STATEMENT OF QUALIFICATIONS FOR DESIGN PROFESSIONAL SERVICES FOR:

The University of Arizona

Engineering Innovation Building

12:00PM MARCH 9 / 2012

BILL VOS, SENIOR ARCHITECT
DEPARTMENT OF PLANNING, DESIGN AND CONSTRUCTION
THE UNIVERSITY OF ARIZONA
220 WEST SIXTH STREET, THIRD FLOOR
TUCSON, ARIZONA 85701

UA PROJECT NO. 05-8623

Substance Design

HMC

HMC Substance Design

March 9, 2012

Attention: Bill Vos, Senior Architect
Department of Planning, Design, and Construction
The University of Arizona
220 West Sixth Street, Third Floor
Tucson, AZ 85701

Re: Statement of Qualifications for Design Services for the Engineering Innovation Building

Dear Mr. Vos and Members of the Selection Committee:

Innovation in engineering today is focused on the impact and incubation of exponentially growing technologies in six key areas: medicine and neuroscience; networks and computing systems; artificial intelligence and robotics; biotechnology and bioinformatics; nanotechnology; and energy and environmental systems. Research in Energy and Environmental Systems is targeting breakthroughs in **renewable energy production** including: solar, wind, ocean, geothermal, biological, and nuclear transmission and storage including: grid 2.0 and transmission systems and fuel cells. Breakthroughs are occurring with efficient transportation systems and energy conservation. Researchers are also exploring the Earth as an environmental system, using sensors and monitoring to understand climate models; global carbon and nitrogen cycles; regional and global risks – prevention and mitigation strategies. National researchers are exploring the environment and Grand Challenges, including food and water security, waste management and recycling, and environmental contamination and clean-up. **With this new facility, the College of Engineering at the University of Arizona is poised to stimulate groundbreaking, disruptive thinking and solutions aimed at solving some of the planet's most pressing challenges.**

The new Engineering Innovation Building presents a unique opportunity to shape the student experience and promote a dynamic environment for RESEARCH + LEARNING. The University of Arizona has already exhibited unparalleled forward thinking with regard to your exploration and creation of AzRISE, the Arizona Research Institute for Solar Energy, 'a global institute built on multidisciplinary partnerships that span academia and industry, with the goal of driving innovative solar energy solutions, grounded in sound research, economic, and public policy, that work to transform the lives of individuals and communities.' It is with great enthusiasm that we, HMC+Substance Design submit our qualifications to continue that spirit of innovation! The Engineering Innovation Building has specialty spaces that must be designed to support the activities not only of today's technologies in instructional computing, research, labs, and business, but also be flexible to allow for future practices in these fields. Your programs' close connections with local and state agencies and specialty personnel, requires supporting infrastructure that can enhance these activities.

HMC+Substance Design provides a full range of architectural and planning services for educational facilities, with an emphasis on universities. The team that we have formed for this project readily embraces the challenges and opportunities of creating **an inspiring place that demonstrates innovation in engineering.**

We understand the unique nuances of a project of this caliber from rebranding to fundraising; we have the ability to draw upon vast resources and previous experience to deliver the best project for the UA community. HMC+Substance Design has built the highest quality team of experts that will bring added knowledge and value to the Engineering Innovation Building.

- Our project team will be led by Erik Hanson as the Principal in Charge. Erik is joined by Jose Pombo as the day-to-day Project Manager and single point of contact for the University; Donna Barry as the Design Principal/Process Facilitator, David De Valeria as the Project

Architect, James Woolum Interior Architect, and Kate Diamond as the High Performance Design specialist. All six team members share a commitment to active listening, collaboration, and forward thinking as the foundation to achieving award-winning designs.

- Our team brings the added value and expertise of James Carpenter Design Associates (JCDA), an internationally acclaimed glass artist that maintains a research and development relationship with Corning Inc. on novel materials chemistry, advanced ceramics, and composites. JCDA synthesizes the creative process and the scientific method. His collaborative work straddles the fields of art, architecture, and engineering. We are proud to have JCDA as an exclusive member of our team.

- Programming and Lab Planning expert, Dan Dozer with Jacobs Consultancy Inc. (JCI) will serve as a valuable resource to both our HMC team and to the experienced UA leadership team. Through innovation in programming, totally modular facilities planning, detailed layout execution, equipment expertise, and quality control, JCI refines and defines the leading edge of laboratory facilities. Our team has extensive design experience and includes many facilities with programs focusing on **vibration** and **environment control, temperature and humidity control, optical sensitivity,** and **sound sensitive equipment**.

- Our commitment to the local workforce includes the expertise of the local consulting engineers; Holben Martin White structural engineers; AEI, mechanical, electrical, and plumbing engineers; Wood Patel, Civil Engineers; and Wheat Scharf, landscape architects. Our team also includes Fire Protection and Life Safety expertise of Rolf Jensen, Audio Visual and Acoustics by Convergent Technologies; and our cost estimators, Rider Levett Bucknall. All of our team members bring recent local expertise and a commitment to outside the box thinking. They are committed to creating 21st century research environments by incorporating the latest technological advancements in the construction industry.

We share a deep respect for the desert environment with The University of Arizona. The power of the sun and the preciousness of water are factors of the desert southwest that are always integrated in our local work. The history of the region and traditions of the campus environment and experience, combined with our inventiveness will truly lead to an exciting and iconic expansion to the College of Engineering. Our studio is a collaborative environment encouraging an exchange of ideas between architects, materials and structural engineers, environmental engineers and fabricators.

We are confident that our qualifications will demonstrate that the HMC team understands how to collaborate with UA and the College of Engineering to effectively deliver an inclusive, successful, comprehensive, and transformative process and solution for this key component of the University of Arizona campus. We look forward to the opportunity to formally introduce our team and to discuss, explore, examine, discover, and imagine your project in greater detail.

▲ Scan here to view a digital interactive version of this SOQ or insert the following link into your in your web browser:

http://blog.hmcarchitects.com/the-university-of-arizona-engineering-innovation-building/

Sincerely,

Donna Barry
Design Principal
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C: 602-350-8693
donna.barry@hmcarchitects.com

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Qualcomm TricorderXprize is a $10M global competition to stimulate innovation and integration of precision diagnostic technologies, making reliable health diagnoses available directly to 'health consumers' in their homes. As envisioned for this competition, the device will be a tool capable of capturing key health metrics and diagnosing a set of 15 diseases. Metrics for health could include such elements as blood pressure, respiratory rate, and temperature. Ultimately, this tool will collect large volumes of data from ongoing measurement of health states through a combination of wireless sensors, imaging technologies, and portable, non-invasive laboratory replacements.

Innovations yet to be discovered…

Section 1
Team Experience

Understanding that intellectual capital is the wellspring of a great university, and the source of its potential to transform our world, is particularly important for those that engage in the development of a new Engineering Research Building focused on Innovation. Intellectual capital is also the source of an institution's prosperity. Those who conduct ground-breaking research have the capacity to generate significant revenues for the university and the community. Attracting and retaining the best and the brightest, is a primary goal of institutions competing to perform high quality research. We are proud to come together as an integrated design team to present our qualifications to assist in the creation of a facility that will provide state-of-the-art research and development laboratories that provide opportunities for students; to create, incubate, and commercialize new business in energy research and application.

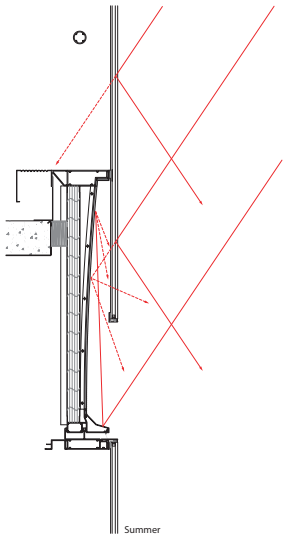
Our team employs an open and rigorous process that is a critical exploration of ideas about the boundaries of form, space, place, environment, object, artifact, image, function, and experience. It is a process that distinguishes and defines the difference between 'building' and 'architecture'. The explorative rigor, the ability to take risks, to look beyond the obvious, and passion is what differentiates good architecture from GREAT architecture. **Our team consistently achieves bold, inspired programmatic foundations for design by creating an environment for the creative process that is safe for the free exchange of passionate ideas.**

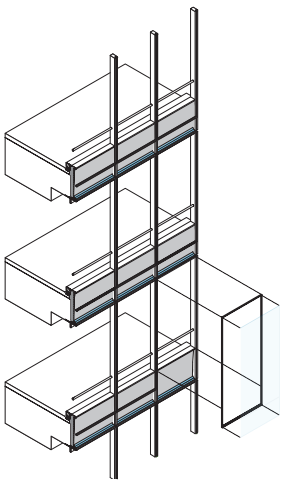
Our approach to the Engineering Innovation Building, focused on research by the School of Sustainable Engineered Systems and Biomedical Engineering, includes the marriage of art, engineering, and architecture. Synthesizing the phenomena of light into the experience of architecture, our team has developed a wide range of strategies necessary in creating environmentally intelligent buildings. To address the project requirement to focus the visual appeal of the building on technology and the strengths of your programs, we have included James Carpenter Design Associates (JCDA) as an exclusive collaborative member of our team. JCDA works with Corning Glass Works on the development of new glass materials including photo responsive glasses and various glass ceramics. These research projects are aimed at potential architectural applications which would utilize the unique technical capabilities of these glasses to control and manipulate light and information. This emphasis on theoretical, aesthetic and industrial materials research, together with James Carpenter's ongoing practice in sculpture, architecture and structural glass design, continues to inform and guide the work of JCDA. Incorporating the work of the Arizona Materials Laboratory and the work of JCDA along with the expertise of HMC+Substance Design will provide a unique baseline for the creation of a research complex that embodies the culture and customs of the College of Engineering and the innovative research they explore.

In addition, our higher education work in medical research hospitals, science buildings, earth sciences laboratories, nursing schools, and biotechnology laboratories, highlighted in this section demonstrates our ability to deliver complex projects on time and on budget.

The following pages demonstrate our creativity and our ability to detail and deliver projects that enhance the quality of life of those that inhabit them. These are complex building types requiring a high level of understanding. Our work demonstrates many creative solutions to similar issues that will need to be studied and addressed in the new Engineering Innovation Building.

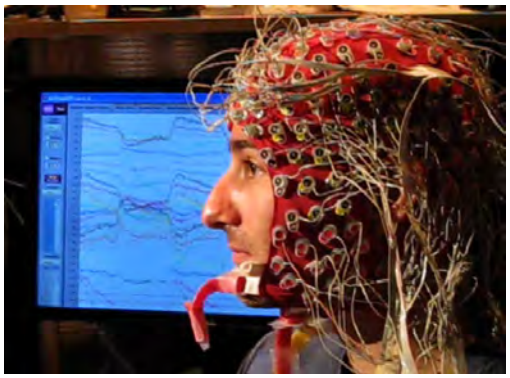
We encourage you to call our references because the process of architecture and its construction is not a secret... it is an experience that we are determined to share.

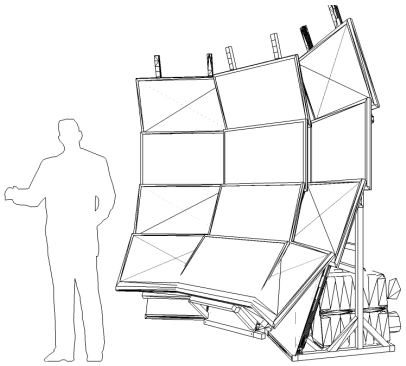


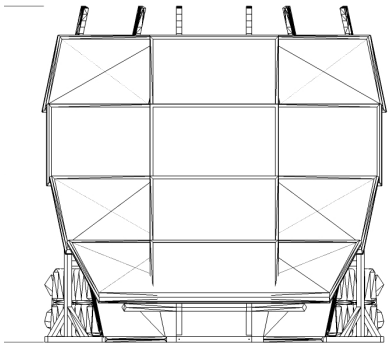


▲ *World Trade Center glass diagrams by James Carpenter Design*


COVER
move world
move world trans
move world rot
scale world
view all
reset view
stop headtracking
navigation...
scale plus
scale minus
view options...
misc...
quit
Sound Markers Beta
Sound Markers
Floorplan Viewer
PanoView360
PDB Viewer
VRML



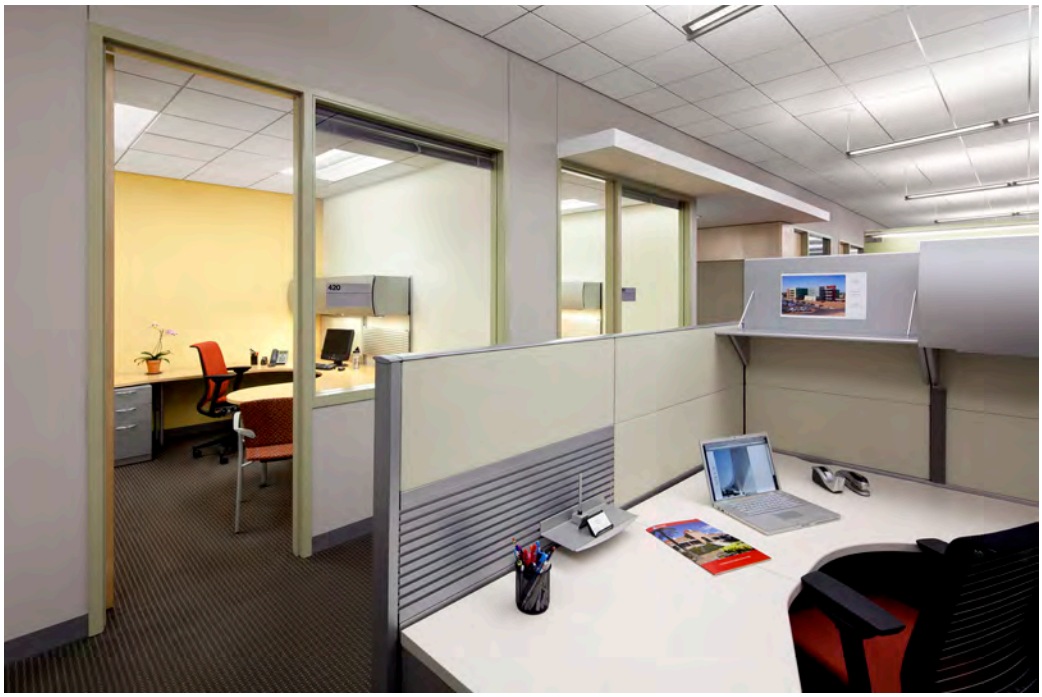




StarCAVE, San Diego, CA

CALIT2, UNIVERSITY OF CALIFORNIA, SAN DIEGO

HMC+Substance Design is also invested in research and development. For the past two years, HMC has supported the California Institute for Telecommunications and Information Technology (Calit2) through monetary and professional service donations. Calit2 at UC San Diego is the home of the StarCAVE virtual reality (VR) environment, a 360-degree, 16-panel, 3D immersive environment that enables researchers to interact with virtual architectural renderings in three dimensions, in real time and at actual scale. "We consider the StarCAVE to be a boundary technology that can inform us about how specific features of a building's design affect human responses, and also yield new insights on how the brain works," said Calit2's Eduardo Macagno, founding dean of the UC San Diego Division of Biological Sciences and president of the Academy of Neurosciences for Architecture (ANFA). We are looking to develop a system that will give us information to validate the positive effects buildings can have on users of all types — from patients, doctors, and visitors in healthcare settings to students, teachers, researchers, and the general public in learning and research environments.



Thomas W. Keating Bioresearch and Medical Research Buildings, Tucson, AZ

UNIVERSITY OF ARIZONA, TUCSON

James Woolum as Interiors Design Lead with Zimmer Gunsul Frasca Architects, contributed to the design of the Thomas W. Keating Bioresearch Building and Medical Research Building. These research buildings support faculty and students from various disciplines, other institutions, and industry partners to more easily translate research findings into real world solutions. The building houses four levels of interdisciplinary laboratories, faculty offices, graduate student workstations, and conference spaces arranged into research "neighborhoods." To break from the traditional lab design, offices and meeting areas are located near the laboratories, not inside. The scattering of conference rooms and gathering spaces encourages social interaction.

The Bio 5 Institute's Thomas W. Keating Bioresearch building and the College of Medicine's Medical Research Building are intended to promote interaction among faculty and students from multiple disciplines, other institutions, and industry partners. The buildings are physically linked to foster interaction and minimize redundancy by allowing researchers to share core service facilities, research equipment, and meeting rooms.

"Our goal was to have space for about 750 researchers collaborating with engineers, mathematicians, physicists, and chemists who are interested in partnering with the biologists to solve complex biological problems," says Vicki Chandler, director of the University's BIO5 Institute. "We wanted to create a hub to catalyze interdisciplinary molecular life sciences and to bring together scientists from multiple colleges and departments." - Tradeline Jan 2007

The extensive interior design and furniture specification process included large user group meetings in Los Angeles and Tucson facilitated by lead interior designer James Woolum whose involvement extended throughout construction and interior fit out. James will provide this expertise for your project.

Size / 309,000 SF combined
Original Cost / N/A
Final Cost / $115.5 M
Scheduled Completion Date / 03/2007
Final Completion Date / 03/2007
Team Member Involvement
James Woolum with ZGF Architects
Delivery Method / CM@R
References /
Facilities Representative:
May Carr
Sr. Architect
Planning, Design & Construction
University of Arizona
520.626.7410
carrm@email.arizona.edu

Chemical Sciences Building, Tucson, AZ

UNIVERSITY OF ARIZONA, TUCSON

James Woolum as Interiors Design Lead with Zimmer Gunsul Frasca Architects, contributed to the design of the Chemical Sciences Building. The multi-story facility consolidated the Chemical Instruction and Research Programs into one central location and is located adjacent to the existing Chemistry Building providing needed laboratory and office space.

The two distinct spaces of laboratories and offices provide the organization of the building. Offices are located along the glass curtain wall of the northern façade, providing ample soft natural light in this desert environment. Hallways serve as spaces for interaction and their angular dimensions give it an appearance of greater length.

Social spaces within the grossing factor gives students the ability to take a break and work out a problem by 'writing' on the walls. Between classes future scientists can work out a problem and diagram solutions. Corridors are not just for circulation they are where collisions occur between faculty students and researchers. They don't have to be connectors they can be a place to meet and circulate. James developed these interior solutions prior to joining HMC but brings this expertise and valuable lessons learned on finishes that work and don't work in these highly trafficked areas. These types of spaces will be invaluable to the new Engineering Innovation Building. James will help define new types of spaces for interaction and innovation for your project.

Size / 46,800 NSF / 85,661 GSF
Original Cost / $46 M
Final Cost / $46 M
Scheduled Completion Date / 06/2006
Final Completion Date / 06/2006
Team Member Involvement / James Woolum with ZGF Architects
Delivery Method / CM@R
References /
Facilities Representative:
May Carr
Sr. Architect
Planning, Design & Construction
University of Arizona
520.626.7410
carrm@email.arizona.edu

Stevie Eller Dance Theatre, Tucson, AZ

UNIVERSITY OF ARIZONA

As Design Principal and Senior Project Manager with Gould Evans, Donna Barry along with Jose Pombo led the design of the new 30,000-SF, 300-seat theatre which provides support space and additional studio space for academic programs within the School of Dance and has garnered international acclaim through a myriad of publications. Why is this project significant and relevant to the new Engineering Innovation Building? The building itself is credited for doubling enrollment in the program and increasing the caliber of students and faculty to the University of Arizona Dance program. The Stevie Eller Dance Theatre had significant challenges with regard to program needs and desires and budget constraints. As the College of Engineering strives to attract the best and brightest, the facility will require great environments beyond the quantification of space. This facility went beyond the program to create an experience for the owner and user group and patrons.

The theatre embraces the project's dual programs - performance [exhibition] and atelier [studio]. The dressing rooms serve their purpose during 'performance' mode with a roll down gym divider separating men's from women's. Transforming into studio mode, the gym divider disappears into the ceiling and the space becomes a pilates studio. The green room during 'performance mode' transforms into a faculty conference room during 'studio mode'.

The significant and bold solution to elevate the dance studio to the second floor not only provides an inspiring view for choreography in the studio but also creates a billboard for the dance department from the campus mall during the day and at night. It also creates an exterior covered extension to the lobby that is a public shaded space for all students of the University.

The Stevie Eller Dance Theatre demonstrates our teams ability to increasing the effectiveness and branding of the College's program and mission. We will do the same for the College of Engineering and seek ways to interface your experimental teams with your modeling and simulation teams and discover ways that this can be articulated in the experience of the new Engineering Innovation Building

Size / 22,000 NSF / 32,000 GSF
Original Cost / $7,250,000
Final Cost / $7,252,349
Scheduled Completion Date / 07/2003
Final Completion Date / 07/2003
Team Member Involvement / Donna Barry and Jose Pombo with Gould Evans
Delivery Method / Design-Bid-Build
References /

Owner Representative:
Pete Dourlein,
Facilities Director
University of Arizona
520.621.5684
dourlein@u.arizona.edu

User Group:
Jory Hancock
Director of Dance
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520.626.8030
jory@email.arizona.edu

Construction Subcontractor:
Jeff Thompson
Steel Con
520.741.8000

James E Rogers College of Law Library, Tucson, AZ

UNIVERSITY OF ARIZONA

Donna Barry, as Design Principal and Architect of Record with Gould Evans, led the design team on the renovation of the existing law library at the James E Rogers College of Law. The design goals of the project were to embrace the original 1970s architecture of the existing building while incorporating elements of transparency and fluidity to create a new language celebrating the vitality of a place that educates tomorrow's leaders. To amplify its most successful features and to fulfill its unrealized potential, the Law campus is turned inside out by extending the learning spaces to a courtyard garden space. The guiding principle is to facilitate learning through the further development of an intellectual community with resources and design that enhance communication and collaboration. **There will be a great opportunity to link the outdoor spaces between the AME building and the College of Law to extend to the new Engineering Innovation Building**

Creating 'sticky space' where students want to hang out and learn within the library, once a dark and unfriendly space, the library is transformed into a voluminous space filled with natural light. Precast panels are removed and replaced with high performance glass and shaded with louvers that are reinterpreted forms of the original precast panels. The precast panels are reused as part of the paving system from the parking lot to the renovated courtyard. The mechanical ducts in the basement are rerouted and allow ceilings to be raised from 7'-8" clear to 11'-0". Compact shelving replaces most of the high fixed shelving creating visual connections throughout the reading room. A light well is cut into the basement allowing much needed natural light. Glass walls for classrooms and study rooms allow for borrowed natural light from the reading room.

The extensive renovation results in greatly improved library resources, flexible classroom space, reconfigured faculty and administration offices, improved student organization offices, and a more attractive, non-institutional environment.

LEED Silver equivalent

Size / 117,000 SF
Original Cost / $21 M
Final Cost / $21 M
Scheduled Completion Date / 08/2008
Final Completion Date / 08/2008
Team Member Involvement / Donna Barry and Jose Pombo with Gould Evans; Eric Scharf, Wheat Scharf
Delivery Method / CM@R
References /
Owner Representative:
Pete Dourlein
Facilities Director, U of A
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dourlein@u.arizona.edu

User Group:
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Dean College of Law, U of A
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massaro@law.arizona.edu

User Group:
Michael Chiorazzi
Director of the Law Library, U of A
520.621.5477
chiorazm@email.arizona.edu

New Academic Center, Boston, MA

MASSACHUSETTS COLLEGE OF PHARMACY AND HEALTH SCIENCES

To help meet the growing national demand for health science professionals, Massachusetts College of Pharmacy and Health Sciences (MCPHS) has undergone a period of unparalleled growth in new programs and student enrollment. Located in an urban institution in Boston's Longwood Medical area, MCPHS had only one remaining site on which they could expand: a narrow strip of land in front of an existing iconic campus building. Designers sought to maximize the use of MCPHS's valuable site for both short and long-term needs. The new Center connects with and preserves the existing 1918 White Building with a glass atrium, retaining MCPHS's history while providing it with a new identity. On the exterior, six iconic stainless steel columns mirror the neoclassical columns on the historic building, creating a design of the new academic center and student residence building combines teachings facilities, laboratories, a library, and 233 beds of suitestyle student housing in one location.

Separation of circulation, security, noise, privacy, and image were all carefully considered. The atrium's common areas foster and enhance the interactions among students, faculty, and staff, serving as the community crossroads between the original campus building and the new facilities. Informal seating areas dispersed throughout the atrium encourage socialization.

The design team was able to accelerate the schedule and complete the facility eight months ahead of the planned completion date by staggering activities and releasing early site, foundation and structural packages.

Size / 125,000 SF
Original Cost / $36 M
Final Cost / $26.5 M
Scheduled Completion Date / 09/2006
Final Completion Date / 11/2005
Team Member Involvement / Erik Hanson as Senior Designer with SBA Architects, Inc.
Delivery Method / Design-Bid-Build
Reference /
Contractor Project Manager:
Katherine Robinson
Barr & Barr Builders
413.739.6257

Jordan Hall (Teaching Laboratory), Raleigh, NC

NORTH CAROLINA STATE UNIVERSITY

The addition to the Jordan Hall at North Carolina State University is divided between the College of Natural Resources and Marine, Earth, and Atmospheric Sciences. Each program in the addition is a mixture of laboratories, classrooms, and office spaces.

The teaching of science is increasingly becoming an interactive and collaborative effort. Collaborative learning depends upon dynamic, highly interactive environments. These activities are inextricably linked. The new building design strives to foster interdisciplinary work among faculty and students alike. The interiors serve as a total teaching/learning environment, providing opportunities for productive informal encounters. The circulation zones contain white boards and pin-up space, and a small conversation area on each floor at the east end of the building.

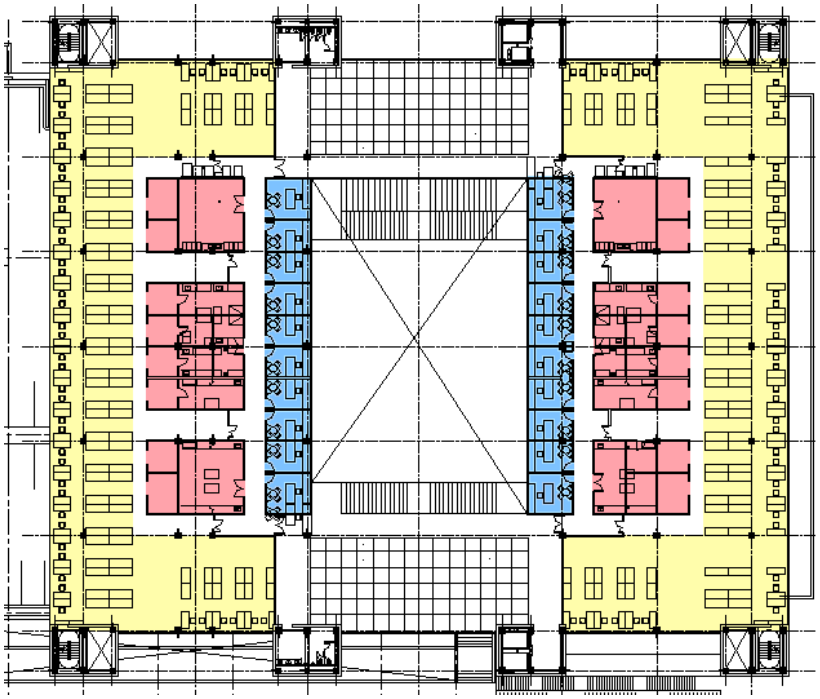
Horizontal movement within the building corridors are sized and protected to accommodate movement of large-scale equipment. Zones are designed adjacent to dedicated elevators for purposes of giving precedence to use by the physically disabled, movement of equipment, along with disposing of laboratory materials, recyclable, and supplies. Recycling pass-throughs are organized along the corridor of each floor to promote recycling efforts on-campus, and the toilet facilities on the second and third floors have incorporated shower facilities into the plan to encourage occupants to exercise and utilize alternative transportation to the building. Adjacencies to the individual instructional laboratories provide a "scientific community" for greater interaction.

Spaces, such as classrooms and lecture halls, are placed on the ground floor and separated as much as possible from instructional and research laboratories with higher security requirements.

As one of the first high performance buildings for the North Carolina State University system, the building incorporates several sustainable design strategies that include energy recovery, targeted fume hoods, environmental zoning of laboratory, offices and support, and a performance-facade facing south.

Size / 46,000 NSF, 54,800 GSF
Original Cost / $12.3 M
Final Cost / $16.3 M
Scheduled Completion Date / 07/2007
Final Completion Date / 07/2007
Team Member Involvement / David de Valeria as Senior Designer with NBBJ
Delivery Method / Design-Bid-Build
Reference /
Owner Representative:
Lisa Maune
Facilities, Planning, and Design
North Carolina State University
919.513.0400
lisa_maune@ncsu.edu


FLAMMABLE
KEEP FIRE AWAY
CAUTION ACIDS
CORROSIVES



California Nanosystems Institute, Court of Sciences, Los Angeles, CA

UNIVERSITY OF CALIFORNIA, LOS ANGELES

The facility includes multidisciplinary science and engineering research laboratories, technology-transfer laboratories, conference facilities, and offices. Disciplines involved include chemistry, biology, physical sciences, and engineering areas characterized by high sensitivity to vibration, electrical noise, and close temperature tolerances. Specialized laboratories will include low vibration labs (electron microscopy, cryo-EM and Nano characterization core), 8,400 SF of cleanrooms, class 100 and 1,000 clean room suites, imaging core (housing a cyclotron, radio-isotope hoods and shielding for short life isotopes), BSL3, and chemistry.

The laboratories are designed as functional and flexible space for collaborative academic research. Laboratory space allocations were based on the assumption that there will be six research floors plus one more public floor at the Court of Sciences level. Each floor will consist of a "neighborhood" of interrelated research projects, often crossing interdisciplinary lines.

Jacobs Consultancy, Inc. (JCI) provided programming through construction administration services for the California Nanosystems Institute and Court of Sciences site, within the UCLA central campus.

Adaptable, Flexible Laboratory Design: The only constant in laboratory design is change; JCI believes that the research environment must be designed in a highly flexible manner in order to respond to changes in programs, equipment and personnel over time. Utilizing primarily movable laboratory furniture systems and alternative utility delivery systems JCI can provide truly flexible, adaptable laboratory environments that respond to change with minimal cost and disruption. This will be an important topic of discussion during the programming phase of the new Engineering Innovation Building. JCI has many tools to assist in facilitating the programming process to assure that all needs are reviewed tested and met through a concensus process.

Size / 190,000 GSF / 117,000 NSF
Original Cost / N/A
Final Cost / $90.0 M
Scheduled Completion Date / 2007
Final Completion Date / 2007
Team Member Involvement / Jacobs Consultancy, Inc.
Delivery Method / Design-Bid-Build
References /
Owner Representative:
Stephanie Tollenaere
Director of Project Management for Capital Programs
UCLA
310.206.5940
stollenaere@capnet.ucla.edu

Warren and Katharine Schlinger Laboratory for Chemistry and Chemical Engineering, Pasadena, CA

CALIFORNIA INSTITUTE OF TECHNOLOGY

An essential feature of the Chemistry and Chemical Engineering Laboratory is the integration of chemistry, chemical engineering, and chemical sciences with other forefront areas of science and engineering research. Research laboratories throughout the multi-story building are designed for maximum flexibility and safety to foster interaction among researchers and to ensure that the laboratory, and the chemical sciences at Caltech. The laboratory was designed to be the leading state-of-the-art facility for many years to come.

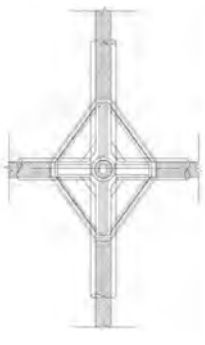
Offices for faculty, students, and staff are integrated in a way that allows ready access to laboratory spaces and encourages easy communication and informal interaction. The facility includes small conference rooms, one classroom of moderate size, several small teaching laboratories, and space for shared facilities such as nuclear magnetic resonance spectrometry and other major instrumentation.

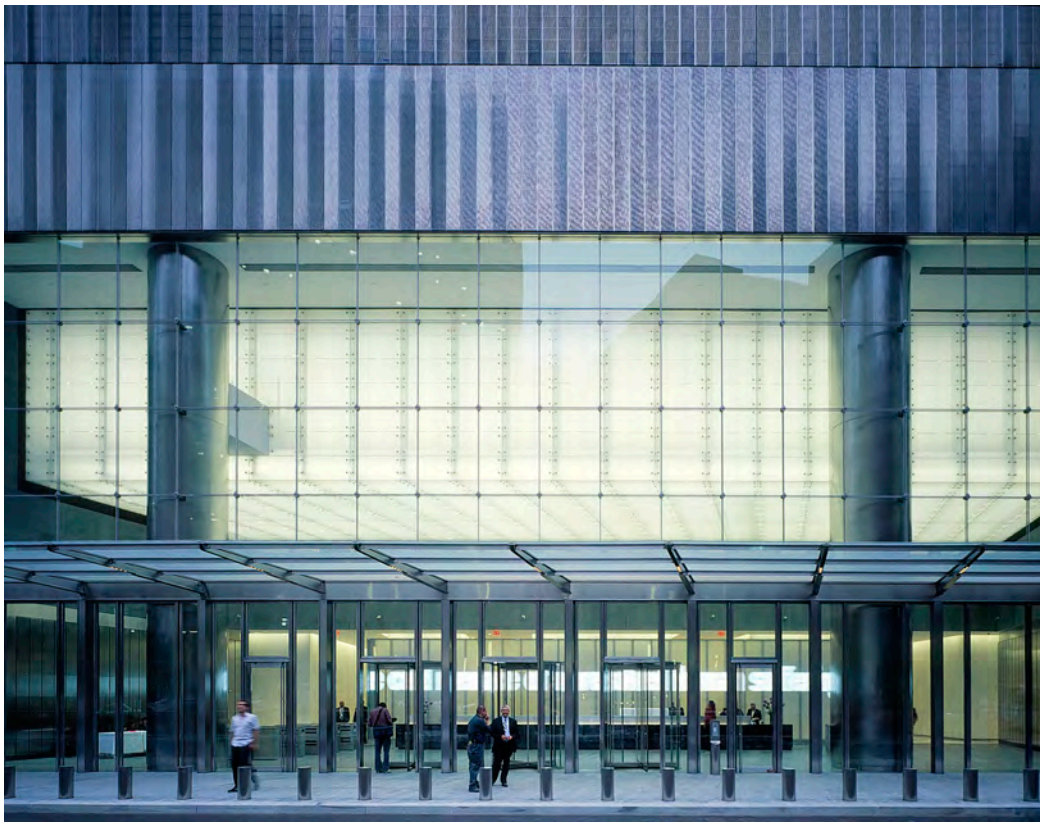
Jacobs Consultancy, Inc. (JCI) has a clear understanding of the specific equipment needs that scientists require for Materials Science and Engineering. Through innovation in programming, totally modular facilities planning, detailed layout execution, equipment expertise and quality control, JCI refines and defines the leading edge of laboratory facilities. The research in this project has been identified as being focused on Sustainable Engineering Systems. This will require a wide range of laboratory needs from non-chemical use spaces like Bio-informatics, to high chemical use needs such as Chemical Engineering. This wide range of laboratory needs will require many different specific design parameters dealing with things such as building vibration criteria, temperature/humidity controlled environments, clean room environments, light controlled spaces for laser/optics research, hazardous chemical use, data server system needs for bio-informatics, and large scale process equipment needs possibly requiring high bay space.

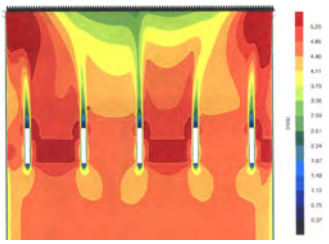
Size / 69,250 GSF, 39,028 NSF, ASF: Research Labs 17,952 SF, Shared Space 3,631 SF, Teaching Labs 990 SF
Original Cost / N/A
Final Cost / $25.0 M
Scheduled Completion Date / 2010
Final Completion Date / 2010
Team Member Involvement / Jacobs Consultancy, Inc.
Delivery Method / N/A
References /
Owner Representative:
Anthony D. Parker
Project Manager
Architectural & Engineering Services
California Institute of Technology
626.395.6282

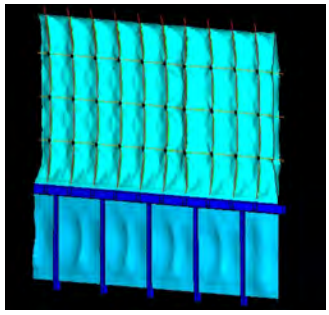

EXIT

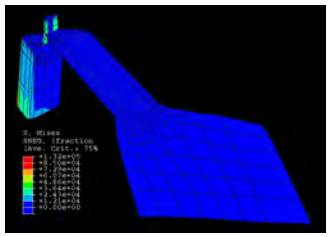

THE STATUE OF LIBERTY











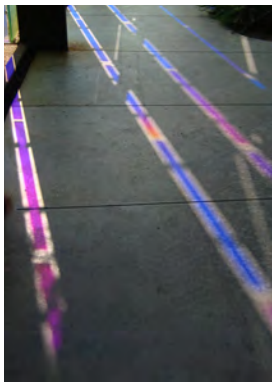
7 World Trade Center, New York, NY

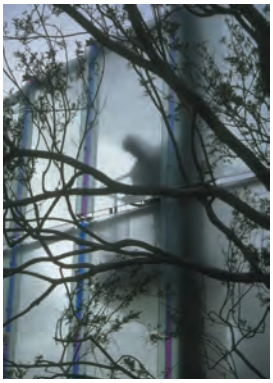
LARRY SILVERSTEIN, SILVERSTEIN PROPERTIES

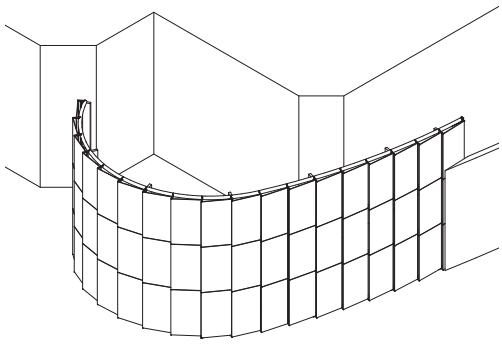
7 World Trade Center was the first tower to be rebuilt on the World Trade Center. The building was built on an accelerated schedule due to the electric transformers located within the building, which supply electricity to much of lower Manhattan. James Carpenter Design Associates (JCDA) led the design of the building's envelope as well as the **blast resistant cable-net entry wall, the blast-resistant canopy,** and the blast resistant art wall designed by Jenny Holzer.

The canopy and the lobby interior are parallelogram in plan with a geometrical orientation that extends all the way into the landscaped plaza fore court. The punch opening in the exterior of the podium folds the stainless steel into the interior of the lobby at the cable-net wall's perimeter, enhancing the delicate and transparent nature of the wall. The adjacent luminous ceiling box further accentuates the wall's transparency creating a ceremonial entrance. The wall is 105' long and 44' high. The opening is filled with a highly transparent (low-iron) glass wall with a minimal, yet bomb-resistant cable-net structure and a 12' glazed canopy extension. Given present day bomb threats, **the entrance to 7 World Trade Center deployed a four tiered blast resistant strategy, meeting governmental standards. Bollards at the building's exterior present a first defense. The entrance canopy dampens the upward thrust of a blast and, using proprietary lamination technologies, the cable-net is a flexible energy absorbing system that allows the wall to deflect and dampen the effect of a blast**. The lobby art wall features laminated glass and a connection to the floor slab that, under impact, articulates to absorb the blast, thereby protecting the building core and elevators.

Size / 602,560 SF of curtain wall, 55,952 SF of metal screen wall, 4,620 SF of cable-net wall
Original Cost / $8.0 M
Final Cost / $8.0 M
Scheduled Completion Date / 2007
Final Completion Date / 2007
Team Member Involvement / James Carpenter Design Associates
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Dara McQuillan
Silverstein Properties
212.551.7352
dmcquillan@silvprop.com







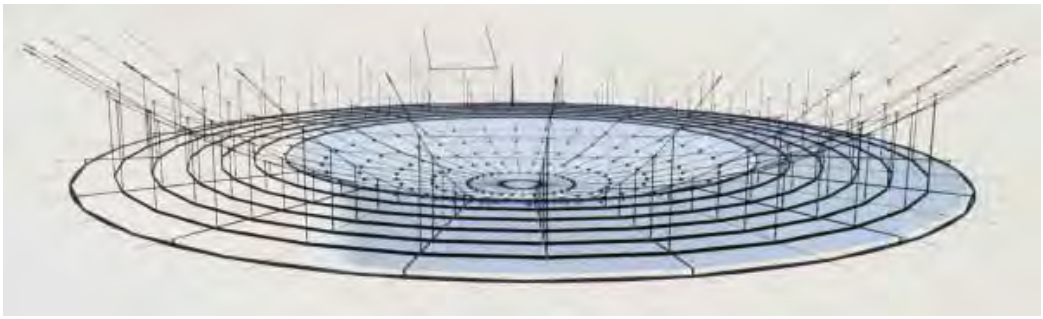
Scottsdale Museum of Contemporary Art, Scottsdale, CA

SCOTTSDALE CULTURAL COUNCIL

The Glass Scrim Wall is a free-standing exterior wall enclosing an outdoor sculpture garden at the Scottsdale Museum of Contemporary Art. James Carpenter Design Associates (JCDA) designed the scrim wall as a physical and visual barrier between the new outdoor sculpture garden and the adjacent street. Fifty-six laminated translucent glass panels, each approximately 4' x 7', are hung from a curving steel structure 21' high and 65' long. Between each bay of panels is a row of laminated Dichroic glass blades which cast varying shades of color onto the panels. Glass lamination technology, coupled with a sophisticated, yet simple steel structure, enables large and heavy glass panels to have an appearance of a lightweight lantern.

From the street, the wall acts as a prominent marker for the museum entry. Lit by the intense Arizona sun during the day and by artificial lights at night, it has an intriguing, highly variable presence depending on the quality of light, viewer's proximity, and the direction of approach. Light and the reflection of light, shade, and shadow as an artful representation of the effects of the environment and the artful detailing of the engineering in terms of structural armature and the material creation of dichroic glazing is the expertise that JCDA brings to your project.

Size / 18,826 SF
Original Cost / $5 M
Final Cost / $5 M
Scheduled Completion Date / 08/1999
Final Completion Date / 1999
Team Member Involvement / James Carpenter, Reid Freeman, Donna Barry
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Kate O'Mara
Public Art Coordinator
City of Mesa
480.644.4892
kate_o'mara@ci.mesa.az.us



Lens Ceiling, Phoenix Federal Courthouse, Phoenix, AZ

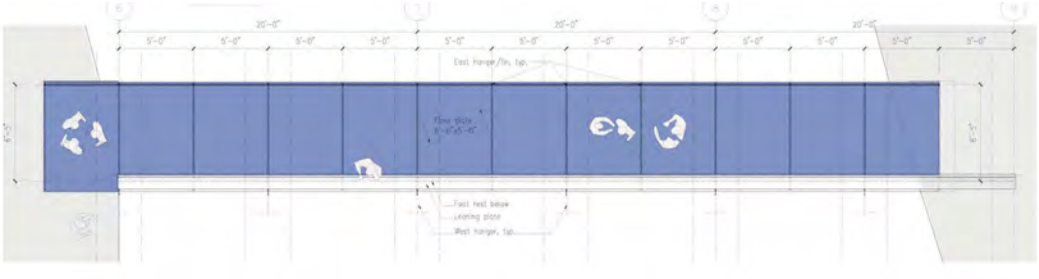
US GENERAL SERVICES ADMINISTRATION

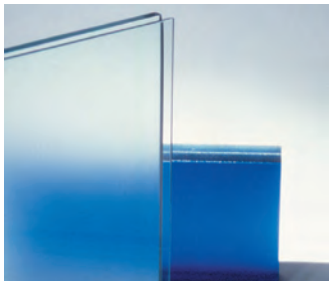
Commissioned to design the ceiling for the Special Proceedings Courtroom of the new Sandra Day O'Connor Federal Courthouse in Phoenix, James Carpenter Design Associates (JCDA) proposed the lens ceiling as not only a public artwork, but also a part of the architecture. The piece enhances the theatrical nature of the space while serving as a multifunctional building component: an acoustic barrier; a daylight and artificial lighting system; and a functional support for the fire and life safety system. The delicate, suspended cable structure describes a sphere that intersects a horizontal plane, as if a bubble of air were resting gently on a surface of water. The spherical area of glass is diffused, creating a luminous sculptural element that captures the sky and the shifting shadows of the building's structure without distracting attention from the proceedings in the courtroom.

The lens ceiling is made of various laminated glass panels and provides a thermal, acoustic, and dust barrier for the courtroom space. The central lens area acts as a precise diffuser for the artificial lighting mounted at the top of the drum, while the clear horizontal perimeter ring of glass visually frames the lens and allows views of the sky from the public viewing gallery.

The artful display of 'engineering' will be a key element in creating an 'experience' in the new Engineering Innovation Building. Our team is uniquely positioned to choreograph a special experience in the building that say's **INNOVATION**.

Size / 6,358 SF
Original Cost / $950,000.
Final Cost / $950,000.
Scheduled Completion Date / 2000
Final Completion Date / 2000
Team Member Involvement / James Carpenter Design Associates
Delivery Method / Design-Bid-Build
References /
Client User Group:
Susan Harrison
Manager, Art in Architecture Program, GSA
202.501.1181
susan.harrison@gsa.gov





Luminous Blue Glass Bridge, Seattle, WA

SEATTLE CITY HALL, CITY OF SEATTLE

The new Seattle City Hall occupies an extraordinary site that affords views out over Puget Sound and the Olympic Mountains beyond. In order to take advantage of, and to reinforce the notion, of residing above the city, James Carpenter Design Associates (JCDA) designed a glass bridge that essentially floats above and through the main lobby area. The bridge connects the new city council chambers to the city administrative office building and the mayors office.

The blue glass floor of the bridge makes a conceptual connection to Puget Sound as a transposed slice of water. The 70 foot long bridge provides a maple wood leaning rail of generous proportions toward the water, and a transparent glass wall toward the lobby.

The leaning rail encourages gathering and discussion while viewing the Sound and distant Olympic mountains. This bar of captured light, floating through the lobby, silhouettes and presents the activities and movements of the people within the building to the city passersby below.

Special glass composites and ceramic processes were employed to transform this material typically used vertically into a horizontal structural system that creates a unique experience for those that cross over and under this bridge. Similar connections can be explored between the existing AME building and the new Engineering Innovation Building.

Size / 450 SF
Original Cost / $600,000.
Final Cost / $600,000.
Scheduled Completion Date / 2003
Final Completion Date / 2003
Team Member Involvement / James Carpenter Design Associates
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Brad Tong
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Client User Group:
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Program Director, City of Seattle
206.684.7309
ruri.yampolsky@ci.seattle.wa.us


SCHOOL OF MEDICINE
EDUCATION BUILDING

School of Medicine Education Building, Riverside, CA

UNIVERSITY OF CALIFORNIA, RIVERSIDE

Built in the early 1970s as a statistical computation and mathematics building, HMC's design experts are transforming this vintage shell into the interim home of the School of Medicine. The extensive renovation includes seismic upgrades to correct structural deficiencies, complete replacement of all building systems, and extensive reconfiguration of interior spaces—all without disrupting the operation of the main campus computer hub, currently housed on the first floor.

In support of the accreditation needs for the school, HMC has worked diligently with the dean of medicine and his team to provide the full range of instructional and support spaces required—from flexible classrooms and lecture halls, to a new gross anatomy lab, simulation lab, and mock exam rooms, to administrative spaces and places for students to meet, collaborate, and share lunch during their brief breaks. The project also includes a complete replacement of the building's heating ventilation and air conditioning systems and a seismic upgrade of the structural system and much improved access for persons with disabilities.

Due to the project being a renovation, several areas of the building need to maintain operation during construction. The dissection room is in constant use during the school year so the only available time for construction was three months during the summer. A portion of the building contains the campus data center so it had to be maintained operational during the entire 12 month construction period. To satisfy these use requirements HMC worked closely with the campus to establish a phasing and access plan that was clearly delineated in the construction documents and followed by the contractor. The entire project was built in BIM (Building Information Modeling), which helped the entire design team and clients understand the building systems, and assisted the construction manager in coordination.

The project includes a new outdoor dining pavilion and extensively renovated landscaping to provide additional amenities to students whose classes are distant from the main campus dining hub.

The project uses of environmentally friendly materials and energy efficient systems with a target of LEED Silver certification.

Size / 41,890 GSF
Original Cost / $10.7 M
Final Cost / TBD
Scheduled Completion Date / 06/30/12
Final Completion Date / TBD
Team Member Involvement / James Woolum, Interior Architecture Principal
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
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University of California, Riverside
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richard.racicot@ucr.edu

Facilities Project Manager:
Kenyon Potter
Project Manager
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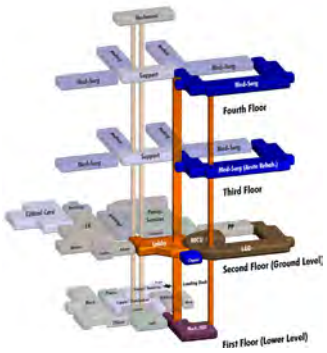
kenyon.potter@ucr.edu



Patient Care Wing Expansion Wing, Mission Hills, CA

PROVIDENCE HOLY CROSS

The 136-bed new tower houses women's services, newborn neonatal intensive care, and two medical/surgical patient care units. A new lobby with an accessible chapel creates easy access for families and patient. The expanded women's services department includes: three GI/endoscopy procedure rooms with a 10-bay recovery area, ten LDRP rooms, 11 new post partum rooms (for a total of 24), two c-section operating/delivery rooms, 12-station neonatal intensive care unit, 12-bed newborn nursery, 105 medical/surgical beds, general acute care services, spiritual care chapel, new lobby, and dining facilities.

All private patient rooms are identical to facilitate safe delivery of care. Patient care units are supported with a centralized nurses station for common tasks as well as decentralized nurse work areas to keep nurses closer to their patients. The new facility supports the best of current practices and features new methods of delivery that are effective, efficient, and responsive to patient and caregiver needs.

This project is certified LEED Silver and is among the first hospitals in California (to go through OSHPD) to achieve LEED certification. HMC and the entire project team coordinated closely with Southern California Edison and the Los Angeles Department of Water and Power to secure performance-based incentive grants. We also investigated emissions-reduction technologies for construction equipment.

Size / 130,000 NSF
Original Cost / $120 M
Final Cost / $125 M
Scheduled Completion Date / 12/2010
Final Completion Date / 12/2011
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Waldo Romero
Regional Director
Providence Health
818.847.3340
wromero@choc.org

Contractor Representative:
Jerry Mejia
Operations Manager
Swinerton Builders
949.622.7000
jmejia@swinerton.com


TORRANCE MEMORIAL
MEDICAL CENTER
TORRANCE MEMORIAL MEDICAL CENTER

New Tower, Torrance, CA

TORRANCE MEMORIAL MEDICAL CENTER

The new tower is the centerpiece of the Torrance Memorial Medical Center campus—designed to exemplify strength, reliability, and state-of-the-art healthcare. Built in response to seismic and FEMA requirements, the new tower represents the future of patient care by increasing, consolidating, and reconfiguring the inpatient, outpatient, and acute-care functions of the medical center campus to better serve patients and staff. The seven-story tower features a new entrance to the hospital campus; a combination lobby, gift shop, waiting area; healing garden; and a glass walkway that connects to the existing facility.

Fitting a new seven-story, 390,000-SF tower into the existing medical center campus surrounded by a dense urban environment was no easy task. A significant challenge for the project team has been working within the tight framework of the community while maintaining multi-phased construction plans. The location and shape of the building is influenced by the restrictions of the site and utility easements but also offered an opportunity for a new pedestrian plaza and healing garden. In addition, the project required complex and coordinated efforts between team members to maintain facility operations to the busy medical center. The efforts include the redevelopment of the primary site, rerouting of underground utilities, and a series of make ready remodels in order to ensure a seamless transition and minimize the effects of ongoing construction on the operations of each department.

Environmental impacts were minimized incorporating optimal building orientation to reduce solar heat gain and maximize outdoor views for patients; individual temperature controls to save energy by eliminating unnecessary space conditioning; a white roof to minimize heat gain; use of recycled content and environmentally-friendly finishes including low VOC adhesives and paints; use of landscaping and the creation of a healing garden to reduce the "heat island effect" from hardscape.

Size / 390,000 NSF
Original Cost / $316 M
Final Cost / TBD
Scheduled Completion Date / 2015
Final Completion Date / TBD
Team Member Involvement / James Woolum, Interior Architecture Principal
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Craig Leach
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Torrance Memorial Medical Center
310.517.4612
craig.leach@tmmc.com

Contractor Representative:
Steve Mynsberge
Executive VP, Healthcare Services
McCarthy
949.851.8383
smynsberge@mccarthy.com


SIEMENS
Novation DR

Women's Health Center, Los Angeles, CA

DIGNITY HEALTH (FORMERLY CHW)

Inviting, soothing, and classic are all words that have been used to describe the design for the new Women's Health Center (Los Angeles Center for Women's Health) for California Hospital Medical Center. The goal of this project was to create a spa-like environment that was focused on the woman; an attractive, comprehensive and safe Women's Center to respond to the needs of working professionals and residents in the Downtown Los Angeles community. The result is a spectacular use of colors, textures, and furnishings that inspire the human spirit.

The specially designed 17,000-SF Women's Health Center brings together a complete range of services that a woman - her body, mind and spirit - needs to stay healthy. This state-of-the-art facility provides comprehensive integrated women's health care services specializing in Women's Cardiology, Breast Imaging, Urogynecology, Gynecologic Oncology, and Gynecology/Menopause. The healing environment supports areas that promote the woman's experience: Patient Consultation, Patient Education, Meditation, and Massage/Therapy. An extensive gift shop is designed to allow women to purchase personal items that assist in the healing process as they undergo and rehabilitate from various procedures and treatments.

Size / 15,768 NSF, 17,000 GSF
Original Cost / $2.6 M
Final Cost / $4.3 M
Scheduled Completion Date / 10/2011
Final Completion Date / 03/2011
Team Member Involvement / James Woolum
Delivery Method / Design-Bid-Build
References /
Owner's Representative:
Jerry Clute
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Dignity Health
213.742.6418
jerry.clute@dignityhealth.org

Facilities Project Manager:
David Chacon
Area Manager, Design & Construction
Dignity Health
626.744.2223
david.chacon@dignityhealth.org

Contractor Representative:
James Salomon
Questar Engineering
949.250.0060
James@questarconstruction.com

		High-Priority Areas					
Client	Project	Master Planning Services	Laboratory Programming and Program Verification	Higher Education Learning Environment	Office/Lab Configurations	Large and Diverse Group of Stakeholders	Sustainability
University of Arizona, Tucson	Thomas W. Keating Bioresearch and Medical Research Buildings, Tuscon, AZ*	•	•	•	•	•	•
University of Arizona, Tucson	Chemical Sciences Building, Tuscon, AZ*	•	•	•	•	•	•
Arizona State University, Tempe	BioDesign Institute, Tempe, AZ*	•	•	•	•	•	•
Glendale Community College	Life Science Building, Glendale, AZ*		•	•	•	•	•
Glendale Community College	Public Safety Science Building, Glendale, AZ*		•	•	•	•	•
Massachusetts College of Pharmacy and Health Sciences Academic and Student Services	New Academic Center, Boston, MA*		•	•	•	•	•
Massachusetts College of Pharmacy	Laboratory and Residence, Boston, MA*		•	•	•	•	
North Carolina State University	Jordan Hall (Teaching Laboratory), Raleigh, NC*		•	•	•	•	
Canyon Labs	Laboratory, Scottsdale, AZ*		•		•		
AZ Biowest	Laboratory, Phoenix, AZ*		•		•	•	
US Department of Energy	National Renewable Energy Laboratories, Golden, CO*		•		•	•	•
University of California, Riverside	School of Medicine Education Building, Riverside, CA		•	•	•	•	
Providence Holy Cross	Patient Care Expansion Wing, Mission Hills, CA	•			•	•	•
Torrance Memorial Medical Center	New Tower, Torrence, CA	•			•	•	•
Kaiser Permanente Fontana	Medical Center, Fontana, CA	•			•	•	•
Jacobs Consultancy							
University of California, Los Angeles	California Nanosystems Institute, Court of Sciences, Los Angeles, CA		•	•	•	•	
California Institute of Technology	Warren and Katharine Schlinger Laboratory for Chemistry and Chemical Engineering, Pasadena, CA		•	•	•	•	
Arizona Western College	New Science Building, Yuma, AZ		•	•	•	•	
Northern Arizona University - Arizona Western College Campus	Satellite Laboratory Facility, Yuma, AZ		•	•	•	•	
Stanford University	BioEngineering/BioChemistry Building, Stanford, CA		•	•	•	•	
Stanford University	Lorry I. Lokey Stem Cell Research Building, Stanford, CA		•	•	•	•	•
University of California, San Diego	Life Sciences Building 2 Teaching & Research Facility, La Jolla, CA		•	•	•	•	

* Personal experience of Proposed Project Team Member

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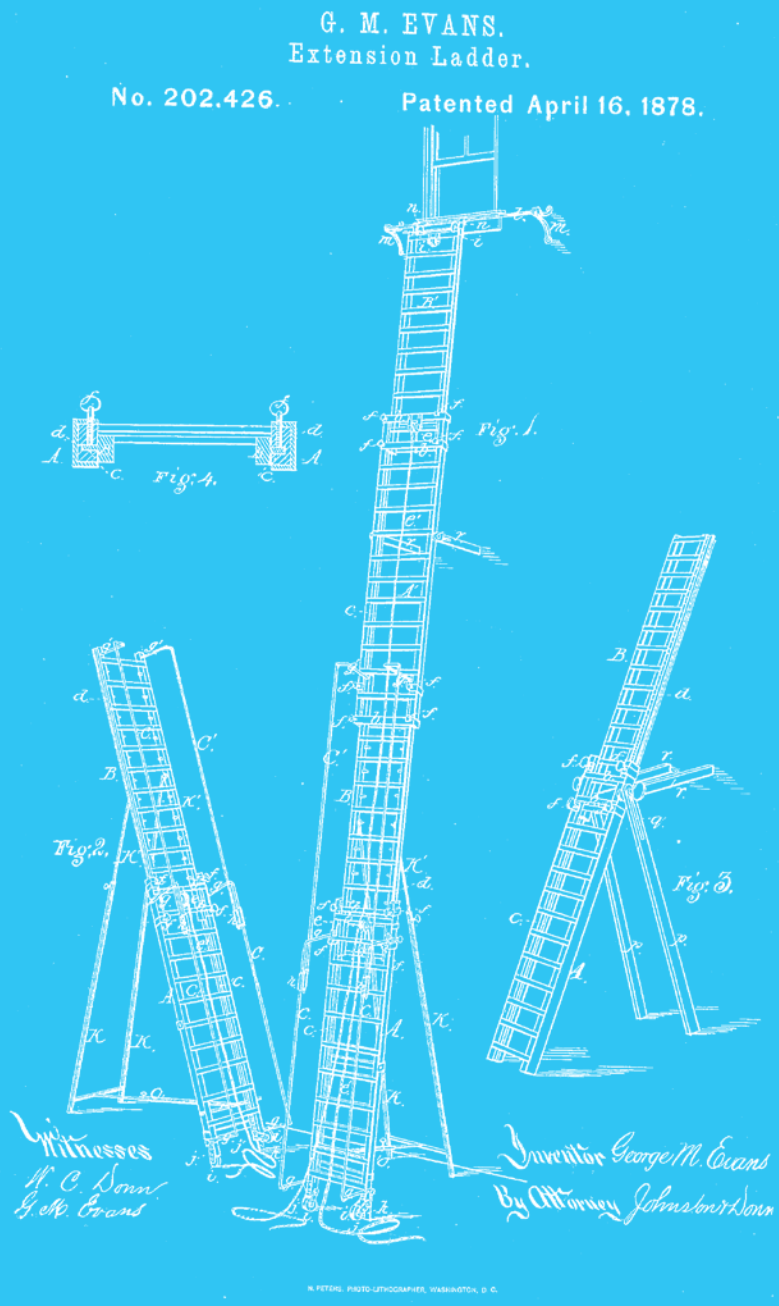


'History is littered with tails of once-rare resources made plentiful by innovation. The reason is straightforward: scarcity is often contextual. Imagine a giant orange tree packed with fruit. If we pluck all the oranges from the lower branches, we are effectively out of accessible fruit. From our limited perspective, oranges are now scarce. But once someone invents a piece of technology called a ladder, suddenly we've got new reach. Problem solved. Engineering is a resource-liberating mechanism. It can make the once scarce the now abundant.' *Peter Diamandis*

Innovations yet to be discovered…

Section 2
Key Individual Experience

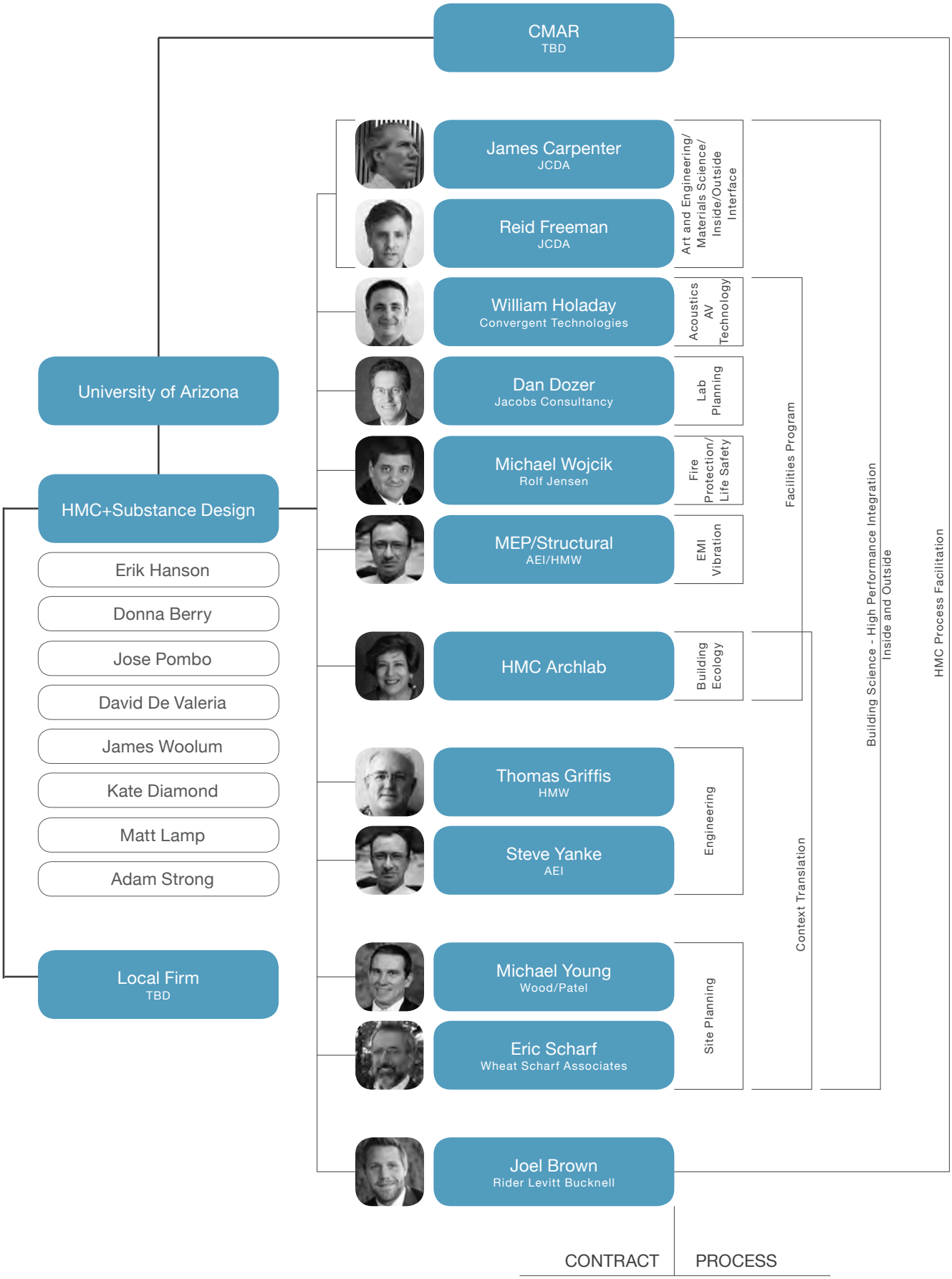
Our team is VERY familiar with your campus and this experience will be invaluable to the successful execution of the Engineering Innovation Building. James Woolum led the interior design of the Thomas W. Keating and Medical Research Buildings and the Chemistry Sciences Building prior to joining HMC+Substance Design. Donna Barry led the design and execution of the internationally recognized Stevie Eller Dance Theatre and the James E Rogers College of Law transformation with Jose Pombo while part of the leadership of another firm prior to merging with HMC+Substance Design. Jose also led the design for the Strategic Alternative Learning Techniques (SALT) building. Our individual references from our former campus project management teammates demonstrate that our team members have successfully carried through on our commitments in the past. This experience will allow us to move quickly on your project because we know your campus and we are familiar with the UA design standards and review process. There are no learning curves and we will be able to expedite the project schedule which ultimately will save money on your project. Our team also includes the Arizona firm leadership of Erik Hanson, and David De Valeria, whose deep portfolios in University Medical Research Facilities will be invaluable to your project.

Our team includes the local Tucson participation of **Wood Patel** (Civil); **Holben Martin & White** (Structural); **Wheat Scharf** (Landscape Architects); and **Ryder Levett Bucknall** (Cost Estimating and Risk Management). Our team also includes the Phoenix participation of **AEI Engineering** (Mechanical, Electrical, and Plumbing); **Convergent Technologies** (Acoustical/Audio Visual/ Technology); and **Rolf Jensen** (Fire Protection and Life Safety). All have previously worked with the local leadership of HMC+Substance Design and are familiar with the University of Arizona Campus and Facilities Review process, and bring that shared knowledge and expertise to this team. **Our team is complimented by internationally recognized experts; James Carpenter Design Associates,** (artist and materials scientist) **and Jacobs Consultancy,** (lab planning). **Projects are done by people not corporate entities and we have brought the right people with hands-on experience and leadership with references to your project.**

HMC+Substance Design has invested in the Arizona marketplace and will maximize local business participation by further utilizing local Tucson design professionals by teaming with a Tucson architectural firm. Our teaming agreement with the local architectural firm will be in the form of AIA C105 Standard Form of Agreement between Architect and Consulting Architect. Subject to rules of procurement we will work with the University on selection, timing and contracting with the local architectural firm. **We will fully collaborate with the local firm through all stages of the design and construction process.** Our team will co-locate in the local team's office for a fluid and responsive design and construction process.

Matt Lamp is currently embedded in the offices of Kitchell Construction in Mesa to collaborate daily in the coordination of the Revit model for (four) Banner Health medical buildings. Working directly with the contractor on the BIM model assures a clear understanding of construction sequencing and scheduling as well as detailing. We will work closely with the CM@R in this way on your project to assure seamless translation of contract documents to construction. Working closely with our local partners will also be invaluable to your project.

ORGANIZATION CHART - CONTRACT/PROCESS



Description of Leadership Responsibilities

HMC+Substance Design will serve as the executive architect lead by Erik Hanson as principal in charge. Erik will assure that the project is fully staffed and will closely monitor scope and schedule to assure their alignment throughout the design and construction process. Erik will shepherd the team and project through the various ABOR approval processes to assure that the critical project milestone dates are met. Jose Pombo will be responsible for the day-to-day management of project and coordination and communication with the University during all phases of design and construction. Jose Pombo will be responsible for leading the specialty and engineering coordination efforts with the consultant team. Jose will work hand in hand with the lead engineering project managers (identified in the adjacent organization chart) and the facilities project manager, Bill Vos during the University engineering coordination sessions from Schematic Design through Construction Administration.

Donna Barry will lead the architectural design efforts with our local architectural partner. Together they will work with the University Planning Design and Construction Administration, the College of Engineering and VP for Research in defining the facilities program for the new Engineering Innovation building. Donna, David De Valeria and our local counterpart will facilitate programming workshops with the stakeholders and lead the effort with Dan Dozer of Jacobs Consultancy to establish the parameters to maximize the gross square feet of development that can be achieved with the most flexible use of space to support the College's long term interdisciplinary research needs and to assure that the College of Engineering's vision for the future is maintained and enhanced. Donna will also work closely with Eric Scharf in the site development planning to assure conceptual landscape features, vehicular, service and pedestrian access, building entry points, connections to existing utilities are all in alignment with the University of Arizona Comprehensive Campus Plan. Donna, David, and James Woolum will work shoulder to shoulder to integrate the interior architecture with the building program and design concepts to create spaces that inspire creativity and innovation!

Kate Diamond will lead and champion the imperatives of high performance design. She will guide the LEED certification process from design through construction. HMC ArchLab is an in-house building science studio dedicated to the research and development of advancing high-performance architecture that is based in scientific knowledge focused on optimizing building performance. Eco-charrettes are an important part of our design process. In these eco-charrettes, all team members participate in the establishment of the sustainability goals and the development of strategies to achieve them.

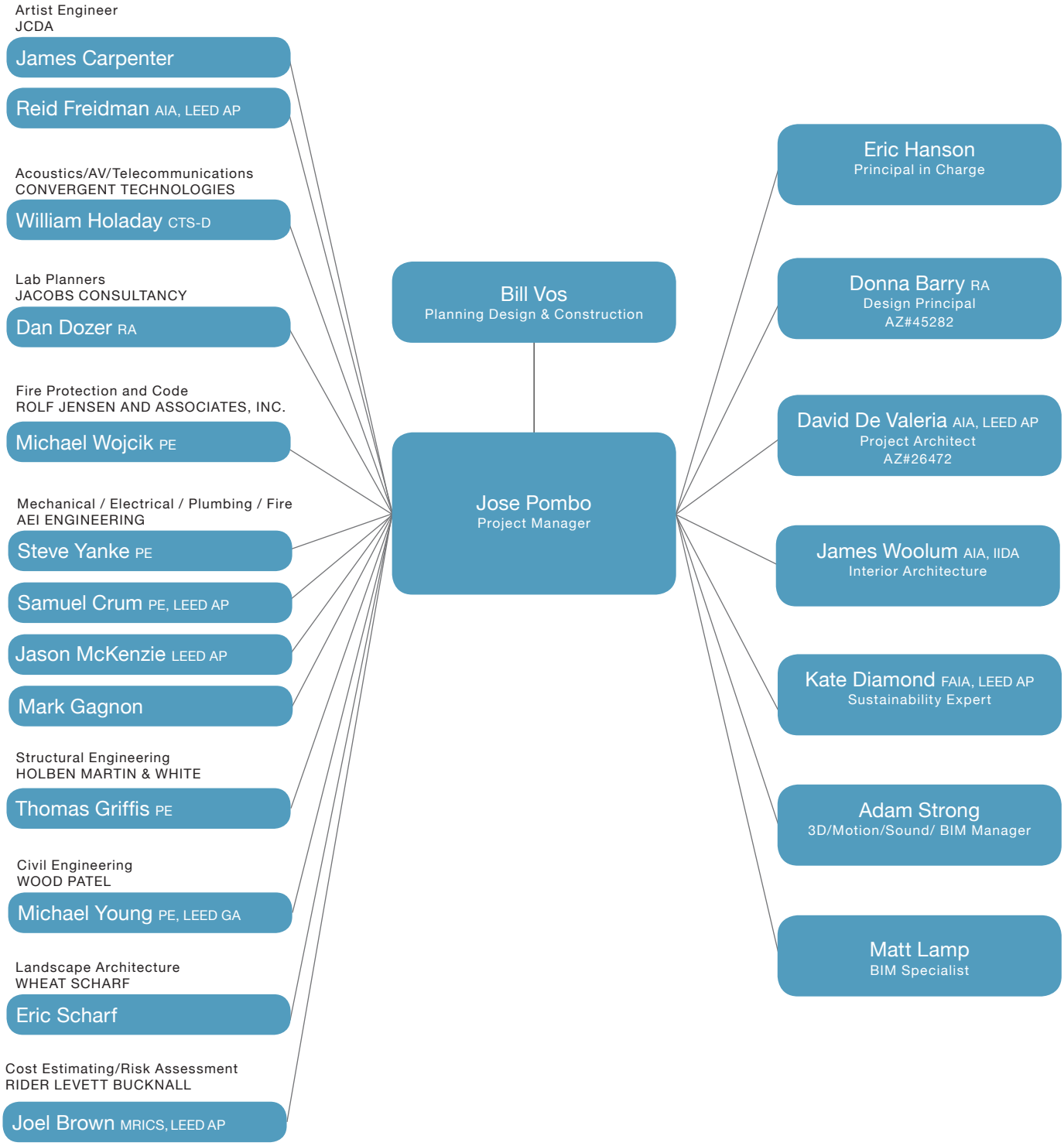
Our team also suggests an interface between HMC's ArchLab and UA School of Sustainable Engineered Systems and AzRISE during our eco-charrettes to leverage the knowledge base already established at the University. During our initial kick-off meeting, Kate will work with the University to identify other institutional resources as part of our 'overlapping expert' method of working described in section 3 of this RFQ. Kate, Donna, David, James and our local partner will work collectively and collaboratively with JCDA to determine the scope and integration of the engineered art elements that could be an interior expression of material science or part of the building envelope as demonstrated in the work of JCDA in section 1 of this RFQ.

David De Valeria will lead the design detailing and coordination for the new Engineering Innovation Building. David will also lead the project documentation efforts with Matt Lamp to assure seamless execution of the design intent. There are no hand-offs. He will work with Jose Pombo, project manager and Joel Brown of Rider Levett Bucknall to assure consistent pricing through the design phases of the project.

Jose Pombo and our local partner will represent the team with decision making authority on-site during the construction phase. Our open communication process and protocols has been very successful when dealing with issues that may arise in the field during construction.

QUOTE: *As president of CORE Construction Services of Arizona, I have had the honor to work with Jose Pombo professionally on several projects. Specifically, Jose was the architect on the $98 million Arizona State University Hassayampa Academic Village. This was an extremely challenging project with stringent budget and schedule requirements. Due to Jose's architectural management skills and commitment to teamwork, we were able to deliver this project within budget and ahead of schedule… having worked in the construction industry for more than 30 years, I have worked with numerous architects throughout the nation. I would rank Jose in an elite class and would welcome the opportunity to work with him in the future. -* **James Jacobs, President CORE Construction of Arizona**

ORGANIZATION CHART - COMMUNICATION LINES



A project of this size and scale requires a consistent flow of information between consultants and the design team. We call the project manager the 'conduit of information' assuring that all information is transferred to the entire team and efficiently transmitted back to the University Planning Design & Construction, the College of Engineering administration, faculty and staff and the VP of Research and staff. The above diagram indicates our protocol for lines of communication to assure the appropriate and efficient flow of information.

The primary point of contact through all stages of the project will be Jose Pombo.

PROJECT STAFFING MATRIX

Team Member	Role	P	C	SD	DD	CD	BA	CA
Erik Hanson	Principal in Charge	25%	25%	25%	25%	25%	25%	2%
Donna Barry	Design Principal/Process Facilitator	100%	100%	100%	100%	75%	25%	5%
David De Valeria	Project Architect	75%	75%	75%	100%	100%	25%	5%
Jose Pombo	Project Manager/Construction Admin	100%	100%	100%	100%	100%	90%	50%
James Woolum	Interior Architecture	25%	25%	50%	75%	75%	5%	2%
Kate Diamond	High Performance Design	25%	25%	25%	25%	25%	25%	25%
Matt Lamp	BIM Specialist	25%	100%	100%	100%	100%	5%	25%
Adam Strong	3D/Motion/Sound/BIM	25%	100%	100%	100%	100%	5%	0%
James Carpenter	Design Consultant	20%	30%	25%	25%	10%	5%	5%
Reid Freeman	Design Consultant	30%	30%	25%	40%	40%	10%	10%
William Holaday	Acoustics/AV/Telecommunications	5%	5%	10%	15%	20%	5%	10%
Dan Dozer	Lab Planning	25%	15%	25%	15%	10%	10%	10%
Michael Wojcik	Fire Protection and Code	20%	20%	20%	20%	20%	20%	20%
Steve Yanke	MEP Project Manager	25%	40%	40%	30%	25%	5%	10%
Samuel Crum	Mechanical Engineer	25%	40%	40%	20%	10%	5%	5%
Mark Gagnon	Electrical Engineer	25%	40%	40%	20%	10%	5%	5%
Jason McKenzie	Plumbing Engineer	25%	40%	40%	20%	10%	5%	5%
Thomas Griffis	Structural Project Manager and Engineer	2%	5%	10%	15%1	15%	2%	10%
Michael Young	Principal Civil Engineer	25%	25%	40%	30%	25%	5%	5%
Eric Scharf	Landscape Architects	10%	20%	20%	20%	10%	10%	10%
Joel Brown	Cost Estimating	40%	40%	65%	65%	50%	25%	25%

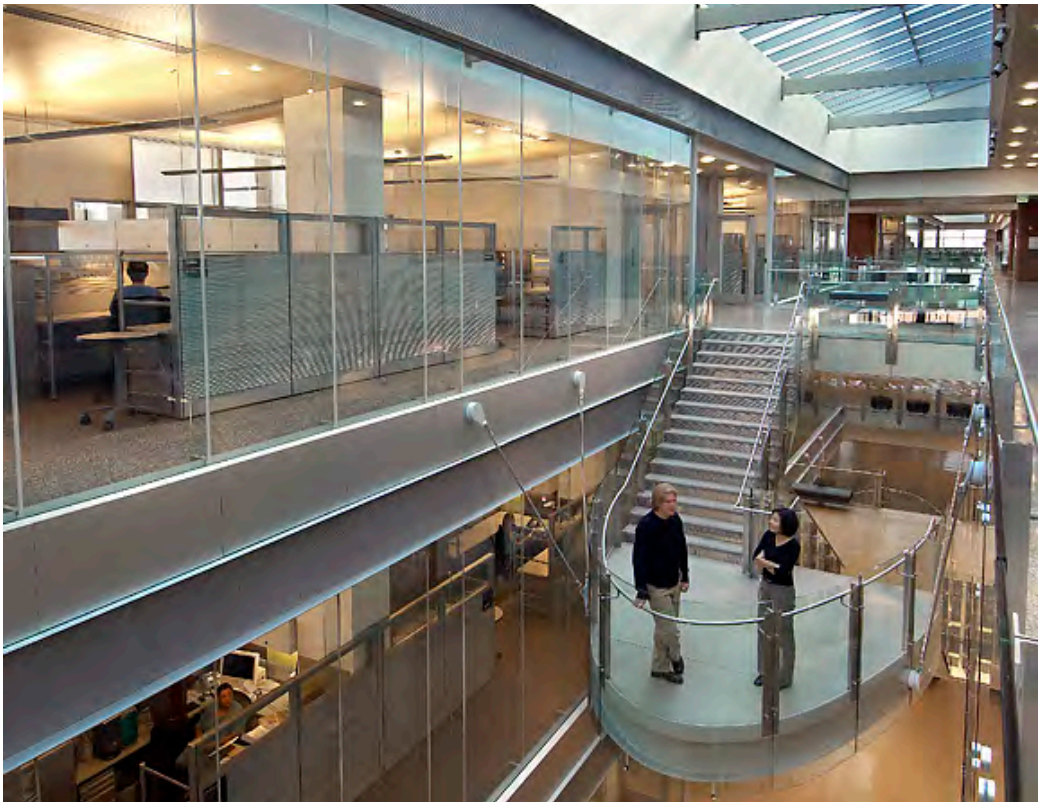
Our staffing strategy is to have consistent leadership from programming through construction administration. The partnership of our team is fluid. For consistency, Jose Pombo will also lead the construction administration on the project to assure design and budget fidelity with the CM@Risk and local architecture partner. The LEED certification process must be managed and tracked from programming through construction administration for quality assurance this role should and is inextricably linked to Project Management and Construction Administration. Jose will coordinate this effort with Kate Diamond and be assisted by Matt Lamp, one of the project designers. There are no hand-offs on our projects.

Demonstrated Expertise by Team Individuals

ISSUE + CONSIDERATION + APPROACH - **Collaboration**

Modern science is an intensely social activity. The most productive and successful scientists are intimately familiar with both the substance and style of each other's work. They display an astonishing capacity to adopt new research approaches and tools as quickly as they become available. Thus, science functions best when it is supported by architecture that facilitates both structured and informal interaction, flexible use of space, and sharing resources. A critical consideration in programming such an environment is to establish 'places'—break rooms, meeting rooms, atrium spaces—where people can congregate outside their labs to talk with one another. Even stairways, fire stairs, or stairs off an atrium with built-in window seats can provide opportunities for people to meet and exchange ideas. We look for opportunities for such uses in public spaces, making optimal use of every square foot of the building.

EXAMPLE: Biodesign Institute at Arizona State University has received national recognition. Donna Barry and Jose Pombo were integral to the success of this project on many levels as project designers on the Gould Evans/Lord Aeck & Sargent team. The values of Communication, Collaboration, and Connection reverberate through the open, light filled atrium, and laboratories. Since circulation is key to maximizing potential interaction opportunities, spaces come together around the open atrium space. Scientists constantly circulate through this open, light-filled area when walking from the labs to their offices. The break rooms and conference rooms are at important intersections of circulation and the monumental staircase provides additional opportunities for both formal and intimate interactions. **These types of interactions are invaluable to the vision and goals for the new Engineering Innovation Building as outlined in the RFQ.**



While the open atrium is the major collaborative space with informal seating to encourage 'hanging out', with white boards and plasma screens and wired and wireless computer hookups for informal interactive work sessions, there are also a series of meeting rooms including one that seats about 80 that is dividable into two smaller rooms with an operable sound isolation partition and supporting AV infrastructure. It is an Access Grid room; a highly mediated room with a 16x9 full wall of plasma screens, cameras, and microphones, allowing multiple attendees

(local and remote) to see each other and share information real time. It's like video conferencing on steroids! A 100-seat lecture room is located at the main entry lobby, and is used in community meetings and scientific conferences that can connect to other institutions around the city, state and world via the AV systems. Other meeting rooms and break rooms, all with AV feeds from the main lecture room and the dividable room, are scattered throughout the complex. **The relevance of this project to the EIB is in three areas: 1) flexible lab and specialty spaces that support specific activities; 2) community partnerships; and 3) mediated shared and collaborative spaces.**

The UA new Engineering Innovation building has similar specialty spaces that must be designed to support the activities not only of today's technologies in instructional computing, labs and business, but also be flexible to allow for future practices in these fields. Your programs' close connections with local and state agencies and specialty personnel, requires supporting infrastructure that can enhance these activities, and also support growth in the future. The shared and collaborative teaching, research and meeting spaces in your program need to be flexible, acoustically separate, and mediated to support the teaching, learning and entrepreneurial processes of your programs. As exemplified in the Biodesign Institute, we bring extensive experience in the design of collaborative spaces and mediated classrooms, as well as discrete activity areas with special infrastructure requirements.

ISSUE + CONSIDERATION + APPROACH - **Vibration Control + Electromagnetic Interference (EMI)**

Since scientific research utilizing highly sensitive research equipment will be conducted in many locations throughout the building, there is a risk that the completed building will not meet the special and specific user needs after completion. Vibrations from elevators, mechanical equipment, and foot traffic can be detrimental to the precision microscopes and instruments used in modern research facilities.

It should be recognized that different functional areas within the facility may have significantly different structural floor framing live load and vibration performance requirements. Vibration limits must be re-examined and verified early in the design phase for all spaces within the building. Flexibility for future building remodels must also be considered.

Each member of the design team will identify all special environmental issues relating to their discipline and establish all building special design requirements early in the design phase. The completed design will embody the specific building code load requirements and many owner/ user special requirements including special vibration sensitivity and EMI requirements. Once the vibration criteria for these sensitive areas are determined, structural systems capable of meeting the specified criteria can be selected. Vibration sensitivity of equipment and processes in each space should be given careful consideration during the programming effort when determining adjacencies and placement of specific program elements. Program elements with very high sensitivity to vibration should be given primary consideration for location in on grade space.

EXAMPLE: The Biodesign Institute required vibration mitigation due to the new light rail construction adjacent to the site. Tucson's new Street Car project will need to be examined in conjunction with the equipment requirements for the research labs to determine if its proximity to the new building will need to be mitigated.

EXAMPLE: Jordan Hall is for the College of Natural Resources and the Department of Marine, Earth and Atmospheric Sciences at North Carolina State University. While the building itself was not unusually isolated for vibration, the equipment at the benches in several labs needed vibration control. This was especially true for the "cloud chamber" laboratory where quantified small scale turbulence experiments were performed. Thus, part of the laboratory design brief was to provide bench area for the isolation of this equipment. This project was completed by David De Valeria prior to joining HMC.

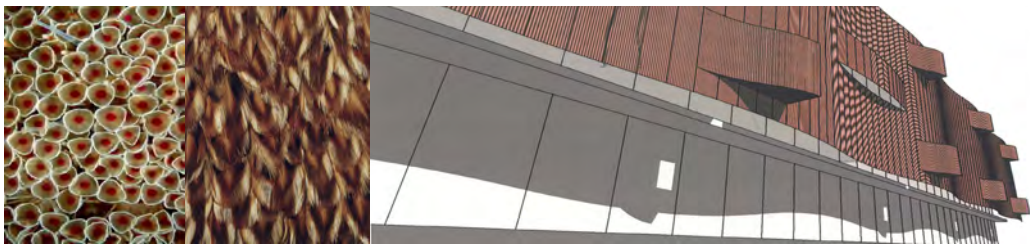
ISSUE + CONSIDERATION + APPROACH – **FLEXIBILITY**

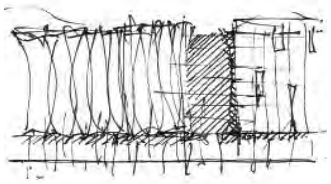
The best approach to generically programmed labs is to design them with some flexibility built in and so they can be readily modified for the installation of equipment or for changes to the engineering services or casework. Many new labs are designed with mobile casework everywhere except for the fixed fume hoods and sinks. An equipment zone is an area that can be fitted with equipment, movable furniture, fixed casework, or a combination of any of these.

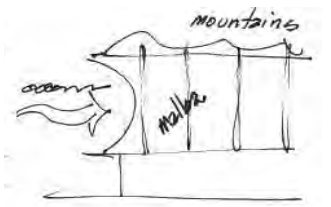
Equipment zones are usually fitted out when the research team moves into the lab—that is, when the team knows exactly what will be needed to do the work. The creation of equipment zones that accommodate change easily is a cost-effective design opportunity to accommodate changes and growth within each department. The casework is usually located on the outside wall, with islands defined as equipment zones. It is also helpful to locate 3 ft to 6 ft equipment zones on the outside walls to accommodate cylinders near fume hoods and refrigerators at the perimeter.

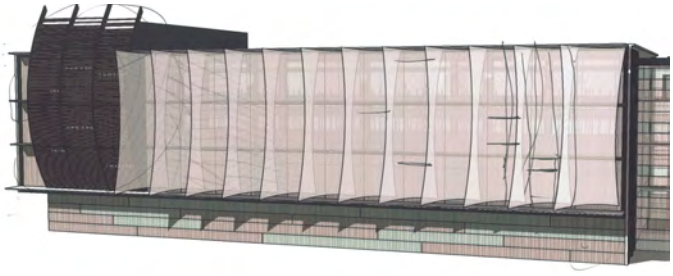
EXAMPLE: David De Valeria and Erik Hanson, prior to joining HMC+Substance Design worked together on the new Life Sciences Catalyst Project that provides highly flexible laboratory space in a culturally and environmentally sensitive location. The four-story 144,350-SF building was planned to maximize efficiency and flexibility with strategically placed mechanical cores. Each of these labs employed an overhead utility access tray in the form of a loop at the center of the lab with multiple connection points around the loop. This approach allows for ultimate flexibility and access to the various utilities needed for the myriad of experiments that are conducted in these labs. These utilities included lab air, lab vac, DI water, lab gas, clean/isolated power with 120 volt and 208 volt outlets, lab chilled water supply and return, and domestic hot and cold water. Isolated grounding was provided to each of the labs as well. Higher than standard foot candle levels were required to meet lighting levels needed for optical/laser based experiments. Sound and vibration isolation was also required for several of the labs.

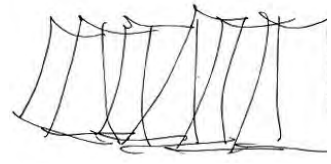
A major challenge behind this project is the task of paying homage to a culture and respecting its traditions, past, present, and future, as well as its sensitivities. The project concept takes its cues from the patterns of man and nature as they relate to the surrounding mountains and ocean. The rolling roofline echoes the profiles of the shield volcanoes of Waianae and Koolau, while the building's shading sails suggest the nearby ocean. The courtyard, with its hibiscus garden and water collecting channels, evokes natural forms found throughout the Hawaiian Islands. Pedestrian circulation paths cross the garden, interconnecting it with the surrounding city. The environment and people-friendly design features covered walkways, bicycle racks, use of low-VOC and renewable materials, storm water capture irrigation systems, Energy Star standards and more. We will explore context issues as they relate to the site planning effort on the new Engineering Innovation Building.





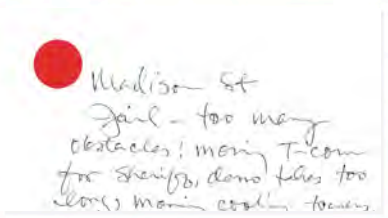


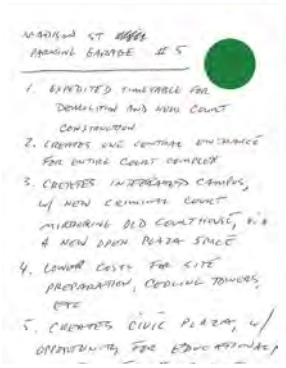




Experience Example Leadership - Decision Making Process

QUOTE: *Earlier this year I was involved in recommending Gould Evans for the Maricopa County Superior Court project based not only on the team's capabilities,* **but primarily because of the enthusiasm and passion of Donna Barry**. *We were not disappointed. Donna's ability to* **verbally and visually articulate difficult design concepts in a manner that makes them easily understood is one of the keys to the success of the project** *to date. Donna consistently pushed the envelope for us and provided a roadmap for the future of our Maricopa County downtown campus. Rather than provide a single solution to a specific problem, Donna listened and responded beyond our expectations by providing and provoking multiple solutions. I would highly recommend Donna as the guiding designer and manager on any project. I hope that I can get the opportunity to collaborate with her on future projects.* **- HM Birch, former Maricopa County Facilities Management currently PM at Gilbane Construction.**





EXAMPLE: The relevance of Donna Barry's experience with Maricopa County Court Tower project to the new Engineering Innovation Building is in the interactive participatory process that she created to reach the goals and timelines for decision-making. There were five potential sites for the project. Donna was the principal designer and one of the project architects for the Gould Evans and DMJM team. Donna navigated the site selection process and ultimately the approval process for the project with the Presiding Judge, Court administrators, the Sheriff's Office, the County Attorney's office, and Maricopa County Facilities Management. The process started in January of 2007 and, step by step, through group workshops, site tours and interviews, consensus was created among all of the diverse, but interrelated, stakeholders on the program and site selection. Both program and site selection achieved Board of Supervisor approval on May 2, 2007 within the scope and estimated cost of the project. The high-rise court tower of about 725,000 sf with a budget of $343 million opens this month.

EXAMPLE: Donna has led the UA James E Rogers College of Law user group and the UA College of Dance user groups through similar consensus building processes that led to nationally acclaimed outcomes. We are hands-on thinkers and doers and have the tools and energy to create the environment and process for your project stakeholders, with their specific, but interrelated programs for use of the new facility, to reach consensus throughout the design process. A process of collectively testing options, exploring possibilities, diagramming and visualizing experiences will enable you and us to create the architecture that best supports the goals of The College of Engineering at the University of Arizona.

Erik Hanson Managing Principal

Principal in Charge /

Office Location: Phoenix, AZ
Years with Firm: <1

"Design Happens when passion, harmony, and innovation come together."

Erik brings over 19 years of experience as a designer and principal in charge for higher education projects both nationally and internationally. Erik is a collaborative leader, while with his previous firm, he authored design and delivery processes that stress the importance of collaboration and the integration of all disciplines and parties throughout the design process. Erik and David De Valeria have over 10 years of experience collaborating on higher education projects.

Erik will serve as the University of Arizona's liaison throughout the project and will prioritize your relationship by maintaining consistent communication and ensuring strict adherence to the budget, schedule, and contract through assignment of the most appropriate resources. Erik will also ensure that sufficient firm resources are available to the project team to make certain that all aspects of your goals are met.

/ Relevant Project Experience

Massachusetts College of Pharmacy Laboratory and Residence, Massachusetts College, Boston, MA*
City Squash, Fordham University, New York, NY+
Pascua Yaqui Behavioral Health Clinic, Guadalupe, AZ
East Valley Health Center, Banner Health, Mesa, AZ
Medical Office Building, Banner Health, Chandler, AZ
Medical Office Building, Banner Health, Gilbert, AZ
East Valley Health Center, Banner Health, Queen Creek, AZ
Cleveland Clinic Abu Dhabi, Abu Dhabi, U.A.E**
CHW Mercy Gilbert Medical Center Phase II, Gilbert, AZ**
Comprehensive Master Plan, Flagstaff Medical Center, Flagstaff, AZ **
Oxford Churchill Hospital, Oxford, UK*
Beverly Hospital Master Facilities Plan, Beverly, MA*
Beverly Hospital Special Care Nursery, Beverly, MA*
Critical Care Pavilion, Metro Health Systems, Cleveland, OH***
Headquarters and Production Facility, WGBH, Boston, MA***
South Shore Hospital Surgical and Women's Health Addition, South Shore Hospital, Weymouth, MA****
Facilities Master Plan, Beth Israel/Deaconess Medical Center, Boston, MA****
Lakeshore Office Building, Birmingham, AL****
Dale Medical Center, Ozrak, AL****
Center for Advanced Medicine, University of Chicago Hospital, Chicago, IL***
Tower Lobby Project, Brigham and Women's Hospital, Brookline, MA***
Headquarters, Proton Therapy Corporation of America, Vienna, VA***
601 Edgewater Office Building, CB/Whittier, Wakefield, MA***
Lakeshore Office Building, Dale Medical Center, Birmingham, AL****
The United States Consulate, Istanbul, Turkey++
Natural Sciences Facilities Master Plan, Oberlin College, Oberlin, OH++
Master Plan, The University of Northern British Columbia, Prince George, British Columbia++
Master Plan, Worcester State College, Worcester, MA++

* Personal experience as Sr. Designer/Sr. Associate with SBA Architects, Inc.
** Personal experience as Sr. Design Architect/Sr. Project Manager with HDR Architecture, Inc.
*** Personal experience as Sr. Designer/Project Manager with Tsoi/Kobus and Associates, Inc.
**** Personal experience as Director of Design with TRO.
+Personal experience as Principal with oceanUS Design, LLC.
++ Personal experience as Project Architect with Earl R. Flansburgh + Associates, Inc.

"A single person cannot create architecture. It is the product of and requires the commitment of many."

Donna Barry Architect, Principal

Design Principal/Process Facilitator /

Office Location: Phoenix, AZ
Years with Firm: <1

Donna has 25 years of experience in architecture and urban planning. Donna has led a number of large-scale, complex higher education projects and is known for bringing people together in a highly collaborative process which results in exceptional design solutions. This work has been demonstrated for the University of Arizona on the James E Rogers College of Law transformation and the internationally acclaimed Stevie Eller Dance Theatre. Donna was also integral to building the consensus among the Maricopa Superior Courts, the Sheriff's Office, the County Attorney's Office and Facilities Management during the programming phase of the largest project the County has ever authorized, the downtown Phoenix, $342M Superior Court tower. Donna worked with James Carpenter on the Scottsdale Museum of Contemporary Art Scrim Wall and worked closely with Reid Freeman at Eisenman Architects on the Aronoff Center for Design and Art.

On your project she will be the principal designer and project facilitator. Her experience with academic facilities, exemplary organizational skills and refined, innovative design skills will ensure a successful project from design through construction. Her design solutions always look to conservation and 'smart design' techniques. She believes in building science - ie. that the systems are integrated in the design of each project and not an afterthought. She will lead the team during program verification and design charrettes. Building consensus between disparate participants is her passion and strength. Donna has also been integral to fund-raising efforts on several projects. She assisted the Toni Massaro, the Dean of the College of Law at the University of Arizona raise money from alumni by presenting the design progress of the UA Law Commons at several functions, including the prestigious Board of Visitors. Both Donna and Jose Pombo assisted Maurice Savigny, the Dean of Fine Arts and Jory Hancock, the Director of Dance raise $6M for construction and operational budget for the Stevie Eller Dance Theatre. Her passion and enthusiasm is contagious.

/ Relevant Project Experience

Stevie Eller Dance Theatre, University of Arizona, Tucson, AZ*
James E Rogers College of Law Library, University of Arizona, Tucson, AZ*
Libratory (Library + Laboratory Masterplan + Fundraising document, University of Arizona, Tucson, AZ
Student Union, Arizona State University, Polytechnic Campus, Mesa, AZ*
Biodesign Institute, Arizona State University, Tempe Campus, Tempe, AZ*
Dr. James R Carruthers NAU Science and Research Incubator Building, Arizona Western College, Yuma, AZ*
Life Sciences and Student Services Complex, Arizona Western College, Yuma, AZ*
Tempe Event Center, Tempe, AZ
Public Safety Sciences Building, Glendale Community College, Glendale, AZ
Performing Arts Center, Chandler Gilbert Community College, Chandler, AZ*
Performing Arts Center Renovation, Scottsdale Community College, Scottsdale, AZ
Library/Learning Resource Center Renovation and New Liberal Arts Building, College of the Desert, Palm Desert, CA
2012 Facilities Master Plan Update, Evergreen Valley College, San Jose, CA
2012 Facilities Master Plan Update, San Jose City College, San Jose, CA
Riverside School for the Arts, Riverside Community College, Riverside CA*
Eccles Center for the Performing Arts, Dixie State College, St. George, UT*
George S and Dolores Dore Performing Arts Center, Snow College, Ephraim, UT*
Aronoff Center for Design and Art, University of Cincinnati, Cincinnati, OH**

* Personal experience as Design Principal with Gould Evans.
** Personal experience as Project Architect with Eisenman Architects.

David De Valeria AIA, LEED AP, Principal

Project Architect /

Office Location: Phoenix, AZ
Years with Firm: <1

"There is always room in the world for one more beautiful thing that works."

David has more than 30 years of architectural experience designing higher education projects specifically focused on research laboratories. Prior to joining HMC architects, David and Erik worked together for 10 years on large scale healthcare and research projects, both nationally and internationally. David and Kate Diamond also worked in the same firm together for over two years prior to their work together at HMC+Substance Design.

As project Architect on your project, David will lead the project documentation efforts in-house and will work with the entire team to assure constructability and design integrity. David will work hand in hand with the project manager, Jose Pombo and the facilities project manager, Bill Vos during the University engineering coordination sessions from Schematic Design through Construction Documentation and into construction. David will coordinate and lead the HMC team to produce precise technical documents for your project. He will manage the technical coordination, resolve code issues and obtain University approvals. Beyond his technical expertise and systems knowledge, David is a talented designer who thinks and conceives of spaces from the inside-out with his focus always on the end user's needs. He will work hand in hand with Donna in developing concepts and details for the new Engineering innovation Building. David will also perform routine quality checks during each phase of the project.

/ Relevant Project Experience

Master Plan, University of Arizona, Tucson, AZ*
New Science Building, Division of Health Sciences, East Carolina University School of Family Medicine, Greenville, NC*
East Valley Health Center, Banner Health, Mesa, AZ
Medical Office Building, Banner Health, Chandler, AZ
Medical Office Building, Banner Health, Gilbert, AZ
East Valley Health Center, Banner Health, Queen Creek, AZ
Biodesign Institute, Arizona State University, Tempe Campus, Tempe, AZ*
Laboratory Master Planning, BioDesign Institute, Tempe, AZ*
Laboratory, Canyon Labs, Scottsdale, AZ*
Master Plan, Yavapai College, Various Sites, AZ**
Master Plan, South Mountain Community College, Phoenix, AZ*
AZ Biowest Laboratory, Phoenix, AZ*
Master Plan, Generation Seven, Scottsdale, AZ*
Canyon Laboratories, Scottsdale, AZ*
Adult Bone Marrow Transplant Unit, Duke University Medical Center, Durham, NC*
Life Science Catalyst Project, Kamehameha Schools, Honolulu, HI*
Performing Arts Center, King Kekaulike High School, Maui, HI*
Master Plan, Koc University Medical Center, Istanbul, Turkey*
New Classroom Buildings, New Classroom Buildings, Benghazi, Libya*
Dharavi Redevelopment Project, Mumbai, India*
"Education City", Ben Davis, Indianapolis, IN*
New Hospital, Catholic Healthcare West, Queen Creek, AZ*
New Addition, Mayo Hospital, Phoenix, AZ*
Feasibility Study, Sage Memorial Hospital, Ganado, AZ*
National Renewable Energy Laboratories, US Department of Energy, Golden, CO*

* Personal experience as Director of Design with Leo A Daly.
** Personal experience as Design Principal with Kenyon De Valeria Architects.

"There is no better feeling than learning our client's discipline and their passions, and making these legible in the design of their building."

Jose Pombo Associate Principal

Project Manager /

Office Location: Phoenix, AZ
Years with Firm: <1

Jose brings 17 years of experience in the areas of site analysis, space planning, master planning, and programming. He has successfully managed number of higher education projects including Life Science + Earth Science Lab + Classroom buildings, student unions, performance spaces, computer classrooms, and residence halls. In the last 3 years, Jose has been focused on the management of nearly 200,000 square feet of teaching and research science lab space.

Jose has vast experience in CM@R pre-construction while the GMP is established. His expertise in methods of design assist will be invaluable to the CM@Risk delivery method on your project. He will work closely with the CM@R to assure the University gets the best quality for the best price. Jose will be the day-to-day Project Manager and single point of contact for the University. He will work closely with our consultants to maximize integrated design solutions within the project's budget. As the day-to-day, in-house manager of the project, he will oversee the consultant coordination and Revit (BIM) model distribution and cohesive integration to assure design intent and technical requirements are fully incorporated. He will provide a consistent flow of information between all team members and the University. He will create and maintain an issues log during the documentation phase of the project to assure coordination between team members. He will work hand in hand with Donna Barry and David De Valeria during the GMP process with the CM@R. Our philosophy is to have consistent project management from design through construction. This gives the best value for our clients ensuring design integrity through project completion. Donna and Jose have worked together for over 15 years prior to merging their firm with HMC architects.

/ Relevant Project Experience

Stevie Eller Dance Theatre, University of Arizona, Tucson, AZ*
Strategic Alternative Learning Techniques Center, University of Arizona, Tempe, AZ*
Dr. James R Carruthers NAU Science and Research Incubator Building, Arizona Western College, Yuma, AZ*
Life Sciences and Student Services Complex, Arizona Western College, Yuma, AZ*
Public Safety Sciences Building, Glendale Community College, Glendale, AZ
Life Science Building, Glendale Community College, Glendale, AZ*
Library/Learning Resource Center Renovation and New Liberal Arts Building, College of the Desert, Palm Desert, CA
James E Rogers College of Law Library, University of Arizona, Tucson, AZ*
Libratory (Library + Laboratory Masterplan + Fundraising document, University of Arizona, Tucson, AZ
Performing Arts Center Renovation, Scottsdale Community College, Scottsdale, AZ
Tempe Event Center, Tempe, AZ
Riverside School for the Arts, Riverside Community College, Riverside CA*
George S and Dolores Dore Performing Arts Center, Snow College, Ephraim, UT*

* Personal experience prior to joining HMC+Substance Design

James Woolum AIA, IIDA, Principal

Interior Architecture /

Office Location: Los Angeles, CA
Years with Firm: 5

"Most people don't live, work, and play in environments designed by great architects. I can't help but wonder...how would the world be different if they did?"

Operating with the conviction that good design must have value beyond the immediate visual appeal of form and material, James is inspired by a diverse range of influences and icons—from classic modernism and mid-century design to pop culture. He has nearly 20 years of experience designing visionary education, healthcare, research, and corporate environments across the country and around the world. He leads design teams firm-wide with a collaborative, inclusive, and detail-oriented approach to design excellence. Constantly challenging the status quo, he brings his passion for leading edge design to the next generation of architects at HMC+Substance Design.

James will serve as a visionary and a motivator to the interior architecture design team, advancing concepts, providing direction, and offering the latest technology. He will oversee the project and ensure the design intention continues from inception to construction completion, while remaining within the parameters of the scope, schedule, and budget.

/ Relevant Project Experience

Thomas W. Keating Bioresearch Building, The University of Arizona, Tucson, AZ*
Medical Research Building, The University of Arizona, Tucson, AZ*
Chemical Sciences Building, The University of Arizona, Tucson, AZ*
Dean's Suite Redesign, College of Medicine, University of Arizona, Tucson, AZ**
School of Medicine Education Building, University of California, Riverside, CA

* Personal experience as Associate Principal, ZGF Architects
** Personal experience as Owner, James Woolum Design, Inc.

Kate Diamond FAIA, LEED AP, Principal

High Performance Design /

Office Location: Los Angeles, CA
Years with Firm: <2

"When we are at our best, the buildings we design communicate respect for the planet while elevating human experience."

Kate brings more than 30 years of experience leading teams that design great facilities on higher education campuses. She is at her best helping to guide integrated project teams (architects, designers, engineers, specialists) in working collaboratively with multiple stakeholders (faculty, students, administrators, and facility managers) to design high-performance facilities. Kate thrives on the challenge of transforming function-driven, high technology programs into great people places that optimize value within the constraints of schedule and budget.

/ Relevant Project Experience

Decision Theater, A state of the art immersion theater and supporting research space. Arizona State University, Tempe, AZ*

School of Communication, An award-winning renovation and addition to revision the School of Communication. Northern Arizona University, Flagstaff, AZ (Winner Best Education/Public Renovation over $5 M Southwest Construction Magazine 2004)*

Annenberg School for Communication, Multi-Phased Renovation and Expansion, University of Southern California, Los Angeles, CA* * A multi-year, multi-phase renovation and expansion effort starting with a programming and feasibility study including both multiple renovation/ code-up-grade projects including complete new HVAC, new elevators, new technology, and a 3-story addition.

University of California Davis Medical Center Central Plant with Cogeneration, University of California Davis, Sacramento, CA [Design Architect for the Brown & Caldwell Engineers Team. Published in "Architecture" July 1995. Winner AIA California Council Merit Award 1999]

* Personal experience as Design Principal with RNL Design
** Personal experience as Principal/Lead Designer with Siegel Diamond Architects

"I live to create architecture that solves problems creatively."

Matt Lamp Project Designer

BIM Specialist /

Office Location: Phoenix, AZ
Years with Firm: <1

Matt has more than 13 years of experience working on institutional, healthcare, and higher education projects. He is adept at BIM and other architectural software and is known for his detail-oriented work ethic, collaboration and responsiveness to clients, and the production and delivery of high quality documents. Matt will serve as the BIM Facilitator and will develop the BIM Work Plan and coordinate directly with consultants to ensure proper coordination and compliance with all UA BIM and CAD standards. His specific duties will be to direct the preparation of the model, set-up files, assemble composite model for coordination, perform QA/QC, and coordinate the design and systems analysis testing.

/ Relevant Project Experience

Phoenix Biomedical Plaza, The Plaza Companies, Phoenix, AZ*
Walter Cronkite School of Journalism, Arizona State University/City of Phoenix, AZ*
Four East Valley Health Centers, Banner Health Systems, Phoenix, AZ
Pascua Yaqui Tribal Health Center and Behavioral Health Clinic, Merry Carnell Schledcht, Inc., Guadalupe, AZ
New Mainstage Addition, Phoenix Theatre, Phoenix, AZ*
Performing Arts Center Renovation, Scottsdale Community College, Scottsdale, AZ*
Goodyear Campus Master Plan, University of the Incarnate Word, Goodyear, AZ*
Banner Children's Hospital, Banner Desert Medical Center, Mesa, AZ*
Replacement Hospital Master Plan, Maricopa Integrated Health Systems, Phoenix, AZ*

* Personal experience prior to joining HMC+Substance Design

"Great design, and its process, should lead the way towards a broader human experience."

Adam Strong

3D/Motion/Sound/BIM /

Office Location: Phoenix, AZ
Years with Firm: <1

Adam is a native Arizonian. He has a strong commitment and respect for the desert environment and to this place. He brings a passion for energy efficient design and for maintaining natural habitats where they exist. In addition, Adam integrates his exceptional creative capacity via multi-media platforms into the definition of a building's design and documentation. He's been instrumental in creating animated, scored pieces for public involvement processes and fund-raising purposes in addition to a project's design development and documentation process - most recently for the GCC Public Safety Sciences 1st responder facility at Glendale Community College. He has worked on construction documentation on large scale projects including the Cogenerational Plant at ASU and the ASU Fulton Center while employed with another firm. He participated in direct consultant coordination and is currently managing the consultant coordination for the Phoenix Theatre Mainstage Renovation + Addition. As a digital native, Adam will help the project stakeholders visualize the new Engineering Innovation Building as it develops in motion and in 3D.

/ Relevant Project Experience

Stevie Eller Dance Theatre, University of Arizona, Tucson, AZ*
Phoenix Theatre Mainstage Renovation + Addition, Phoenix, AZ
Public Safety Sciences Building, Glendale Community College, Glendale, AZ
Library/Learning Resource Center Renovation and New Liberal Arts Building, College of the Desert, Palm Desert, CA
Centennial Hall Renovation, University of Arizona, Tucson, AZ*

* Personal experience prior to joining HMC+Substance Design

James Carpenter Principal
James Carpenter Design Associates

Design Consultant /

Office Location: New York, NY
Years with Firm: 32

James has been working to develop independent and integrated building structures that have progressively synthesized art and architecture for more than 30 years. His studio is a collaborative firm that encourages a synthesis of ideas between architects, materials and structural engineers, environmental engineers, and fabricators that focus on the transformation of the urban environment and public realm. The studio has developed unique architectural projects and structural designs employing glass, steel, wood and composites for a variety of works, including museums, university buildings, commercial office towers and cultural facilities. James is the recipient of numerous awards including the National Environmental Design Award from the Smithsonian Institution, the American Institute of Architects Honor Award and a MacArthur Foundation Fellowship in 2004.

/ Relevant Project Experience

7 World Trade Center, New York, NY
Scottsdale Museum of Contemporary Art, Scottsdale, AZ
St. Louis Museum of Westward Expansion, St. Louis, MO
William Eckhardt Research Center for Physics, Astrophysics and Molecular Engineering, University of Chicago, IL
Bornholms Kunstmuseum, Gudhjem, Denmark
Israel Museum, Jerusalem, Israel
Tulane Student Center, New Orleans, LA

Reid Freeman AIA, LEED AP, Principal
James Carpenter Design Associates

Design Consultant/

Office Location: New York, NY
Years with Firm: 6

Reid has more than 18 years of professional experience. A principal at James Carpenter Design Associates, he received his Master of Architecture from Harvard University GSD and Bachelor of Art from Colgate University. He served as Project Manager/Project Architect for both the addition to the Bornholms Kustmuseum and the expansion of the Israel Museum. In addition, he is a founder of Barker Freeman Design Office (BFDO). Prior experience includes the Prada New York Epicenter with Rem Koolhass and the Prada Foundation Gallery with Herzog & de Meuron while at ARO. Reid has taught studio design courses and lecture courses in Construction Technology and is currently teaching both in the graduate architecture program at Parsons School of Design. Reid and Donna worked together on the Aronoff Center for Design and Art at the University of Cincinnatti.

/ Relevant Project Experience

Scottsdale Museum of Contemporary Art, Scottsdale, AZ
Bornholms Kunstmuseum, Gudhjem, Denmark
ARC Tunnel Stations, New York, NY
York Quay Light Wall, Toronto, Canada
Moynihan Station, James Farley Building, New York, NY
Princeton School of Architecture Addition, Princeton Township, NJ*
Union Square Park Pavilion, New York, NY*
Aronoff Center for Design and Art, University of Cincinnati, Cincinnati, OH**

* Personal experience with Architecture Research Office
**Personal experience while with Eisenman Architects

William Holaday Convergent Technologies

Acoustics/Audiovisual/Telecommunications /

Office Location: Tempe, AZ

William, Principal, brings with him over ten years of education and experience in project management, audiovisual systems design, architectural acoustics, noise and vibration control, telecommunications cabling systems design, and security systems design. Project exposure includes the design of nationwide multimedia presentation systems, video conferencing systems, collaborative education, large venue audio systems and high-resolution displays, television/radio broadcast and recording studios, co-axial broadband video distribution, telecommunications cabling systems, access control, and video surveillance systems.

/ Relevant Project Experience

Environment and Natural Resources Building, University of Arizona, Tucson, AZ
Arizona Biomedical Collaborative Building, University of Arizona/Arizona State University, Phoenix, AZ
Robinson Technology Building (includes Engineering), Norfolk State University, Norfolk, VA
Francis P. Chiaramonte, M.D. Center for Science + Technology (includes Engineering Department), College of Southern Maryland, Waldorf, MD
Harry J. Parrish Hall Building (includes engineering laboratories), Northern Virginia Community College, Springfield, VA
Health & Life Sciences Engineering Building, Virginia Commonwealth University, Arlington, VA
New School of Engineering, Science and Technology Building, Virginia State University,

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Daniel Dozer Jacobs Consultancy/GPR

Laboratory Planning /

Office Location: Solano, CA

Daniel is a principal with Jacobs Consultancy/GPR with over 25 years of experience as an architect designing and managing scientific and technologically, sophisticated facilities. Through this combination he has developed special skills in strengthening relationships between users and the design team, and promoting strong ties between the functions and aesthetics of a laboratory facility. He brings a strong reputation for excellence in leading and managing his projects, as well as servicing his clients in an attentive and organized manner. Prior to joining GPR, Dan was a principal at AHSC McLellan Copenhagen.

/ Relevant Project Experience

Dr. James R Carruthers NAU Science and Research Incubator Building, Arizona Western College, Yuma, AZ*
Life Sciences and Student Services Complex, Arizona Western College, Yuma, AZ*
Public Safety Sciences Building, Glendale Community College, Glendale, AZ
Life Science Building, Glendale Community College, Glendale, AZ
BioEngineering/BioChemistry Building, Stanford University, Stanford, CA
Lorry I. Lokey Stem Cell Research Building, Stanford University, Stanford, CA
Life Sciences Building 2 Teaching & Research Facility, University of California San Diego, La Jolla, CA
Biomarker Lab Project, University of California Los Angeles, CA
Coastal Biology Laboratory Facility, Santa Cruz, CA

Michael Wojcik Rolf Jensen & Associates, Inc.

Fire Protection and Code /

Office Location: Phoenix, AZ

Michael is an Associate Manager in the Phoenix office where he is responsible for project management, code consulting, review of fire/life safety systems and consultation. Since joining the firm in 2007, his experience includes the design, specification, and oversight of all types of fire protection systems and the review and analysis of building construction requirements in accordance with nationally recognized building and fire codes. He has also served as the Fire Protection Engineer for the Phoenix Fire Department Special Hazards Unit. His services in the fire service include the provision of technical support to operations, customer consultations on new project development, examination of technical drawings and performance of on-site survey and inspection of hazardous material control equipment in a wide range of facilities and locations.

/ Relevant Project Experience

Health Sciences Education Building (HSEB) and Arizona Biomedical Collaborative (ABC) I/II, University of Arizona Phoenix, AZ
Health Sciences Education Building (HSEB) Vivarium, University of Arizona, Phoenix, AZ
Logan Hall, University of New Mexico, Albuquerque, NM
Cord Blood Registry, Tucson, AZ
Interdisciplinary Science and Technology Building (ISTB), Arizona State University, Phoenix, AZ
College of Agriculture, Utah State University, Logan, UT

Steve Yanke AEI

Principal / Project Manager /

Office Location: Phoenix, AZ

Steve leads AEI's Phoenix office. He is a registered engineer with over 23 years of demonstrated success in positions of increasing responsibility in electrical engineering design, project management, marketing and business operations. He brings his clients strong project design and construction experience in government, higher education, and healthcare, corporate and institutional facilities.

As Project Manager, Steve is responsible for directing the design team in all aspects of engineering activities to ensure client satisfaction. He accomplishes this objective by defining and articulating project criteria and working to define a detailed project concept. He has significant experience on The University of Arizona campus and he has recent experience with the U of A Design Guidelines and with the University's Planning, Design and Construction Department.

/ Relevant Project Experience

Health Sciences Education Building, Phoenix Biomedical Campus, University of Arizona, Phoenix, AZ
Arizona Cancer Center, University of Arizona, Phoenix, AZ
Radiology Department, University of Arizona Medical Center, Tucson, AZ
Hybrid Operating Room, University of Arizona Medical Center, Tucson, AZ
Surgery Tower Planning, University of Arizona Medical Center, Tucson, AZ
Vivarium HVAC and Campus Chilled Water Reliability Study, Arizona State University, Tempe, AZ
Laboratory Renovation, Arizona State University, Tempe, AZ
Health Sciences Campus Master Plan Lands West, University of New Mexico, Albuquerque, NM
Operating Room Expansion, Banner Good Samaritan Medical Center, Phoenix, AZ

Samuel Crum AEI

Local Mechanical Engineer/ Mechanical Engineer of Record /

Office Location: Phoenix, AZ

Samuel is experienced in leading teams in the planning and design of mechanical systems for new construction and renovation projects involving healthcare, industrial and laboratory facilities. His comprehensive background in mechanical engineering includes heating, ventilating and air conditioning (HVAC) and plumbing systems design.

Samuel also communicates effectively with multiple client groups, including owners, users, department heads and facility managers, in order to deliver projects on time and under budget.

/ Relevant Project Experience

Arizona Cancer Center, University of Arizona, Phoenix, AZ
Vivarium HVAC and Campus Chilled Water Reliability Study, Arizona State University, Tempe, AZ
Multidisciplinary Cancer Research Facility, Purdue University, Lafayette, IN
Measurement, Materials, and Sustainable Environment Center, The University of Kansas, Lawrence, KS
Chiller Upgrade, Banner Boswell Medical Center, Sun City, AZ
Four East Valley Health Centers, Banner Health, Various, AZ
North Wing Center Core Pump Replacement, Meriter Hospital, Madison, WI

Jason McKenzie AEI

Local Electrical Engineer /

Office Location: Phoenix, AZ

With a career focused on laboratory and health care facilities Mr. McKenzie understands the need for continuity of power not only after the project is complete, but also during construction. His experience includes several new construction projects for the University of Arizona.

/ Relevant Project Experience

Arizona Cancer Center, University of Arizona, Phoenix, AZ
Health Science and Education Building, University of Arizona, Phoenix, AZ
Vivarium HVAC and Campus Chilled Water Reliability Study, Arizona State University, Tempe, AZ
Arizona Biomedical Collaborative – Vivarium, University of Arizona, Phoenix, AZ
Research Building 3, University of Southern California, Los Angeles, CA
Research Campus, Chandler, AZ
School of Engineering G-Wing, Arizona State University, Tempe, AZ
Physical Sciences Facility, Pacific Northwest National Laboratory, Richland, WA

Mark Gagnon AEI

Local Plumbing Engineer /

Office Location: Phoenix, AZ

Mark has designed plumbing and fire protection systems for healthcare, higher education and laboratory facilities. His expertise includes medical gas, waste and vent, domestic water and fire protection systems. His responsibilities include overseeing all aspects from project start-up through construction phases.

/ Relevant Project Experience

Health Science and Education Building, University of Arizona, Phoenix, AZ
The Arizona Cancer Center, University of Arizona, Phoenix, AZ
Hybrid Operating Room, University of Arizona Medical Center, Tucson, AZ
New Bio-Manufacturing Facility, BD Bioscience, Miami, FL*
Schematic Design Study, Tufts University, Boston, MA*
King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia*

* Personal experience prior to joining AEI.

Thomas Griffis Holben, Martin & White

Senior Structural Project Manager and Engineer /

Office Location: Tucson, AZ

Tom has 29 years of experience in structural engineering, including 25 with HMW. His diverse project experience includes a wide spectrum of architectural structures. He has served as project engineer on a multitude of large-scale building projects in Southern Arizona, much of it in educational facilities. His project experience includes new building design, additions, structural modifications and remodels, structural rehabilitations and code upgrades. He will be the contact for the firm on this project.

/ Relevant Project Experience

Chemistry Building Expansion, University of Arizona, Tucson, AZ
Cancer Center, Phoenix Biomedical Campus, University of Arizona, Tucson, AZ
Vivarium, Phoenix Biomedical Campus, University of Arizona, Tucson, AZ
Environment and Natural Resources Building Phase 1, University of Arizona, Tucson, AZ
Sarver Heart Center, University of Arizona, Tucson, AZ
Intercollegiate Athletic Facility, University of Arizona, Tucson, AZ
6th Street Residential Housing, University of Arizona, Tucson, AZ
Highland District Housing, University of Arizona, Tucson, AZ

Michael Young Wood, Patel and Associates, Inc.

Principal Civil Engineer /

Office Location: Tucson, AZ

Michael has 19 years of civil engineering experience throughout Arizona in land development. His experience spans a broad area of responsibilities, including development projects such as higher education facilities, recreational facilities, and site development. His responsibilities include managing large and small scale development projects, technical master planning, survey, and design of water, sewer, grading, drainage, and paving improvements. This experience spans a broad area of responsibilities, including site development projects such as higher education facilities, municipal complexes, health care facilities, corporate campuses, and industrial. His responsibilities include serving as Managing Principal for large- and small-scale development projects, technical master planning, client satisfaction, and quality control.

/ Relevant Project Experience

Academic Buildings, Polytechnic Campus, Arizona State University, Mesa, AZ
Ring Road and Infrastructure, Polytechnic Campus, Arizona State University, Mesa, AZ
Central Plant/Water and Sewer Improvements, Polytechnic Campus, Arizona State University, Mesa, AZ
Driving Range, Polytechnic Campus, Arizona State University, Mesa, AZ
New Business School Facility, Arizona State University, Tempe, AZ
Skysong, Center for New Technology Infrastructure, Arizona State University, Scottsdale, AZ
Skysong Scottsdale Center for New Technology & Innovation Buildings 1 (LEED Silver), 2 (LEED Silver) & 3, Arizona State University, Scottsdale, AZ

Eric Scharf Wheat Scharf Associates

Landscape Architect /

Office Location: Tucson, AZ

As an Arizona registered Landscape Architect for 27 years and Principal with Wheat Scharf Associates for 19 years, Eric's project work is focused on public facility planning, design and construction for the University of Arizona, Pima Community College, City of Tucson, Arizona Department of Transportation, and Pima County. Prior to rejoining WSA in 1997, Eric worked as Project Coordinator for the University's Department of Facilities Design and Construction for seven years. In this capacity, he managed more than 60 projects, from small remodeling improvements to the softball stadium and the Environment and Natural Resources Building. Eric has been a member of the University Planning and Design Review Advisory Committee since 1996.

/ Relevant Project Experience

Campus Plan Update, University of Arizona, Tucson, AZ
Institute for Biomedical Science and Biotechnology and Medical Research Building, University of Arizona, Tucson, AZ
James E Rogers College of Law Library, University of Arizona, Tucson, AZ
Sixth Street Residence Halls, University of Arizona, Tucson, AZ
Student Recreation Center Expansion, University of Arizona, Tucson, AZ
Sarver Heart Center, University of Arizona, Tucson, AZ
Sciences Concourse Master Plan, University of Arizona, Tucson, AZ
University Village Town Center South and Learning Services Building (LSB), University of Arizona, Tucson, AZ
Athletics Expansion, University of Arizona, Tucson, AZ

Joel Brown Rider Levett Bucknall

Cost Estimating /

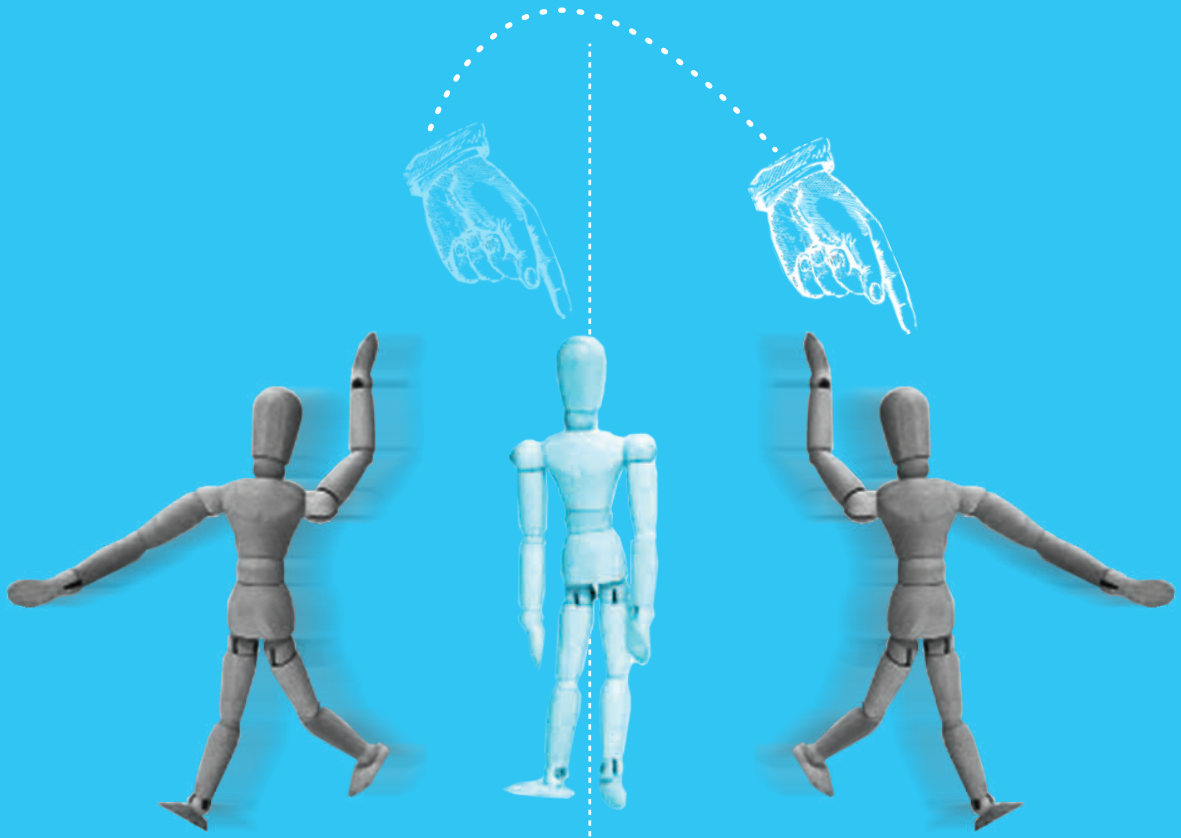
Office Location: Tucson, AZ

As Cost Manager, Joel will be the key, locally-based team member providing the design team with independent, milestone cost estimating services. Joel is a certified member of the Royal Institute of Chartered Surveyors (MRICS) and a LEED Accredited professional managing all aspects of Rider Levett Bucknall's Tucson office. He has completed a Bachelors Degree in Quantity Surveying at the University of Abertay, Dundee, Scotland. With nine years of experience in all facets of construction, including estimating and post-contract administration as a Consultant and a Contractor, Joel provides added value to the design team. He has been responsible for a wide variety of projects and building types for both private and public sector clients.

/ Relevant Project Experience

AHSC Substation Expansion, University of Arizona, Tucson, AZ
College of Agriculture Veterinary Science & Research Facility, University of Arizona, Tucson, AZ
North End Zone Renovation, University of Arizona, Tucson, AZ
Resident Life Renewal, Phase II, University of Arizona, Tucson, AZ
Sixth Street Residence Hall, University of Arizona, Tucson, AZ
ISTB IV, Arizona State University, Tempe, AZ
Pacific Regional Biocontainment Laboratory, Honolulu, HI
Phoenix Biomedical Campus, Phoenix, AZ
Laboratory Expansion, Tucson, AZ
Southern Regional Crime Laboratory, Tucson, AZ
On-Call Estimating Contract, City of Tucson, Tucson, AZ


EXIT
EXIT



Quantum entanglement is more than just theoretical jargon. It is leading to the realization and several exciting and emerging technologies, such as quantum computing, unbreakable codes and even teleportation. Subatomic particles appear to be linked with each other even when divided by impossible distances. Will we ever untangle quantum entanglement to enable objects and people to teleport over large distances?

Innovations yet to be discovered…

Section 3
Project Management

Processes; Strategies; Practices; Procedures; and Resources

Our proposed process for this project is not linear, instead it is fluid and disciplines overlap. We do not work in isolation, rather we work as an integrated team, joined together, and connected by your project; the Engineering Innovation Building. Our team is organized as a series of **'overlapping experts'**: this creates a cross-pollination of disciplines with many voices, points of view, and experience.

The nucleus is the synergistic outcome of a multi-disciplinary team focused on leveraging the College of Engineering's 'ability to interface their experimental teams with their modeling and simulations teams', a goal that is critical for long term success. The zone where the disciplines overlap is the expertise and leadership of the HMC design and management team. This diagram articulates our layered working relationship and includes the owner/stakeholders and the CM@R as part of the creative process.

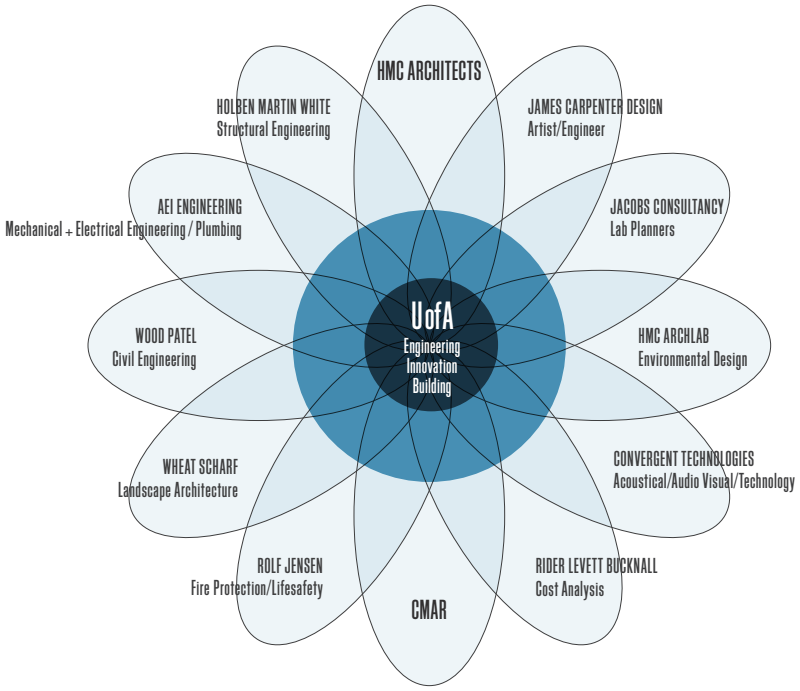
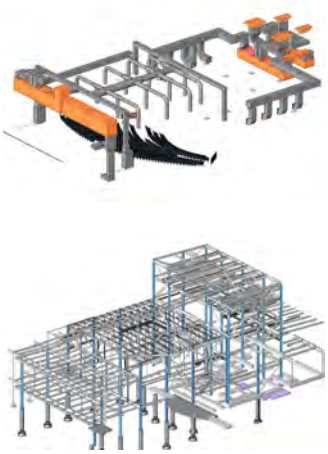


Diagram 1
Overlapping Experts

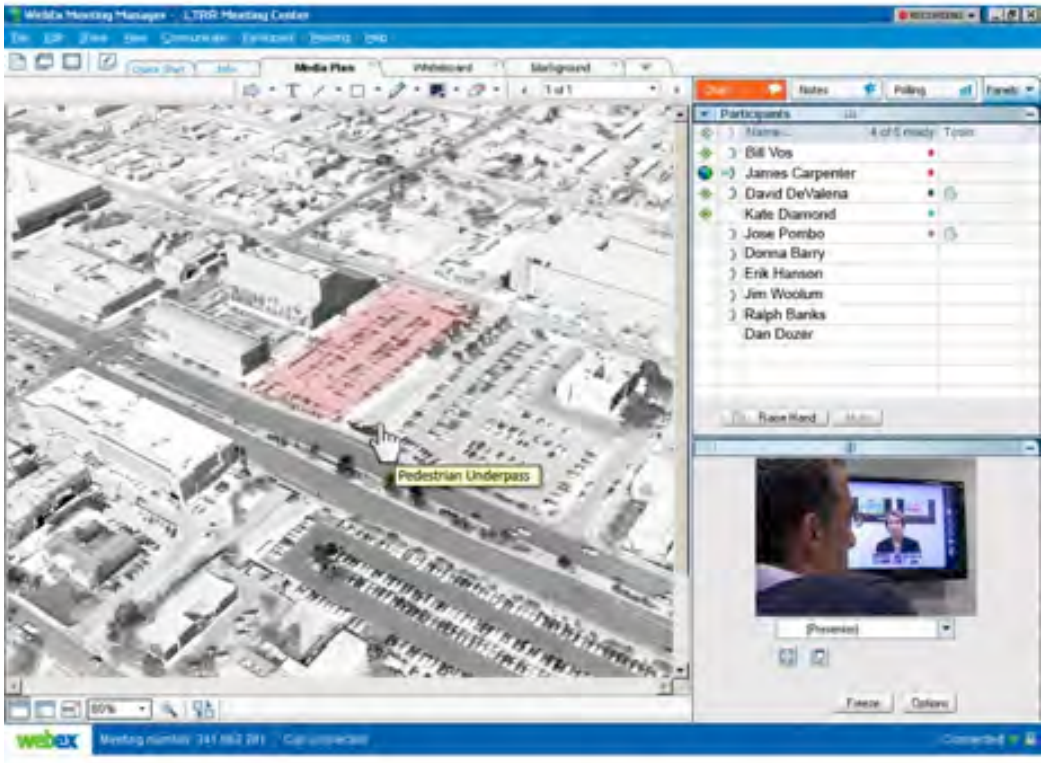
Our design and management approach is to **SEE**; to **S**eek, to **E**xplore (Evaluate) and to **E**xecute. Three critical aspects of successful management for complex projects include, the formation of a cohesive team of experts; understanding that the project team includes the owner, the designer, ultimately the contractor, and finally the need to 'partner' and work collaboratively with all members of the team. The management procedures that we employ to ensure the successful delivery of the project include an open rigorous design process. Starting with an array of **'idea vignettes'** to graphically represent ideas and concepts early in the programming and planning process, we then initiate a series of coordination workshops to ensure the integration of all aspects of the project, providing a consistent system of communication, and the provision for a uniform team from conception through delivery. Our core team will be available on site daily throughout the design and construction process to assure the successful delivery of the Engineering Innovation Building.

Examples of **idea vignettes** *are illustrated on the section dividers of this SOQ describing various scientific theories and practices.*

Approach to team building: We employ partnering sessions to align objectives, goals and processes. These sessions include superintendents and subcontractors, owner representatives, representatives from the user groups, and the design team. In order for all team members to feel part of a team, and achieve a "win-win-win" outcome, each team member must respect the point of view of the others, and all must actively participate to support the common goal of delivering the highest quality project possible. The practices and procedures that we propose for this project are centered on the act of communication. Open communication among and between all team members is achievable with the open exchange of information, documents and ideas. We will establish a secure website to share and transfer information between all members of the team. This will not replace the face to face meetings but provides immediate access to information 24/7. We've used inexpensive social networking (Google Plus) for communication internally and externally and we've also actively employed GoTo Meetings; and video conferencing. We find it critical to set up on-site 'war rooms' where we cohabitate with members of our team for working charrettes, deep coordination, and problem solving.



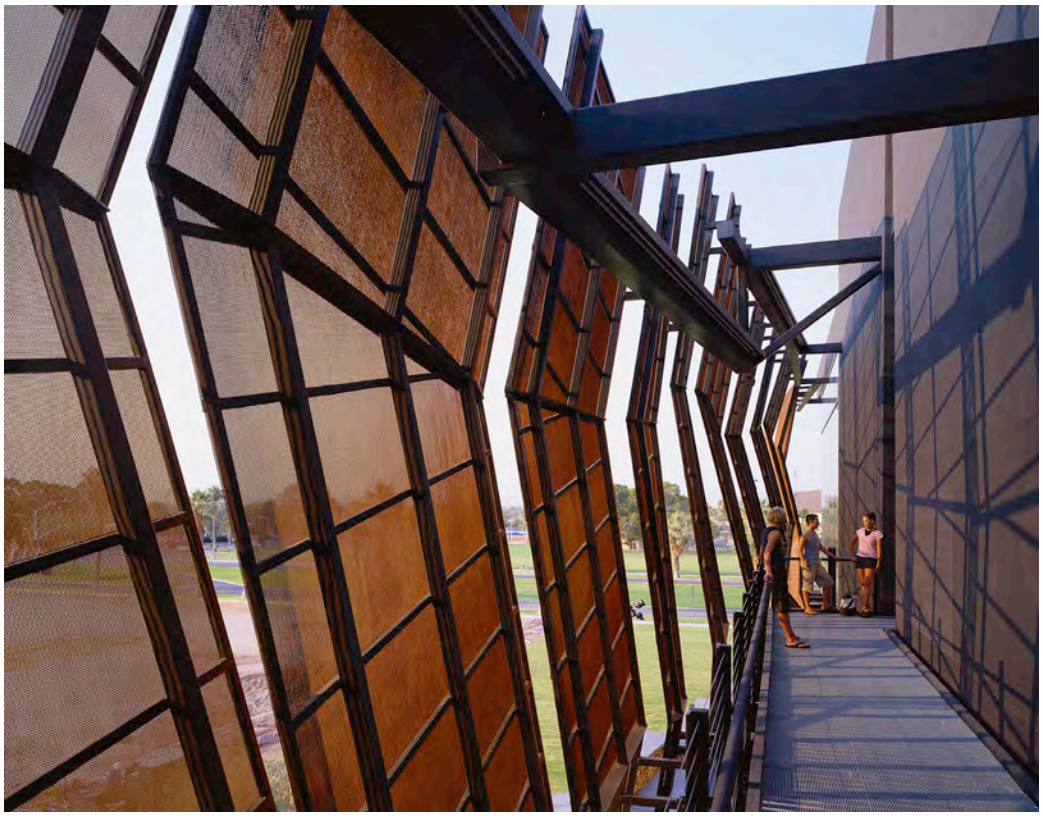
▲ *BIM model of Phoenix Theatre*

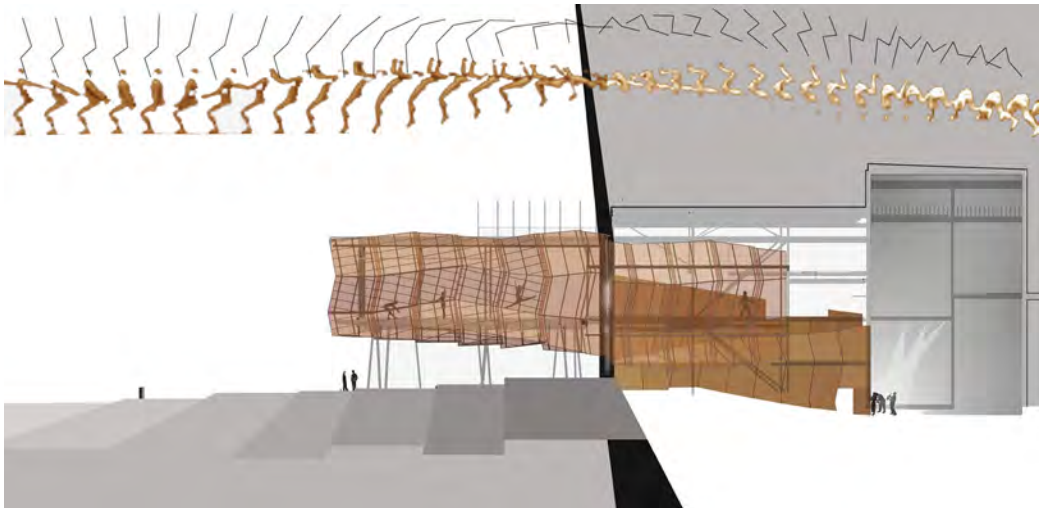


▶ *Example of a secure project website: UA EIB website demonstrating BIM model already in progress for your project.*

A challenge to every project is the ability of the design team to create an environment for open dialogue and respectful dissent; to create a safe open environment that allows the best ideas to flourish. We create an environment where the **best idea always wins** no matter who initiates it. ALL of our projects explore opportunities to creatively expand programmatic functions within specific budget frameworks.

Balancing needs, wants and desires in order to find creative solutions that exceed expectations is our forte and will form an important part of this project. We will look beyond the traditional identification, quantification and inventory of spaces provided in traditional program documents. The program and planning process should describe and model the rich array of **experiences** that will define the customs and culture of the College of Engineering (COE) from the perspective of a wide variety of users – students, faculty, researchers, COE leadership, staff and alumni. To this end, several categories of goals must be clearly articulated and defined. These include research goals, organizational goals, form and image goals, function goals, sustainable goals, economic goals, and time management goals. Through a collaborative process of fact finding, the stage will be set for establishing a shared vision which challenges preconceptions, explores project typology, past solutions as case studies, as well as current trends and benchmarks the best new solutions of modern university research labs for innovation and incubation.





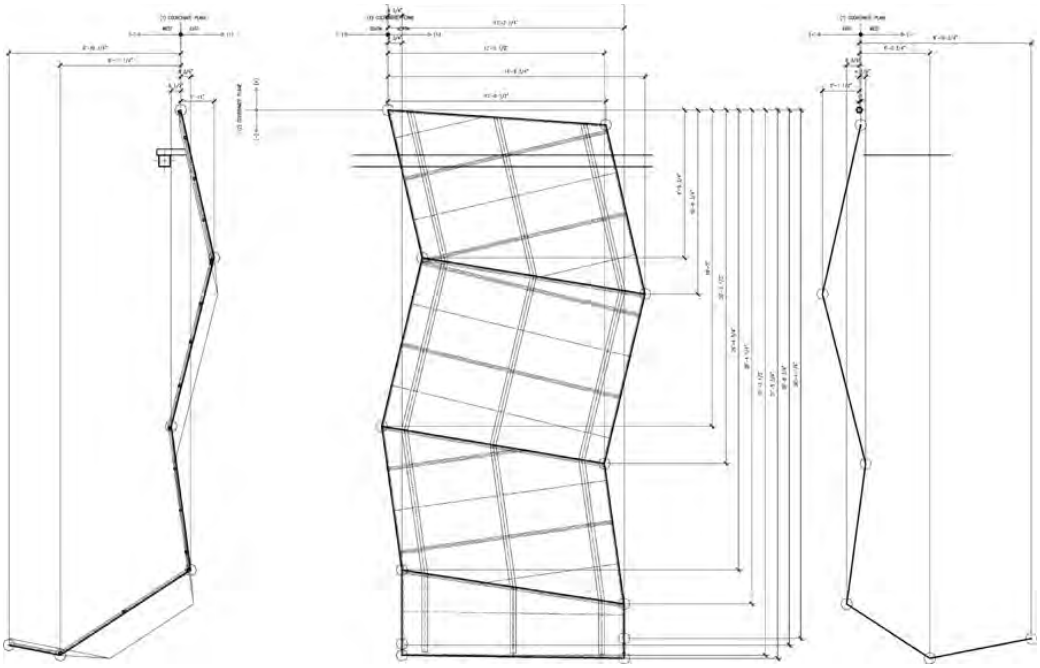
EXAMPLE: Stevie Eller Dance Theatre – embodies ideas of movement and dance creating a new international BRAND for the college of Dance. We seek the same for the College of Engineering.

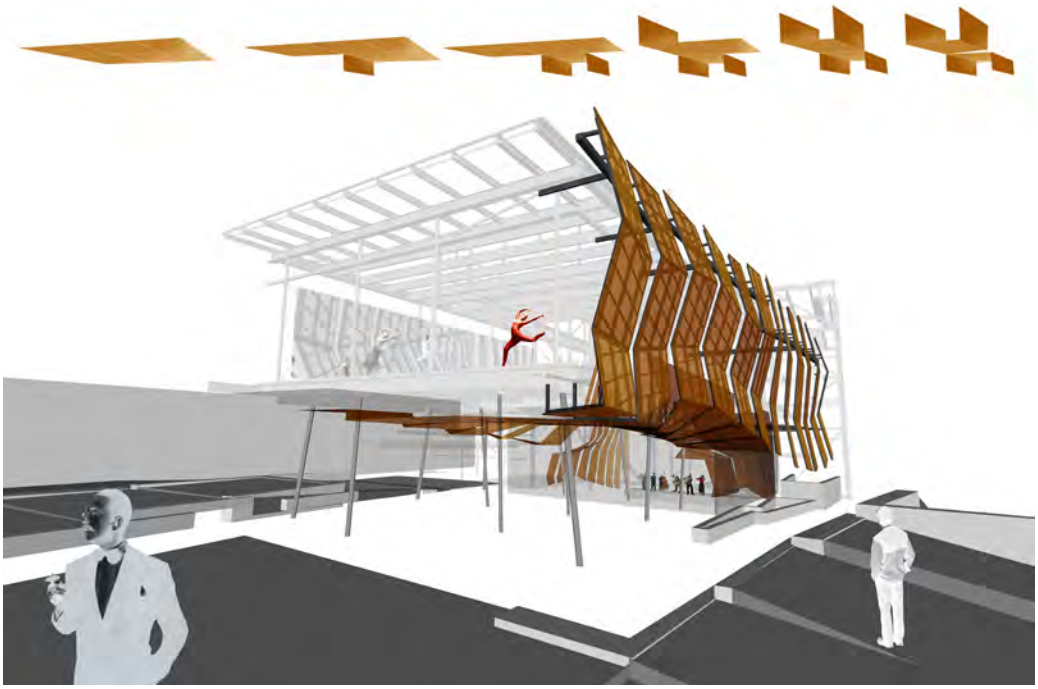
QUOTE *"...we were lucky enough to have Donna and Jose as the principals in the design of our building. They spent countless hours listening to us as we expressed our needs and dreams. They researched our field, and learned more about dance than I would ever expect anyone to do.* **They came to our concerts and talked to our students, staff, faculty, and community board members, in order to really understand what this new structure would mean to us, and to understand the awesome opportunity it represented.** *. They taught us about architecture and construction! And during construction, they were here - on the site- and tactfully defended us, as users, on those occasions when it seemed the construction company was taking shortcuts or wanting to stray from the program even slightly. Very importantly, their relationship with the builder, CF Jordan, remained positive from beginning to end. The building was completed as designed, on time, and on budget! That has rarely happened on this campus."* **- Jory Hancock - Director of Dance**

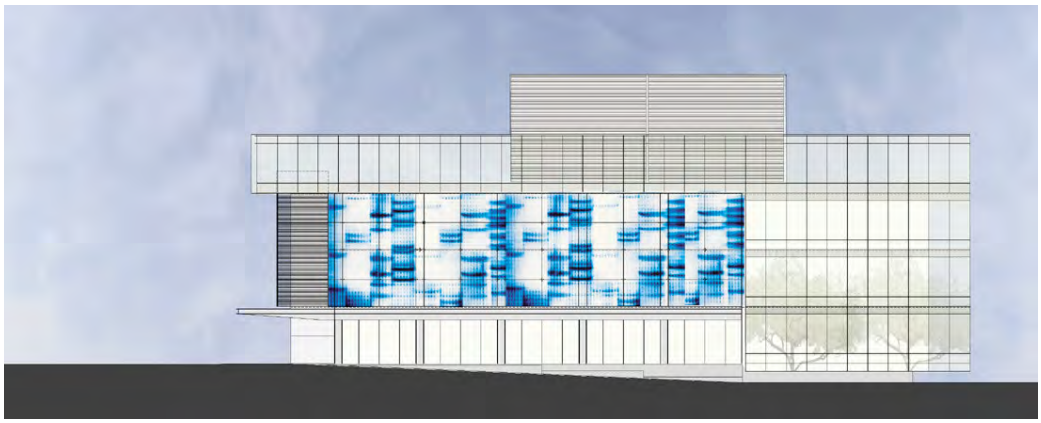
Our CM @ Risk Delivery approach to both maintain a successful relationship and ensure the quality of the final project is illustrated in our overlapping expert diagram. The CM@R is a critical member of the team. It is vital that the team inspire each other. When the contractors fully engage a project and are included as constructive and valuable members of the team early in the process, the master-craftsman emerges. Donna Barry's and Jose Pombo's experience on the Stevie Eller Dance Theatre exemplifies this. We engaged all of the subcontractors on the project with the design intent and stories and they took it to the next level. The design team worked closely with the subcontractors, particularly with the Steel Subcontractor, Steelcon, Inc. to model the project in X-steel to determine the steel framework prior to fabrication and construction. Flattened elevations for each of the scrim panels with xyz coordinates were part of the construction documents and were translated 3 dimensionally in X Steel during the shop drawing phase of the project.

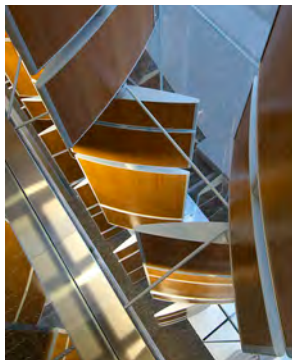
QUOTE: *"I have known Jose Pombo and Donna Barry since we attended the first preconstruction meeting for the Stevie Eller Dance Theatre. This exceptional and unusual project is the display feature at the east entrance for the University of Arizona. The drawings that they generated for the project were outstanding and they helped this project proceed on schedule. We worked closely with Donna and Jose to get timely and well-conceived answers to our questions. They are some of the best architects we have seen in our 30 years of experience in the valley."* **- Jeff Thomas VP for Steelcon Inc.** (Steel subcontractor to CF Jordan - Contractor for the Stevie Eller Dance Theatre.)

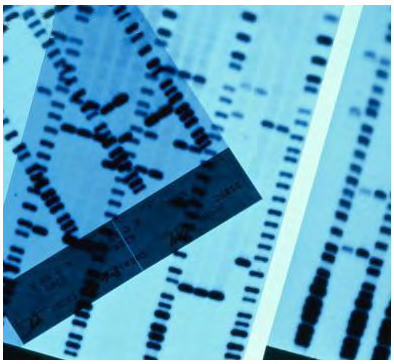
QUOTE *"In the process of designing the project, Jose and Donna immersed themselves into the Dance program and learned all they could glean about dance as an art of both performance and athleticism; as an education to both students and public; and as a science of human ability, form and function. This dedication to learning and listening was followed by understanding and teaching.* **They and their team completely exposed the design process to all involved** which yielded the *best of all possible products... a building that functions precisely as it needed to, facility users who are invested in their new building, pride in the accomplishment and an award winning gem of a building that is really all about motion and art itself. I believe they helped to start a micro trend in architecture at the University that stretched the notions of being uniquely and equally sensitive to the contexts of both time and place."* **- Peter Dourlein -Associate Director Facilities Management**











The interior wood shade panels inside the glass wall at the Biodesign Institute are manipulated by passers by and change throughout the day. They replicate the DNA sequencing gel.

EXAMPLE: The Biodesign Institute's two buildings were designed and built from start to finish with active participation from the owner, the architect/engineer and the contractor (CM@R) as a team. This team effort had one goal- to manage the cost and schedule while achieving the highest in quality and scope of the work. To do this, the whole team was formed early on and began cost and scope benchmarking exercises that, as the design developed, turned into conceptual cost estimates, detailed cost estimates and eventually into bid packages. As the design concept developed, the contractor brought several subcontractors on board to provide design assist in areas such as mechanical, electrical, plumbing, as well as curtainwall. These subcontractors worked alongside the design team from Schematic Design through CD's, providing feedback on constructability and cost, so that there would be no surprises in the costs of major building components. Even though the escalation of steel costs affected the cost to procure building materials, this risk was identified and managed within the project budget because of the early establishment of the teamwork process. Donna Barry and Jose Pombo were integral to the design team while employed by another firm. (Ref section 2 for additional information: Sundt and DPR were the CM@R's on this project)

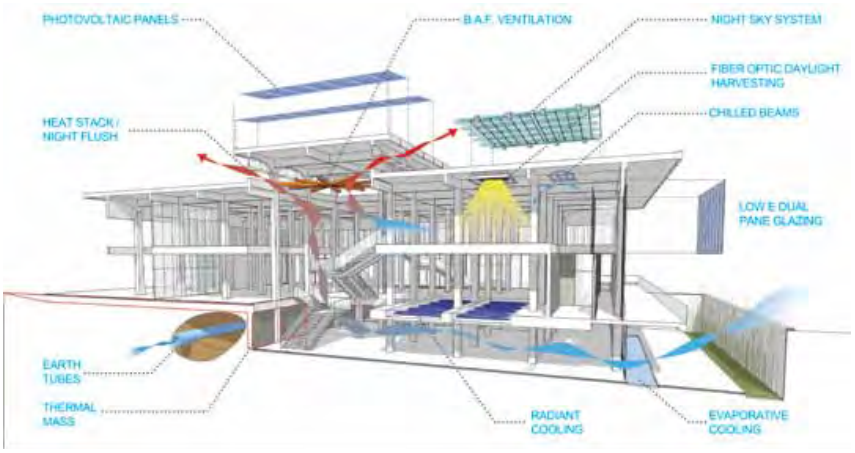
EXAMPLE: Jose Pombo worked successfully with DPR Construction on Glendale Community College Life Science Building as a "Proactive Partnership" that looked ahead to identify project phasing issues and market conditions that would affect cost and schedule. The design/CM@R team evaluated major utilities that extended to the site in an effort to coordinate their construction with breaks in the campus schedule. Glendale Community College had requested that all site utility work should be completed in a manner so as not to disturb faculty and students. The Team worked with SRP to complete Partial GMP No. 1 Primary Electric documents in time to bid and extend primary power to the site over the Holiday break before students arrived for classes in January. DPR Construction indicated that Mill orders for steel were running 36-week lead times. In order to ensure the building was completed on schedule, the Team accelerated the design schedule in order to issue Partial GMP No. 2 documents for steel. Bids were collected from three major steel subcontractors, a GMP was approved, and shop drawing documentation process began at the end of DD. GCC Life Science Users and the design team worked together to identify copper as a natural material that fit within the existing campus context. Market conditions were beginning to demonstrate that copper prices were going to escalate in 2007 at a rate that could exceed the escalation in 2006. Waiting to purchase copper at the end of the Bidding Phase meant the project might be burdened by a 200% increase. The Team completed Partial GMP No. 3 documents for Exterior Skin in the middle of Construction Documents in time to get board approval and purchase copper before it spiked.

Weekly meetings with the CMAR, Owner/User and Design Team will be essential to the exchange of information. We have maintained relationships with ALL of the owners, contractors and subcontractors with whom we have worked. The practices and procedures described and illustrated in this proposal are our means and methods to create an environment where everyone wins.

In summary we will:

- Schedule a consultant coordination meeting with the contractor upon notice to proceed. Teamwork starts with communication from day one.
- Examine the schedule and establish a project work plan that includes all milestones, dates, review times, for the design team, consultants, and construction.
- Set up communication channels for ease of information transfer (as noted above).
- Design to budget, NOT adjust budget to design
- Carefully monitor all phases of the project through rigorous quality control.
- Deliver a project that embodies the College of Engineering's vision for the new Engineering Innovation Building.
- Create an environment that is respectful and FUN!

We consider architecture as building science. We approach all of our projects systematically and we utilize new tools like whole building energy simulation, daylight simulation and physical modeling, thermal comfort prediction, and computational fluid dynamics modeling as part of our programming and design process. **We have these tools in house and we are fluent with them. These tools allow us to explore alternatives faster and allow us to demonstrate issues to help expedite the decision-making process.**



College of the desert sustainable strategies outcome from eco-charrette conducted by HMC arch lab during Conceptual design phase.

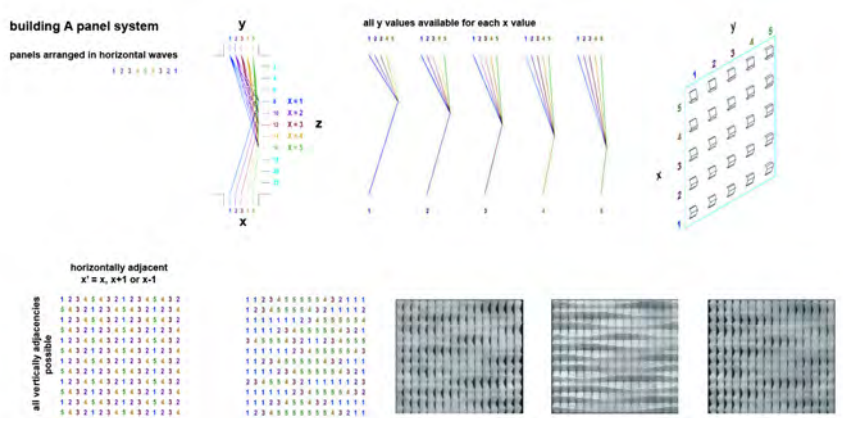
Optimum project success is largely determined long before construction begins – in programming and the early phases of design with the CM@R. We review and evaluate alternate construction methods. Invention, innovation and finding overlapping functions within a space all aid this process. Our team will bring the University of Arizona and the College of Engineering a clear respect for schedule accuracy, budget fidelity and cost control. The importance, complexity and schedule of this project demand that a dynamic process be efficient and fluid. As we explore alternative design solutions we will identify, isolate and create action plans for potential risks to the project success. Managing budgets in this volatile economic environment involves several components including an in depth knowledge of the market place.

Assuring that the budget aligns with construction costing trends and escalation will be essential in the early phases of the project. System and material costs can vary dramatically based on project requirements, current and future market conditions and the design skill of the engineers, designers and subcontractor team. It is critical that the programming and early phases of the design phase define these requirements and establish a budget that will allow those requirements to be met. This is the foundation to design to budget and not budget to a design.

Setting contingencies on REAL data rather than on a percentage basis is part of the expertise our team brings to the University of Arizona and the College of Engineering. Our cost estimating team and risk assessor's, employ a structured and systematic process to identify, assess, manage and communicate the effect of risks and opportunities in the project plan. We will prepare a cost model and project estimate and assess the project critical path schedule in preparation for a facilitated workshop comprising key members of the owner/user representatives, design team, construction team, key sub-contractors, and stakeholders.

This workshop, has proven to be the most effective method for teams to communicate their concerns and ideas, and evolve their own understanding of potential pitfalls or opportunities, which party is best equipped to own each risk, how much contingency should be set aside, and what steps should be taken to ensure achievement of project goals. **Experience Example Cost Control Strategy:** The building envelopes for the two largest buildings at Arizona Western College Campus were originally designed as pre-cast concrete panels. During the design development phase of the project, there was a national shortage of cement. Led by Jose Pombo and Donna Barry, the project was redesigned to substitute lightweight copper wall panels for the concrete to meet budget constraints. When the project went out to bid, the price of copper on the international market spiked from $1.80 per pound to $4.80 per pound in just a few weeks. Jose Pombo and Donna Barry met with the contractor and reviewed the probable construction schedule, met with local suppliers and manufacturers and determined that the contractor would not be purchasing the copper until 12 months after the bids were due. It was clear that with the current volatile metals market, the contractor would be 'gambling', essentially betting on the future price of copper. After reviewing the options with the owner, it was decided that it was in their best interest to take this unknown out of the contractor's bid. An allowance covering the cost of the raw copper rolls was added to the project and backed by moving budget dollars into an owner controlled contingency fund. This allowed the owner the ability to benefit from the anticipated downward price corrections expected in the copper futures market instead of the contractor.

▼ *Arizona Western College building skin panel system drawings.*



Experience Example Cost Control Strategy: Experienced with the California State University (CSU) CM@R delivery method, the design team is enthusiastic about the opportunity to engage the construction leadership team in the design process. HMC is currently completing the Design Development documents for the new Academic II Building at CSU Monterey Bay with Rudolph and Sletten as the CM@R. This project is one of the first projects for CSU under this contract method and it reflects the team's commitment to collaboration throughout all phases of the project.

This collaborative team organization has shown added value since the early planning stages, especially in schedule development, milestone validation and a clearer understanding of the initial project goals. The CM@R partner has been involved in all the pull planning exercises with the design team and the owner.

Photo from the CSU Monterey Bay, Academic II Classroom Building, "Big Room" and Pull Planning meetings.

Through this partnership, the team has been able to meet the design deadlines required by the CSU system and complete the design phases at an accelerated schedule which was also requested by the University.

Another one of the successful results of this partnership is the ability to collaborate through the use of BIM technologies. The CM@R is able to see our BIM model and explore innovations such as pre-fabrication of portions of the project that could significantly reduce the construction schedule and by verifying constructability in all aspects of the project.

Another key advantage of this partnership is the ability to actively pursue HMC's commitment to provide our clients with the best project within the target budget. Using a proactive budget management approach, the CM@R has been developing the construction cost estimates based on the goals of the project during schematic design and design development. In balancing the costs, schedule, quality and scope of the project, decisions have been made to modify the design concept instead of having to spend a considerable amount of time, effort and money re-designing or modifying completed construction documents. A good example was the decision on what structural system to use. Three options were analyzed: moment frame, cast-in-place concrete, and brace frames. HMC and R&S developed parallel cost models for each one of these options. In conjunction with the University, it was decided to go with the moment frame steel system because it provided the desired design and building image, most economical construction schedule, and the highest construction quality.

During the project, adjustments have been made to the budget and bid alternates have already been identified to provide the best value to the University. This proactive cost input and collaboration has helped facilitate design decisions along the process.

Design development rendering of the front entrance of the new Academic II Building

Our team will track estimates from Program Verification through Guaranteed Maximum Pricing (GMP). By establishing realistic contingencies through the Risk Assessment workshops and by thorough tracking of estimates, there are few to no change orders between GMP and subcontractor buy out. Establishing strong relationships with members of the design/CM@R team, owner representatives and users is critical to the success of the CM@R delivery method. Too often, general contractors in a CM@R process view the design as a series of line item costs without viewing the project as a holistic series of systems. You can't just change the HVAC Unit to save money on a spreadsheet without looking at the window system or the acoustical requirements of a space. The design of the HVAC unit is based on a series of design parameters beyond air change requirements.

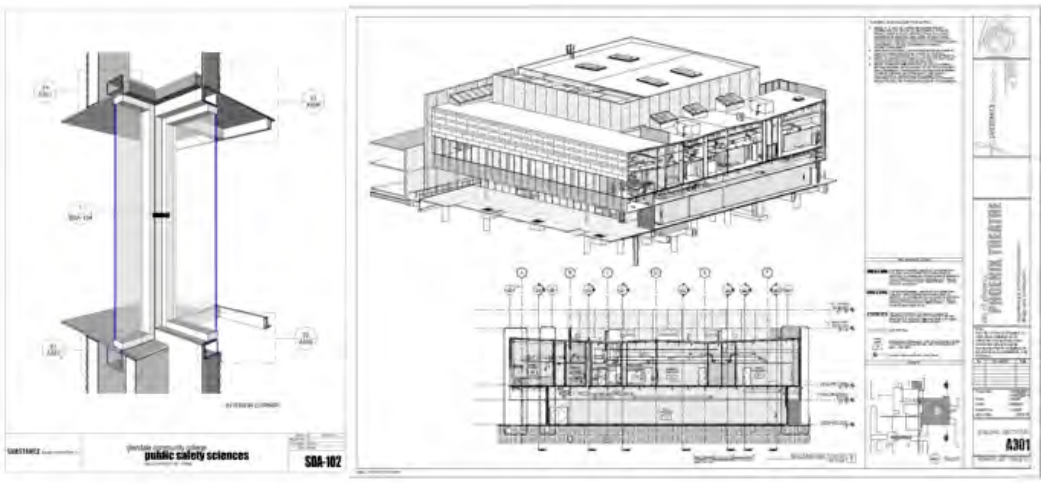
We employ a 'ripple matrix' to track design parameters that effect specific systems. This matrix is devised by our design/CM@R team early in the design process. It includes all building systems and how they interact with each other.

The speed of the building process is directly related to the organization (design) of the parts of the architecture. We are proponents of a systems approach to the design of this project. The building can be designed as an organization of systems, using flexible lab modules and distribution components in a framework surrounding fixed core elements. The more repetitive these modules and components are, the faster the design and construction can be. Specialty labs can be designed within this systems framework, as the need arises. A systems approach to design is holistic and inspires the master-craftsman in both design and construction at all scales. **Research Laboratories are especially complex as they have many components that must be systematically managed.**

On certain projects, coordinating systems takes on an exponential complexity that Building Information Modeling (BIM) allows us to manage efficiently. We 'build' the systems in three dimensions, using actual products and specifications to create the system components. We coordinate them in the model as a preview of how they will be built during construction. BIM also allows us to isolate and navigate each of these building systems one, two, or all at a time, to fully manage the way they relate to one another. The inherent value of utilizing BIM from a project's inception is in the extensive coordination and scheduling capabilities built in, real time, into the model. End results?... Time and money saved and no surprises!

ALL of our projects utilize BIM. Some subcontractors lag behind the CM@R contractors in utilizing BIM as do some engineering consulting firms behind the architects. The most successful projects are led by CM@ Risk partners that have training programs for their subcontractors and require BIM for submittals and shop drawings and by architects that insist that their consulting engineers utilize BIM during the design process. We look forward to the opportunity to work with a fully vested construction team in BIM. Our design and consultant team is fully vested in BIM. Our construction documents often include 3D detailing for clarity at corners where materials transition. RFI's in the field will be issued, logged and updated in Revit so at the end of the project a fully as-built set of drawings is documented simultaneously with construction.

EXAMPLE: BIM allows us to provide 3D detailing in our construction documents. It also allows us to show our building sections in 3D for more complex systems coordination. Contractors and Subcontractors can SEE the design intent on paper before construction sequencing begins.



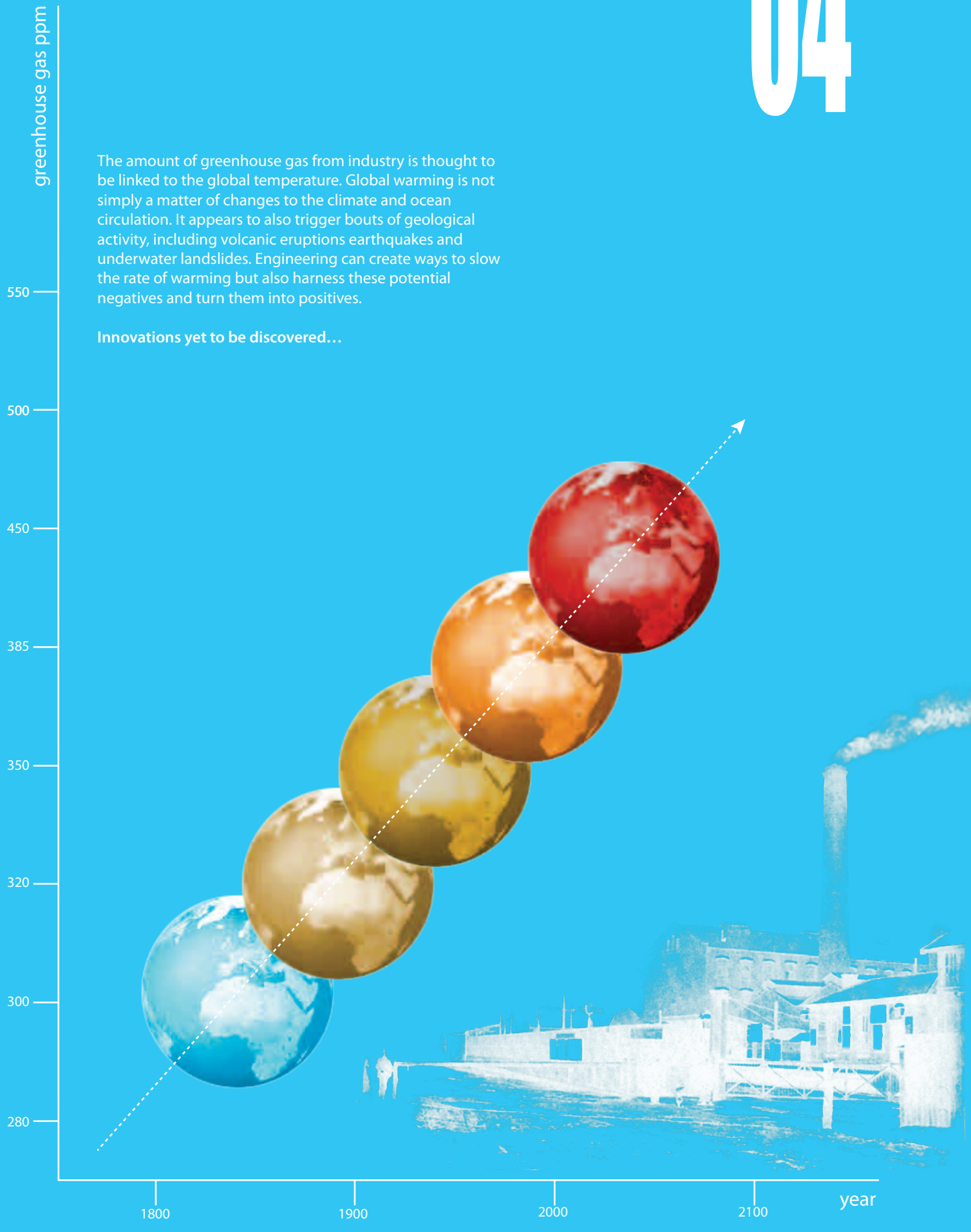
EXAMPLE Building Information Modeling output: public safety science supplemental information to assist subcontractors visualize intersections and phoenix theatre construction coordination drawings showing systems in both 2 and 3 Dimensions

QUALITY CONTROLS: Our quality control and assurance occurs at all phases of design. Our coordination meetings are conducted at milestones in each phase with an eye for inconsistencies errors and omissions between and within design disciplines. It is a construction document review system that specifically addresses points of interface between building systems in order to check for coordination between these different disciplines. We believe that coordination and integration of all systems is essential to this building type. Our team will undergo a series of intensive coordination sessions with our consultants and the CM@Risk subcontractors to assure that our documents are fully coordinated, limiting RFI's and the potential for costly change orders in the field. A large and all inclusive coordination session will occur with the University's engineers in Planning and Facilities prior to bidding.

We believe that a project is not fully realized until it is built. Our construction documentation is done with an eye and mind for '**making**' not solely for '**production**'. Many times architects cut corners by pulling solutions from the drawer. YOUR project is unique and we have no preconceived notions of what the building should be or look like. This is discovered and studied through discussions with YOU!

The amount of greenhouse gas from industry is thought to be linked to the global temperature. Global warming is not simply a matter of changes to the climate and ocean circulation. It appears to also trigger bouts of geological activity, including volcanic eruptions earthquakes and underwater landslides. Engineering can create ways to slow the rate of warming but also harness these potential negatives and turn them into positives.

Innovations yet to be discovered…



Section 4
Responsiveness, Local Knowledge, & Experience

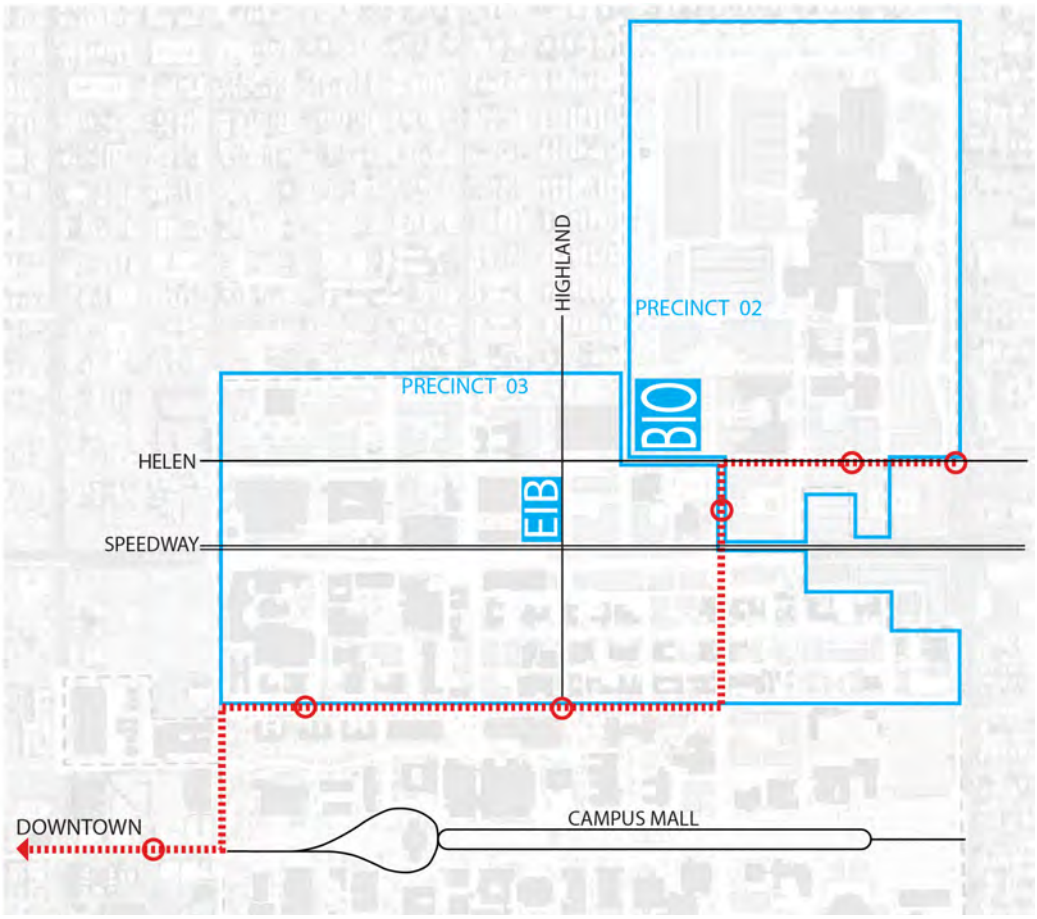
HMC Architects recently celebrated our 72 year anniversary and has made a long term commitment to Arizona by opening an office in Phoenix and further doubled down by merging with Substance Design Consortium. HMC+Substance Design is committed to providing timely and responsive service to the project and the University. As our resumes and project experience shows, our design team has successfully completed several notable projects at the University of Arizona. Our team is VERY familiar with your campus and this experience will be invaluable to the successful execution of the Engineering Innovation Building. James Woolum led the interior design of the Thomas W. Keating and Medical Research Building and the Chemistry Sciences Building prior to joining HMC+Substance Design. Donna Barry led the design and execution of the internationally recognized Stevie Eller Dance Theatre and the James E Rogers College of Law transformation with Jose Pombo while part of the leadership of another firm prior to merging with HMC+Substance Design.

Our consulting engineering team also has extensive experience at the University of Arizona. We are all familiar with the Campus Master-Plan and the UA Design Specification Standards (DSS) and subsequent updates to both. We are familiar with all of the University of Arizona review processes including Facilities Review Coordination meetings and presentations/conversations with the PADRAC committee at schematic and design development milestones.

As described in the CCP, southern Arizona is considered to have an "overheated" climate, meaning that on a human comfort scale it feels too warm more often than too cool. As the climate is also dry, significant micro-climate modification is feasible using shade, air flow, cooling through evapotranspiration and by varying aspect exposure. As the University setting is one in which students, staff and faculty make use of outdoor space and move about as pedestrians, successful facilities employ all of these strategies. Morning sun in winter, north facing shade in warm seasons, self-shaded courtyards of appropriate orientation and proportion, Bosques of shade trees, breezeways, and similar architectural features to focus air movement are examples of climatically-sensitive design responses.

The new EIB is located in Precinct 3, and defined in the 2009 campus Master Plan update as part of the main campus. The new Bioscience Research Building site is located in Precinct 2, part of the Medical Campus. These two projects, although belonging to two separate Colleges and disciplines, are linked, not only by proximity, but through common activities – RESEARCH. Both projects will be connected to downtown Tucson through the Modern Street Car Project currently under construction. There is a unique opportunity for the design teams to work together in the development of these two projects. For example, it would be interesting to consider and explore the potential opportunities to share high performance sustainable infrastructure and integrated on-site energy production. Irrigation systems can be designed to support the landscape solely on harvested water (roof and site storm water runoff, HVAC condensate) using passive and active technologies.

Precinct Diagram and Tucson Modern Street Car route.



The University of Arizona has a unique architectural signature in Tucson. Signature red-brick structures by architect Roy Place early on helped define the campus's appearance and are exemplified in the Historic district of campus and Old Main at the end of the Campus Mall. The strong aesthetic creates the distinct collegiate impression in Tucson. The College of Engineering has a strong presence and visibility on Speedway in the AME building. The new Engineering Innovation Building site adjacent to the AME building creates great opportunities to refine and continue the connections between the existing open spaces from the James E Rogers College of Law and the AME courtyard to the new EIB. Since the building footprint is not expected to use all of the available space between AME and the Highland Ave. underpass, some site development planning ideas to consider include: a graceful and accessible link to Highland Avenue underpass and associated refinishing of a segment of the underpass; historic olive trees relocated by the Student Union project to the north end of the Highland Underpass; relocation of emergency vehicle staging currently at the SW corner of the surface parking lot that is this project's site; and an extension of the Speedway edge landscape, including passive water harvesting and inclusion of a City of Tucson bus stop.

We proposed some key factors that will ensure immediate responsiveness.

- HMC+Substance Design is a completely mobile office. Working beyond one's office is commonplace in today's architecture/engineering/construction (AEC) marketplace. Each team member equipped to work remotely at any time. However, the key to a truly successful project is communication, integration, and COMMUNICATION. All members of the project team will be readily available via phone, email, or face-to-face for the life of the project. We address each challenge head-on and encourage open and ongoing dialogue between the team and project stakeholders to develop a program, design and construct a project that exceeds expectations and becomes a source of pride.

- ALL of our team members are Arizona firms except our specialty Lab Planning Consultant, internationally acclaimed Jacobs Consultancy. Our key engineering consultants are Tucson firms. They are all fully invested in utilizing Building Information Modeling (BIM).

- Our professionals will commit to occupying office space full-time, in Tucson, within minutes of the site during the collaborative peaks of project development. We will establish a full-time, Tucson 'war room' that will be maintained starting with early programming through project close-out.

- Our team members are fully conversant in all electronic communication methods and platforms.

- We will support the local Tucson economy by teaming with a local architectural firm as a sub-consulting firm to assist in all phases of design, production and construction administration. Subject to rules of procurement, we will work with the University on selection, timing and contracting with a qualified local firm.

Intense collaboration and just plain heads-down work

Project design phases move through very intense periods of engagement with stakeholders and design team participants in order to collect input, brainstorm, and capture the best ideas and less intense periods of engagement when the team is 'at the drawing board' documenting information and ideas and pushing project development to the next level. By in large, our team members are physically located in close proximity to the University of Arizona and will be available on site during all critical stages of engagement with the university's project management team. Those consultant team members located out of state are committed to being physically on site for all scheduled meetings and presentations. Any air travel will be scheduled to arrive the evening prior to any meeting to avoid delays and ensure prompt attentive engagement.

The intense periods of collaborative engagement are exciting stages in a projects development and whether the subject matter and goals of these sessions necessitate scheduling for hours, days or weeks, regardless of primary office location; **ALL TEAM MEMBERS WILL BE PRESENT AND FULLY ENGAGED.**

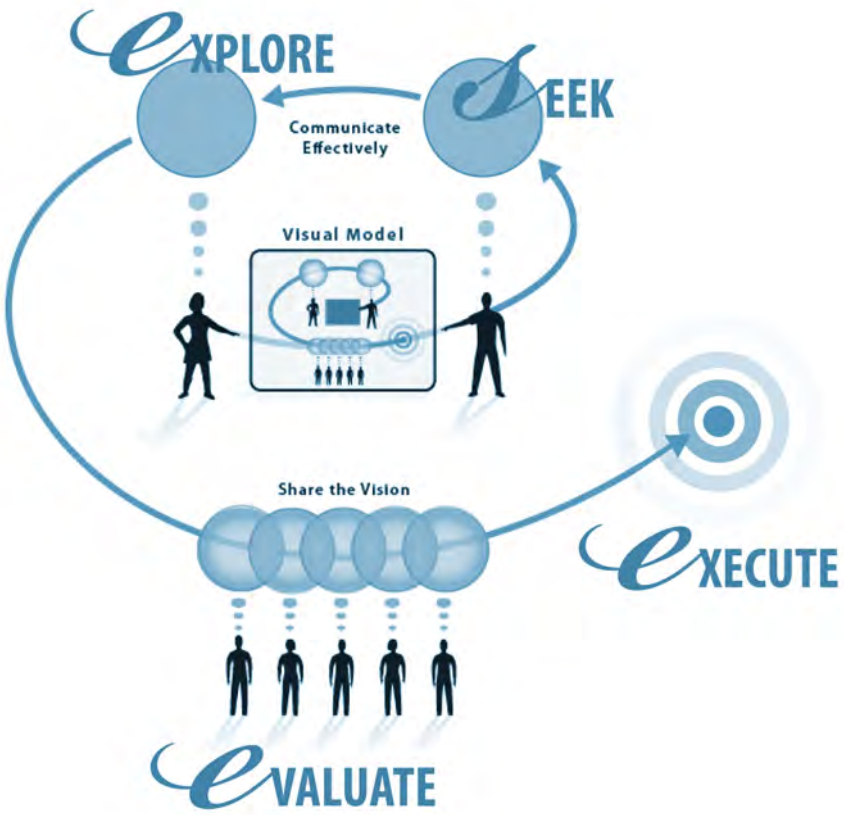
QUOTE: *"In a design and construction world that simply accepts slow communications between Architects and Contractors as a given, Donna and Jose blew that paradigm 'out of the water' on our project. Regardless of being located in Phoenix, Donna visited the project regularly and was acutely aware of the progress of the work and where she could help expedite the process. RFI's rarely sat unanswered longer than a few days and on many occasions at our request, Donna and Jose turned around shop drawings nearly overnight to keep the aggressive schedule intact. I have been associated with projects both smaller and larger than the Snow College Performing Arts Center, but I have never encountered a design team more responsive than Donna and Jose.*

Donna and Jose not only assembled the drawings, but performed the construction administration role as well - rather than simply passing that role onto someone else in their firm. This was a terrific advantage for the project, and the same passion that existed during the Design Phase in establishing the original building concept spilled over into the Construction Phase. They took the success of the project personally and their actions demonstrated this personal commitment.

Despite the compressed design schedule, overall there were very few contradictions or discrepancies in the drawings that resulted in change orders to the Owner. The experience of working with Donna Barry and Jose Pombo became a special highlight of my career." **- Brian Hobbs -Project Manager, Layton Construction – Construction Manager – Eccles Performing Arts Center, Snow College Ephraim Utah.**

Specific Collaborative Criteria

We will ensure that the project and University are thoroughly supported from the earliest planning stages through post-construction with our commitment to fully staff the project and maintain the core team as indicated in the Project Management Section 3 of this RFQ.

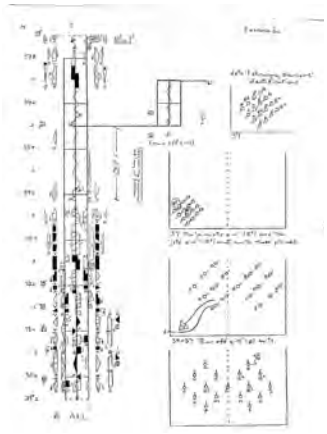


Our approach to working cooperatively and responsively with the many associated stakeholders that are interested in University construction projects is embedded in our design and management process.

It is an **iterative** process and it has feedback loops built in to include valuable input. We will collect data and use that data to explore creative solutions and options. These options and potential solutions are presented graphically in both 2 dimensions and 3 dimensions and evaluated by the stakeholders, steering committees, city representatives, neighborhood groups, campus design review bodies and numerous regulatory agencies. Evaluating options often leads to hybrid solutions that are further explored as part of the iterative process. We SEEK information – We EXPLORE and evaluate options and we EXECUTE decisions based on evaluations and reviews reached through consensus. It is also important to note that the 'idea vignettes' created during this process can be used for future fundraising, re-branding and PR opportunities.

EXAMPLE: The programming, design and execution of the University of Arizona James E Rogers Law Library transformation was led by Donna Barry as the architect of record while principal of design at Gould Evans. Animated 'Idea vignettes' were created during the design process to illustrate how the new building could be used for collaboration, for study, for daily student events and for evening Alumni events. The same 'idea vignettes' used during planning committee and user group meetings became critical fundraising components for the College's Capital Campaign. Donna Barry traveled with former Dean Toni Massaro to numerous Alumni and Capital Campaign events to raise interest in funding the new project. This process successfully raised $6 million and allowed for all funding to be in place ahead of schedule and for the project to be constructed on time.. See section 1 for additional information.

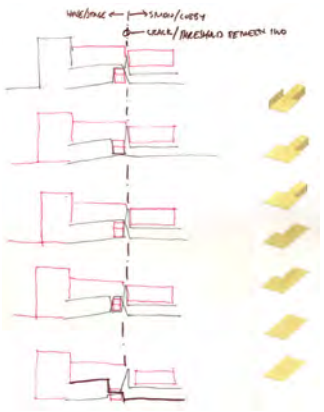
We have a **three pronged approach to context-sensitive design** to address the unique challenges and opportunities that this project which are in immediate proximity to other facilities of distinctive character are present. It includes an in-depth immersion into the story of the place, program and process. It also includes a thoughtful analysis and exploration of the potential opportunities to augment the campus, culture and community by embedding these 'stories' into the architecture. This approach is particularly applicable to your project and we have augmented our team accordingly to: 1) uncover the subject of the story; 2) display the object of the story; 3) embed stories of the subject and object into the architecture.



EXAMPLE: The programming, design and execution of the University of Arizona Stevie Eller Dance Theatre was led by Donna Barry as the architect of record while principal of design at Gould Evans and Jose Pombo. As a gateway building on campus and the intersection between academic and public performance, the woven wire fabric on the east elevation and the black plaster that was engulfed the house and stage volumes was controversial as it did not immediately comply with the red brick signature on campus. Donna and Jose created descriptive diagrams and sectional models that built an objective argument about the 'story' of the building.

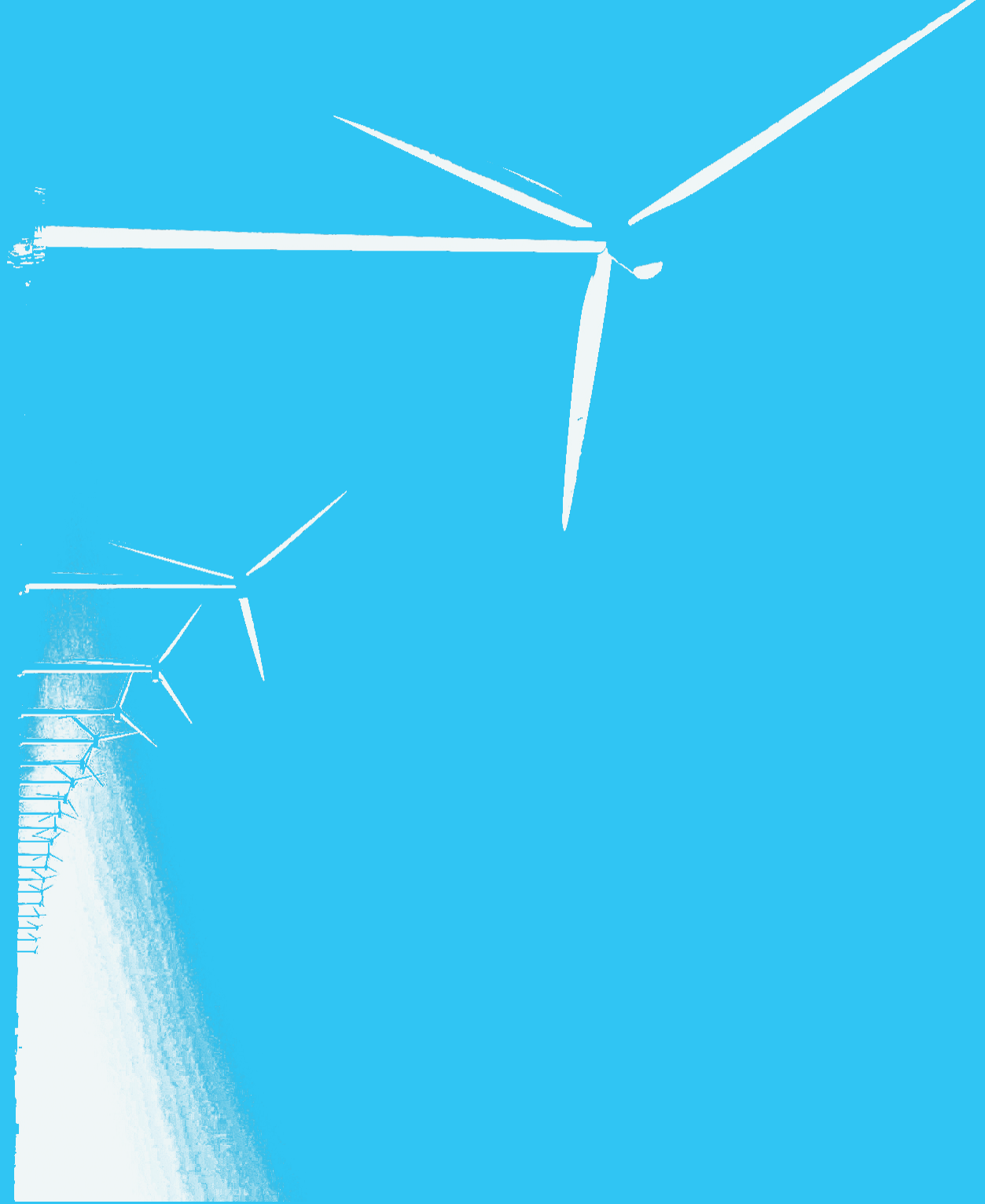
During the design process for the Stevie Eller Dance Theatre, the faculty taught us about dance, and we taught them about structure. We asked the dancers about labanotation and they taught us to read dance. We learned about and read notes that taught us how far to jump, in which direction to point our arms, and how to position our toes in flight. We asked the client to tell us about Serenade, Ballanchine's first ballet written for the students of the American Ballet. We contacted the Dance Notation Bureau and the Balanchine Foundation in New York and we acquired the labanotation and the score for Serenade. We overlaid the "plans" for beginning and ending measures of Serenade and created a matrix from which emerged a "grid" of tilted columns. Female dance positions were 6" columns, while male dance positions became 8" columns. Each tilted 5 degrees in varied directions to create the field of columns supporting the glass encased performance rehearsal dance studio on the floor above. How fitting that Ballanchine's first American ballet written for students, now serves as the structure for University of Arizona's dance students. The faculty taught us about dance, and we taught them about structure; together we created "dancing columns".

We immersed ourselves in the subject of movement and its historical precedents. The experience of attending a performance moves beyond the theater. Buying a gown, knotting your bow tie, and the dinner prior, all serve as experiential moments of approaching the theater. In the same way, the inside experience should move and unfold to become the outside experience. We studied Marey's sequential photography of how the body moves in space, and Duchamp's overlapped moving forms in "Nude Descending a Staircase". We studied how inside volumes become outside surfaces through topology and we introduced the idea of a three-dimensional Mobius Strip. These were the form generating devices for the inside and the outside of the building. The soft upholstered space of the auditorium is a volume that rolls and moves to become an exterior, inflected form. The woven wire mesh fabric scrim on the east elevation creates multiple readings. We presented these ideas in full to the stakeholders.



The story of the subject (dance and movement) and the object (columns and labanotation) are embedded in the architecture. When the design of a building is collaborative and the process of design is open, team members and the community have ownership. The conversation becomes objective not subjective.

Imagine this process for the new Engineering Innovation Building. A place where new materials and methods are displayed; where the customs and culture of the College of Engineering are exemplified; where experimental teams and modeling/simulation teams interface; where high school students visit and decide at the moment they cross the threshold that they want to be an engineer and change the world.



SECTION 05
APPENDIX

Appendix
References

/ Thomas W. Keating Bioresearch Building and Medical Research Building, University of Arizona

Reference for James Woolum

Facilities Representative:
May Carr
Sr. Architect
Planning, Design & Construction
University of Arizona
520.626.7410
carrm@email.arizona.edu

/ Chemical Sciences Building, University of Arizona

Reference for James Woolum

Facilities Representative:
May Carr
Sr. Architect
Planning, Design & Construction
University of Arizona
520.626.7410
carrm@email.arizona.edu

/ Stevie Eller Dance Theatre, University of Arizona

References for Donna Barry and Jose Pombo

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/ Scottsdale Art Museum, Scottsdale Cultural Council

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Reference for James Woolum

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/ New Tower, Torrance Memorial Medical Center

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/ Women's Health Center, Dignity Health (CHW)

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Professional Registration

/ HMC+Substance Design

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David De Valeria AIA, LEED AP
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Expires: 09/13/2013

/ AEI

Steven Yanke, PE, LEED AP
Principal, Project Manager
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Samuel Crum, PE, LEED AP
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/ Holben, Martin & White

Thomas Griffis, PE
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/ Wood Patel

Michael Young, PE LEED GA
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Expires: 09/30/2013

/ Wheat Scharf

Eric Scharf
Landscape Architect
AZ #17697
Expires: 06/30/2013

The University of Arizona's
Engineering Innovation Building
UA Project No. 05-8623

Conflict of Interest Certification Form

Failure to provide a valid signature affirming the stipulations required by the Certification shall result in the rejection of the Statement of Qualifications. Signing the Certification with a false statement shall void the SOQ, and may subject the Respondent to legal remedies provided by law.

The undersigned certifies that to the best of his/her knowledge: (check one)

(X) There is no officer or employee of The University of Arizona who has, or whose relative has, a substantial interest in any Contract award subsequent to this RFQ.

( ) The names of any and all public officers or employees or The University of Arizona who have, or whose relative has, a substantial interest in any contract award subsequent to this RFQ are identified by name as part of this submittal.

The undersigned certifies that his/her Firm and/or Team: (check one)

( ) IS

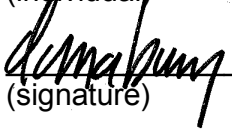
(X) IS NOT

currently debarred, suspended, or proposed for debarment by any Federal entity. The undersigned agrees to notify the University of any change in this status, should one occur, until such time as an award has been made under this procurement action.

The undersigned certifies that making the submittal did not involve collusion or other anti-competitive practices. The Respondent has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with this Statement of Qualifications.

HMC+Substance Design
(firm)

Donna Barry, RA, Principal
(individual)


(signature)

March 7, 2012
(date)

The University of Arizona's
Engineering Innovation Building
UA Project No. 05-8623

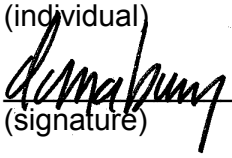
Addendum Acknowledgement Form

Failure to provide a valid signature shall result in the rejection of the Statement of Qualifications.

One	February 13, 2012
addendum number	dated
Two	February 23, 2012
addendum number	dated
addendum number	dated
addendum number	dated
addendum number	dated

HMC+Substance Design
(firm)

Donna Barry, RA, Principal
(individual)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March 7, 2012
(date)

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