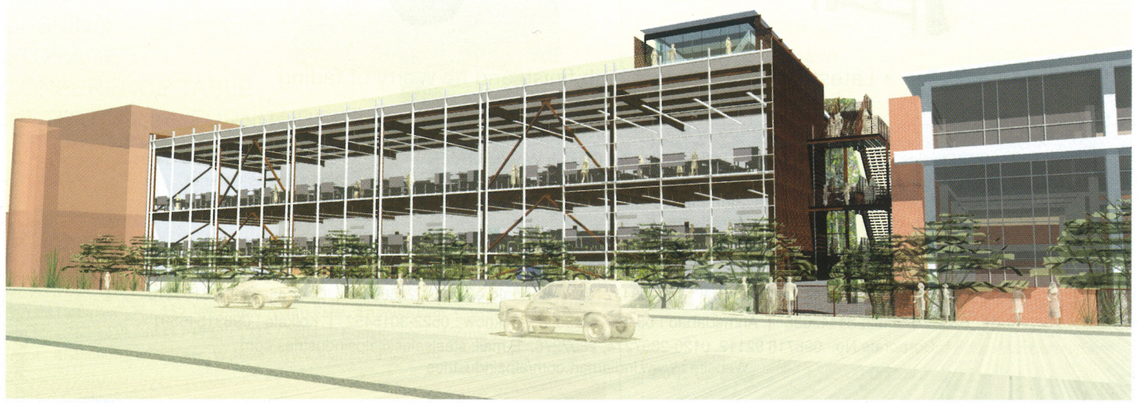
Architects
Jones Studio, Inc
Arizona

The College of Architecture + Landscape Architecture (CALA) fashioned their education program from a respect for the characteristics of place and involvement with the communities of which they are a part. The expansion of the school is meant to contribute to a more collaborative environment between disciplines. This spirit of collaboration extends from the study of architecture to landscape architecture in addition to the study and testing in engineering, hydrology, geology and social programs.

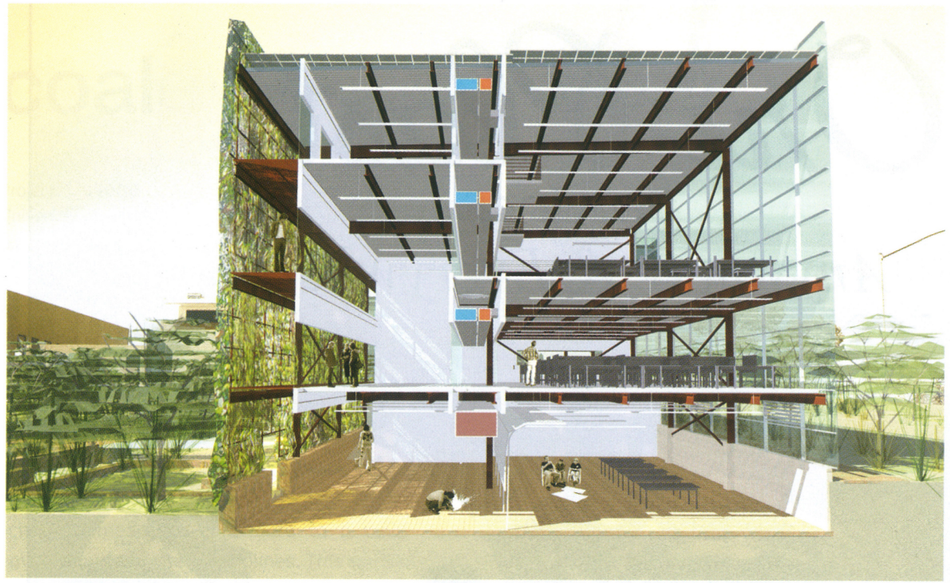
The greater Sonoran Desert surrounds the city of Tucson, but from within, landscape may only be perceived as pockets sitting atop the built environment. By excavation on the site, connections can be made between the immediate vegetation and rock garden at hand and the mountain ranges viewed in the distance.

With transparency, further parallels can be made between the building's structure and its bedrock, mechanical systems and site breezes, rainwater collection, interior plumbing and site drainage. This building is to conceptually and literally re-connect the college to its greater community through the air, land and sunlight.

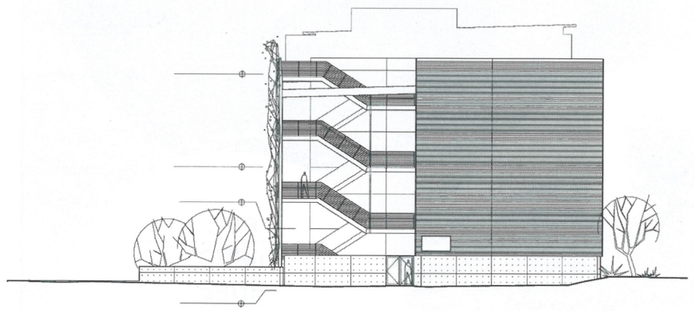
Light filtering in through the laboratory.



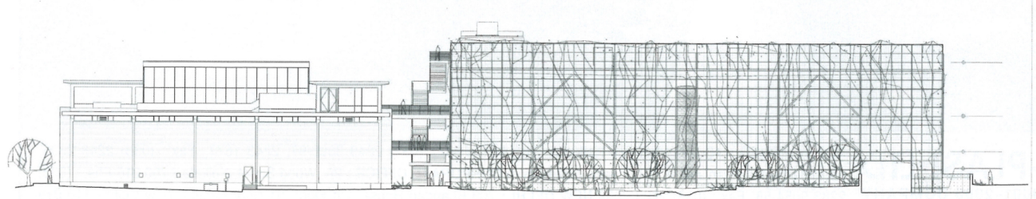
A rendered image.



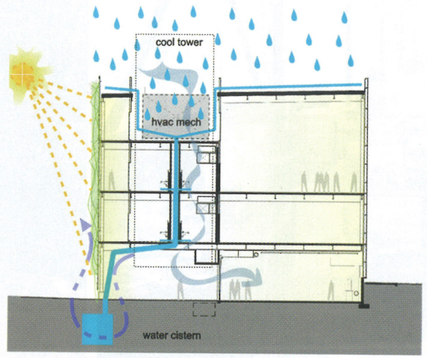
SECTIONAL VIEW



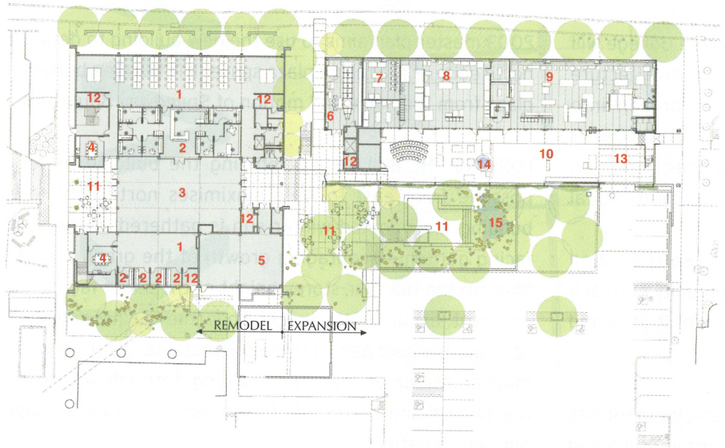
EAST ELEVATION



SOUTH ELEVATION



WATER RECYCLING



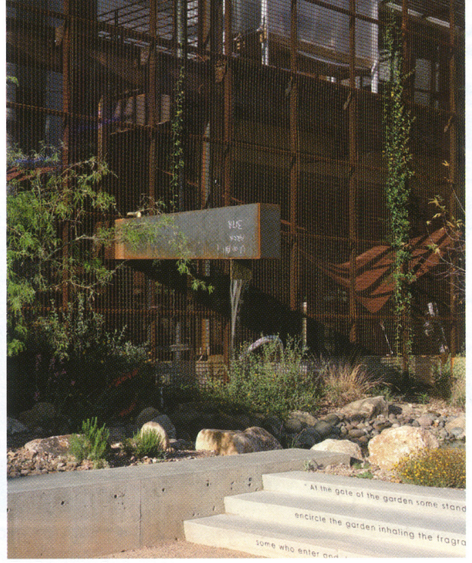
1. STUDIO
2. OFFICE
3. GALLERY/JURY
4. CONFERENCE
5. LECTURE HALL
6. TESTING LAB
7. DIGITAL FABRICATION
8. METAL SHOP
9. WOOD SHOP
10. EXTERIOR LABS
11. GARDEN PATIO
12. STORAGE
13. LOADING
14. WATER TANK
15. WETLAND DEMONSTRATION

GROUND FLOOR PLAN N

1. STUDIO
2. OFFICE
3. GALLERY/JURY
4. CONFERENCE
5. COMPUTER LAB
6. TESTING LAB
7. STORAGE
8. BALCONY
9. WATER TANK
10. OPEN BELOW

SECOND FLOOR PLAN

Ample of space and ventilation supports the studio.



The Descriptive Garden.

BUILDING PROGRAM: The Landscape Architecture College will move its studios and faculty offices to join the Architecture College at the existing site. The project is broken into two parts: Phase one expansion includes the 33,000sq ft build out of new studios, faculty offices and an indoor-outdoor metal, wood, concrete, glass and digital fabrication lab.

Phase two includes remodel of the 33,900sq ft existing facility to include the administration and community outreach departments, gallery, lecture hall, computer lab, studios and faculty offices.

SITE PLANNING: Tucson's urban/suburban development sits atop a valley floor surrounded by four mountain ranges in southern Arizona about 60 miles from the Mexican border.

The 150-year-old university campus is made up of mostly mid-rise buildings and a network of pedestrian paths and courtyards of usable outdoor space. Because of the scale of the existing buildings and the amount of open space between them, the natural landmark mountain ranges surrounding Tucson can be seen from the upper floor of the existing architecture building.

The 2003 comprehensive campus master plan dictates the college expand from the existing building eastward into an existing parking lot. The site is bound by Speedway Boulevard (a main arterial city street) to the north, the existing Engineering College to the east, and a future Art & Engineering Plaza and Fine Arts Library to the south. The 2003 master plan aims to use the new building to define the north edge of the future plaza space. The building buffers the plaza from the noise and motion of Speedway Boulevard.

FORMING THE BUILDING: Stretching the building as far as possible from east to west maximises north light to the building. Low angled winter sun is gathered at the south-facing garden, encouraging growth of the green screen of vines to the full four-storey height of the south façade. East and west facades of the building become opaque in response to unwanted heat gain at these orientations. Centrally located mechanical units feed the building through an exposed mechanical shaft. This lets the students to trace its supply and return paths.

SUSTAINABILITY

WATER HARVESTING: It is accomplished on four levels. Roof water runoff; Mechanical unit condensate collection; Gray water harvesting; and Capture and re-use of campus well water blow off.

The water collected on site feeds the landscaping and native riparian pond garden. The water collected is estimated to off set potable water use for landscaping by 75%. The building's structure responds to the simple diagram of open studio spaces at the north edge paralleled by south facing office and classroom bays. Each level of the building starting from the ground up offers a different connection from

interior to exterior environments: sunken outdoor classroom – under the tree canopy and surrounded by riparian garden; ground level labs - pedestrian walkway along speedway boulevard; second floor offices and studio – treetops and neighbouring university buildings; third floor offices and studio - mountain views; 'Archon' (Greek for leader/builder) seminar room - distant regional views.

The variation from an intimate knowledge of what's beneath your feet as you occupy the sunken outdoor classroom to the distant view of the surrounding desert from the Archon Seminar room broadens the students' understanding of scale in design – from the small scale, such as design of furniture, to the large, such as urban planning. Each increment and aspect of design is none less important than the other. All function together in harmony to create a community.

Water harvesting is achieved in a number of ways, with the greatest quantity being collected from the roof and mechanical units in a 12,000 gallon storage tank. This tank connects directly into the site irrigation system. This symbiotic relationship between building and landscape will be complete when the south garden grows in and up the south screen wall, providing additional shade from the harsh southern sun.

The source of circulation.

NATURALLY DAY-LIT SPACES: Every occupiable space in the expansion is naturally day-lit.

NATURAL VENTILATION: Office common areas, student jury/ break out rooms and the Archon seminar rooms have giant sliding glass doors that connect with the exterior balconies. Also, the ground floor lab space has (10) 10'x12' overhead garage style doors that connect the 7,000sq ft interior shop with the covered 5,000sq ft exterior shop.

HVAC: Highly efficient roof top air handlers provide cooling and heating from the university's central plant. The ground floor shop is cooled by an evaporative system only.

LIGHTING: All spaces are illuminated with highly efficient fluorescent lighting for the hours of the day when natural light is insufficient.

EXTERIOR SPACES: Throughout the building and site, exterior spaces are provided to take advantage of the beautiful, temperate weather during most of the school year. All vertical circulation except for the elevator is exterior. Stair landings are oversized for social opportunities. Wide exterior balconies that are fully shaded extend off the office suites and break out rooms. The entire roof is structured to be used as an experimentation lab – solar, wind and roof garden experiments will be conducted. The ground level is outfitted with a large covered outdoor shop (mentioned above), a sunken garden classroom/ gathering space and a large tree shaded patio with outdoor tables and chairs.

LIMITED MATERIAL AND FINISH PALETTE: An exposed steel structure and metal deck system provides an educational perspective on construction, detailing the beauty of natural finishes and the minimising of resource usage. The exterior will require very little maintenance in the future – most finishes are left to weather naturally over time. The small

The building at a glance.

amount of floor finishes - carpet tile, used are manufactured by Interface, a leader in sustainability.

GLAZING: The entire north curtain wall gets to see only a small amount of direct sunlight and uses low e-glass to limit heat gain. All of the southern glazed openings have some level of shade protection. Most of the glass is provided with an 8'-0" deep trellis overhang. As the green wall vegetation matures and grows up the south screen wall, a natural sunscreen is employed- one that allows dappled sunlight to bounce off green leaves.

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Student presentations.

Client	*U. of A. / building committee*
Design team	*Brian Farling, Eddie Jones, Maria Salenger (Jones Studio, Inc.) Chuck Albanese, May Carr, Dick Eribes, Brooks Jeffrey, Debra Johnson, Alvaro Malo, A. Richard Williams (University of Arizona)*
Building contractor	*Lloyd Construction Company*
Planning	*Jones Studio Inc.*
Project manager	*Jones Studio Inc.*
Structural consultant	*Rudow + Berry Inc.*
Site area	*60,000 sq ft*
Floor area	*Expansion: 33,645 gross sq ft (GSF)* *Remodel: 33,190 GSF*
Completion	*January 2007*
Building costs	*$8.95 million*