NEW ONLINE SUBMISSIONS

2008-2009 International Student Design Competition

PRESERVATION AS PROVOCATION

Re-thinking Kahn's Salk Institute

INTRODUCTION

Jonas Salk commissioned the renowned Philadelphia architect Louis I Kahn to design his new Institute for Biological Studies in 1959. Together they collaborated and designed a facility uniquely suited to scientific research. This competition invites architecture students to imagine the next chapter in the life of one of America's architectural treasures, which was designated a Historic Landmark in 1991. This challenge asks designers how the preservation of these extraordinary buildings can provoke a profound rethinking of our current conventions about composition, construction, and building performance. The aim is to envision a new type of facility that would be unimaginable without the existing structures.

"Materials used are concrete, wood, marble and water. Concrete is left with exposed joints and formwork markings. Teak and glass infill in the office and common room walls....The laboratories may be characterized as the architecture of air cleanliness and area adjustability. The architecture of the oak table and the rug is that of the studies."
—Louis I. Kahn. from Heinz Ronner, with Sharad Jhaveri and Alessandro Vasella Louis I. Kahn: Complete Works 1935-74. p164.165.

MY ARCHITECT The Salk Institute for Biological Studies La Jolla, California Louis I. Kahn, Architect (Image from the film) © 20003 Louis Kahn Project, Inc.

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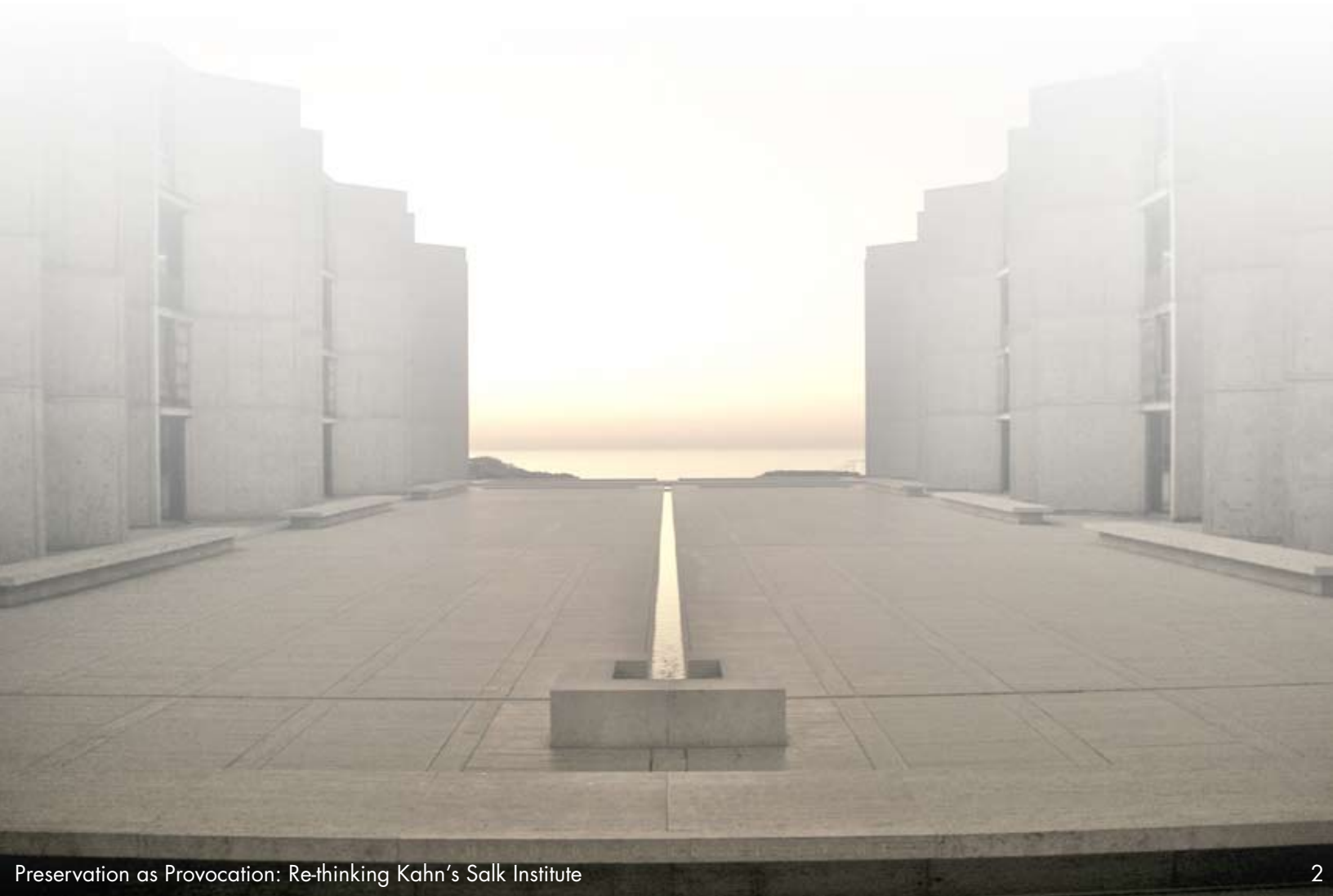


THE CHALLENGE

The Salk Institute History

The Salk Institute was established in the 1960s by Jonas Salk, M.D., the developer of the polio vaccine. His goal was to establish an institute that would explore questions about the basic principles of life. He wanted to make it possible for biologists and others to work together in a collaborative environment that would encourage them to consider the wider implications of their discoveries for the future of humanity. Salk selected the world-renowned architect Louis I. Kahn as the person who could design the facility that he envisioned.

The Salk Institute campus represents a unique blend of form and function. Overlooking the Pacific Ocean in La Jolla, California, the campus originally supported 57 faculty members and a scientific staff of more than 850 doing powerful biological research. Kahn's creation consists of two mirror-image structures that flank a grand courtyard. Each building is six stories tall. Three floors contain laboratories and the three levels above the laboratory floors provide access to utilities. These unobstructed laboratory spaces can be adapted to the ever-changing needs of science. Protruding into the courtyard are separate towers that provide space for individual professorial studies. The towers at the east end of the buildings contain heating, ventilating, and other support systems. At the west end are six floors of offices overlooking the ocean. In total, there are 29 separate structures joined together to form the Institute. The iconic open courtyard of travertine marble serves as a facade to the sky adds to the monumental nature of the campus.

You can see the impact of Kahn's architecture in the courtyard. Important to note are Kahn's imaginative use of space and his high regard for natural light. In response to Salk's request that the Institute provide a welcoming and inspiring environment for scientific research, Kahn flooded the laboratories with daylight. He built all four outer walls of the laboratory levels out of large, double-strength glass panes, producing an open, airy work environment. Local zoning codes restricted the height of the buildings so that the first two stories had to be underground. This did not, however, prevent the architect from bringing in daylight: he designed a series of light wells 40 feet long and 25 feet wide on both sides of each building to bring daylight into the lowest level.

The collaboration between Louis Kahn and Jonas Salk produced a design for a facility uniquely suited to scientific research. The next challenge was to realize it through the use of materials that could last for generations with only minimal maintenance. The materials chosen for this purpose were concrete, teak, lead, glass, and steel. The poured-in-place concrete walls create the first bold impression for visitors. Kahn actually went back to Roman times to rediscover the waterproof qualities and the warm, pinkish glow of "pozzuolanic" concrete. Once the concrete was set, he allowed no further processing of the finish—no grinding, no filling, and above all, no painting. The architect chose an unfinished look for the teak surrounding the study towers and west office windows, and he directed that no sealer or stain be applied to the teak. The building's exterior, with only minor required maintenance, today looks much as it did in the 1960s.

Kahn conceived the institute's multiple buildings as interrelated programs. All share the function to provide inspiration to the user. Kahn designed the space to inspire the researchers and provide a productive environment for scientific study.

Continued Expansion

Within the original design schemes by Louis Kahn and Jonas Salk were more than just the buildings that are in place today. They planned for an expansion of the labs, residential facilities for the scientists, and a conference center. In 1995 the East Building opened, design by Anshen + Allen Architects, which contains labs, auditorium, and multipurpose spaces.

SALK INSTITUTE THE NEXT CHAPTER

The Salk Institute has been a highly successful research facility, but the changing landscape of science requires an evolution of the campus; along with respect of the architectural and historic integrity of the site. The Institute is no longer an entity unto itself. It is surrounded by University of California San Diego, a thriving biotechnology/pharmaceutical industry, and other non-profit research institutions. The Institute's need for space has increased. The original building was anticipated to accommodate 300 people. Today, the Institute's staff members number 1,200.

Science and scientists have changed dramatically in the last four decades. Technology has evolved and now benefits from the completion of the human genome project, computerization and the use of data centers, and new methods of magnetic and optical imaging to view molecules and cells. The population of scientists is more diverse than ever. Battle for the best and brightest scientific minds has increased significantly. The Institute competes with other premier research institutions, as well as biotechnology and pharmaceutical companies, to recruit top scientists. According to the Salk Institute's Master Plan "Our successful recruitment efforts are dependent on having state-of-the-art research facilities and equipment, as well as ancillary support systems that allows our scientists to focus on their work."

Embrace the design scheme and intent of the original master plan. The design of Salk and Kahn's original master plan will be realized. The following three distinct areas of the campus will fulfill their original intent to provide a place for science, facilities to support the Institute, and amenities to support the needs of scientists and employees.

I. **Science Center** currently includes the original laboratory building and courtyard, and the East Building (constructed in 1995). The competition proposes two new facilities for the Science Center:

- New/Additional Laboratory Space – To relieve overcrowding in the existing laboratories and to house specialized equipment that is shared among scientists;
- Green Houses – To support plant biology programs.

II. **Campus Community Center** will support the science and operational needs of the Institute. This building should include a library, conference facilities (multi-purpose space for meetings), offices, dining facility/lounge, and employee exercise facilities. Due to space constraints, many employees are currently located in rented space off-campus.

III. **Residential Facilities** will provide space for scientists in residence.

Environmental Responsibilities Current social attitudes require that technology be environmentally friendly. New technologies need to be integrated to enhance the environmental responsiveness of the historic buildings without undermining Kahn's design intent and the learning experience it has to offer. Incorporate innovative and existing sustainable technology into the existing buildings in an aesthetically responsible way, and integrate sustainable design in all additions or new buildings.

PROGRAM

The following program anticipates the needs of the Salk Institute for future growth. The current 630,000 square feet of research labs and office space must be expanded along with additional facilities to support the entire campus. All expansions, additions, or new structure need to be designed to fit within the 27-acre Salk campus. The area allocations are suggestions and may be altered. Solutions should observe the total gross square footage, within a range of plus or minus ten percent. Whenever possible the historic use of an existing space should be maintained.

The Science Center

Laboratory Space		
Labs	6 Labs @ 6,000 SF each	36,000 SF
Ventilation/Mechanical Spaces	For all Lab Space vertical or horizontal	± TBD, designer
Office/Study Rooms	5 for each Lab – 30 @ 200 SF each	6,000 SF
Storage	400 SF for each Lab	2,400 SF
Secure/Hazardous Storage	200 SF for each Lab	1,200 SF
Restrooms	2 for each Lab – 12 @ 300 SF each	3,600 SF
Green Houses		
Temperate Green House		1,500 SF
Humid Green House		1,500 SF
Dry Green House		1,500 SF
Preparation/Staging Room	400 SF for each Green House	1,200 SF
Offices/Labs	3 @ 1500 SF each	4,500 SF
Employee Restroom		30 SF
Science Center Total		59,430 ± Net SF
Science Center Total Net Square Feet Plus 20% Allowance For mechanical, circulation, structure, etc.		**71,300 ± Gross SF** (71,316 ± GSF)

Campus Community Center

Conference Facilities		
Multi-purpose Hall	subdivided into 3 spaces (1000 SF each)	3,000 SF
Meeting Rooms	2 @ 1,000 SF each	2,000 SF
Conference Room	2 @ 500 SF each	1,000 SF
Pre-function Foyer		1,000 SF
Back of House/Staging Area		1,000 SF
Storage		1,500 SF
Restrooms	2 @ 400 SF each	800 SF
Offices		
Lobby/Reception		500 SF
Administration Offices	4 @ 150 SF each	600 SF
Support Offices		1,200 SF
Copy Room		150 SF
Server Room		100 SF
Storage		100 SF
Restrooms	2 @ 400 SF each	800 SF

Campus Community Center cont.

Library		
Stacks	2,500 linear feet of shelving	1,500 SF
Folios	1,920 linear feet of shelving	600 SF
Periodical	1,000 linear feet of shelving	1,050 SF
Thesis Collection	125 linear feet of shelving	200 SF
Media/DVD		200 SF
Reference Terminals	4 @ 20 SF each	80 SF
Circulation Desk		80 SF
Librarian's Office		200 SF
Store Room		300 SF
Restrooms	2 @ 100 SF each	200 SF
Dining/Faculty Lounge		
Lounge		1,500 SF
Kitchen		1,500 SF
Service Area		500 SF
Restrooms	2 @ 200 SF each	400 SF
Employee Exercise facilities		
Gym		1,000 SF
Lap Pool		1,000 SF
Locker Room	2 @ 600 SF	1,200 SF
Shower/Restrooms	2 @ 200 SF	400 SF
Community Center Total		25,660 Net SF
Community Center Total Net Square Feet Plus 20%		**30,800 Gross SF**
Allowance For mechanical, circulation, structure, etc.		(30,792 GSF)

Residential Facilities

Lobby		600 SF
Office/Reception		200 SF
Hotel Rooms	40 units (single room & bath) 400 SF each	16,000 SF
One Bedroom Apartments	20 units @ 600 SF each	12,000 SF
Two Bedroom Apartments	15 units@ 800 SF each	12,000 SF
Laundry Facilities		200 SF
Residential Total		41,000 Net SF
Residential Total Net Square Feet Plus 20%		**49,200 Gross SF**
Allowance For mechanical, circulation, structure, etc.		(49,200 GSF)

PROVIDED COMPETITION DOCUMENTATION

The competition documentation consists of this program and the following electronic files available for download at www.acsa-arch.org/competitions:

Site Plan	pdf file
Elevations	pdf file
Section	pdf file
Original drawings by Kahn	pdf file
Photographs	jpeg files

RESOURCES

Resources on Salk Institute

Friedman,D.S. "Introduction," in Ezra Stoller, *The Salk Institute*. New York: Princeton Architectural Press, 1999.

Vincent J. Scully, "Introduction", "The Salk Institute for Biological Studies." In *Louis I. Kahn: In the Realm of Architecture*. Edited by David Brownlee and David De Long. Los Angeles and New York: Museum of Contemporary Art and Rizzoli, 1991.

Great Buildings Online, 'http://www.greatbuildings.com/buildings/Salk_Institute.html.' www.greatbuildings.com

Moe, Kiel, "Extraordinary Performances at the Salk Institute for Biological Studies, In *Journal of Architectural Education* 61: 17–24.

Ronner, Heinz with Sharad Jhaveri and Alessandro Vasella, *Louis I. Kahn: Complete Works 1935-74*. p164.165

Steele, James, Salk Institute. 2002. London, UK. Phaidon Press.

The Salk Institute for Biological Studies. "Http://www.salk.edu/index.php." www.salk.edu.

Resources on Preservation, Design and Theory

Paul Byard, *The Architecture of Additions: Design and Regulation*, 1998. New York and London: W.W. Norton and Company.

Stewart Brand, *How Buildings Learn: What Happens After They're Built*, 1994. New York, NY: Viking.

Brent Brolin, *Architecture in Context: Fitting New Buildings with Old*, 1980. New York: Van Nostrand Reinhold.

Future Anterior: *Journal of Historic Preservation History, Theory, and Criticism*, Columbia University, GSAPP, www.arch.columbia.edu/futureanterior.

William J. Murtagh, *Keeping Time: The History and Theory of Preservation in America*. 1997. New York: John Wiley and Sons.

National Park Service, *Preservation Briefs*, Nos: 3 (Energy), 14 (Additions), 17 (Arch. Character), 18 (Rehab. Interiors), 32 (Accessibility), http://www.cr.nps.gov/hps/tps/briefs/presbhom.htm.

National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995), http://www.cr.nps.gov/local-law/arch_stnds_8_2.htm.

Robert E. Stipe (ed.), *A Richer Heritage - Historic Preservation in the Twenty-First Century*. 2003. Chapel Hill, NC: University of North Carolina Press, pp. 385-404.

Norman Tyler, *Historic Preservation: Introduction to its History, Principles, and Practice*. 2000. New York and London, W.W. Norton and Company, Inc.

COMPETITION GUIDELINES

Schedule

December 5 2008	Registration begins (there is no fee for registration)
February 9, 2009	Registration Deadline
June 17, 2009	Submission Deadline
June 2009	Prize winners chosen by the design jury.
Summer 2009	Publication of competition summary catalog.

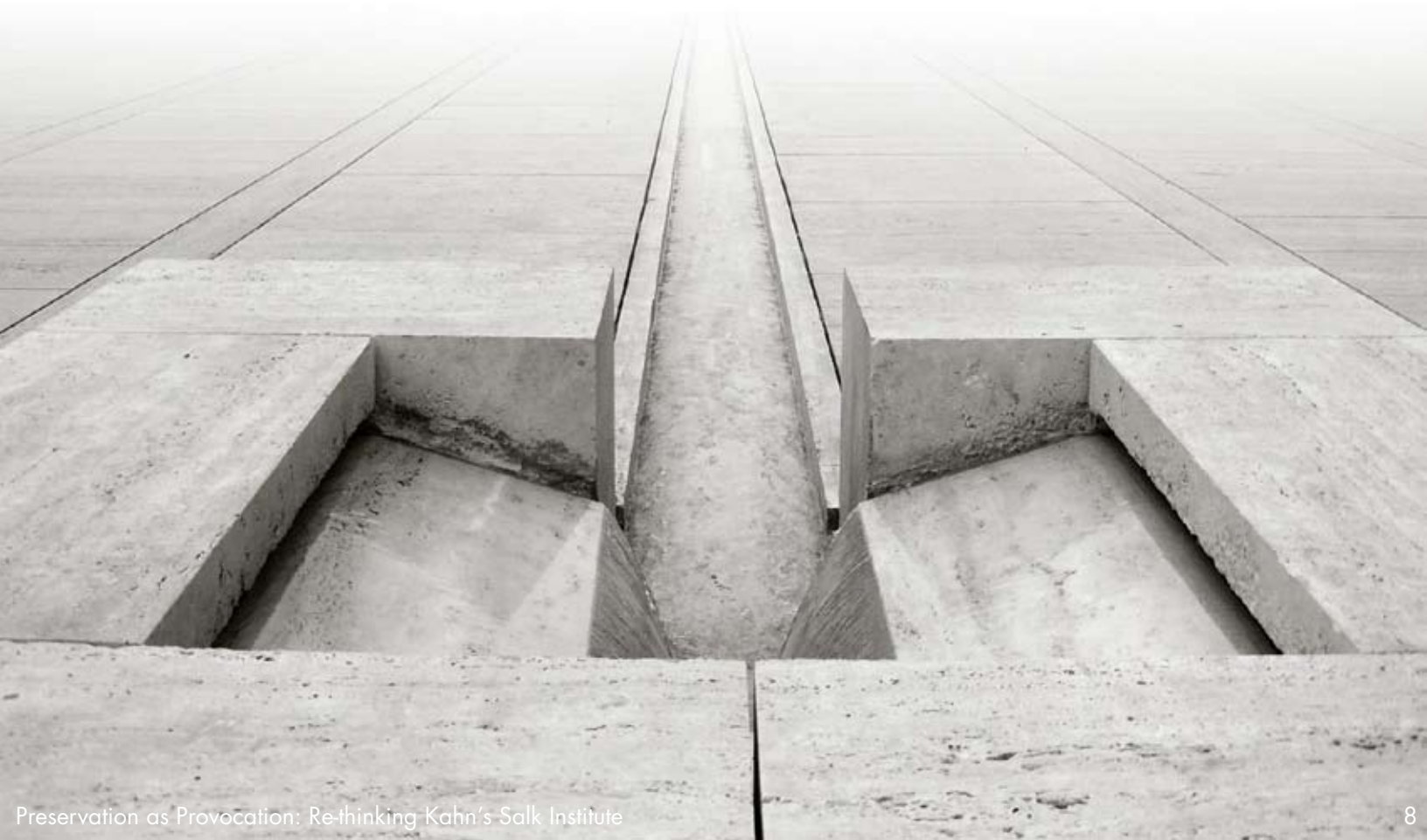
Awards

The design jury will convene in June 2009 to select winning projects and honorable mentions. Winning students, their faculty sponsors, and schools will receive cash prizes totaling $10,000, with distribution as follows:

First Prize		Second Prize		Third Prize	
Student/Team	$ 3,500	Student/Team	$ 2,250	Student/Team	$ 1,500
Faculty Sponsor	$ 1,500	Faculty Sponsor	$ 750	Faculty Sponsor	$ 500

A limited number of honorable mentions may also be awarded at the jury's discretion. Winners and their faculty sponsors will be notified of the competition results directly. A list of winning projects will be posted on the ACSA web site at www.acsaarch.org.

Prize winning submissions will be exhibited at the 2010 ACSA Annual Meeting and the 2010 AIA National Convention as well as published in a competition summary catalog.



COMPETITION GUIDELINES

Eligibility
The competition is open to upper level students (third year or above, including graduate students) from all ACSA member schools (full, candidate, and domestic or international affiliates). All student entrants are required to work under the direction of a faculty sponsor. Entries will be accepted for individual as well as team solutions. Teams must be limited to a maximum of five students. Submissions should be principally the product of work in a design studio or related class.

Registration
Faculty who wish to enroll students must complete an online Registration Form (available at www.acsa-arch.org/competitions) by February 9, 2009. Complete a form for each individual student or team of students participating. Students or teams wishing to enter the competition on their own must have a faculty sponsor, who should complete the form. There is no entry or submission fee required to participate in the competition. Each registered student and faculty sponsor will receive a confirmation email that will include information on how to upload your final submission online.

Faculty Responsibility
The administration of the competition at each institution is left to the discretion of the faculty sponsor(s) within the guidelines set forth in this document. Work on the competition should be structured over the course of one semester during the 2008–2009 academic year.

Evaluation Criteria
Each faculty sponsor is expected to develop a system to evaluate the work of the students using the criteria set forth in this program. The evaluation process should be an integral part of the design process, encouraging students to scrutinize their work in a manner similar to that of the jury. The final result of the design process will be a submission of up to four presentation boards describing the design solution. In addressing the specific issues of the design challenge, submissions must clearly demonstrate the design solution's response to the following requirements:

- Clearly express a concept for the architectonic transformation of the Salk Institute.
- Enhance the historic significance of the existing buildings and landscapes without imitating them.
- Demonstrate an articulate mastery of formal concepts and aesthetic values.
- Solve the functional requirements of the problem in a architectural manner
- Visualize innovative strategies for re-designing the program in light of ideas derived from the existing buildings, deriving the maximum potential afforded by the program.
- Create new ways to experience the Salk Institute in light of human needs and social responsibilities.
- Integrate new "green" technology into the existing buildings in an aesthetically responsible way, and exhibit a mature awareness of environmental issues.

Required Drawings
Each presentation must directly address the criteria outlined in the Design Challenge and Criteria for Judging and must include (but are not limited to) the following required drawings: site plan showing the surrounding buildings, topography, and circulation patterns; floor plans; elevations and building sections sufficient to show site context and major program elements; large scale drawing(s), either orthographic or three dimensional; a three dimensional representation in the form of either an axonometric, perspective, or model photographs, one of which should illustrate the character of the project. Submission must include:

- 4 digital boards at 20" x 20";
- at least 1 digital board that illustrate graphically or otherwise alterations to the existing Kahn structures;
- a Design Essay.

Incomplete or undocumented entries will be disqualified. All drawings should be presented at a scale appropriate to the design solution and include a graphic scale and north arrow.

COMPETITION GUIDELINES

Digital Presentation Format
Submissions must be designed on no more than four 20" x 20" digital boards. The names of student participants, their schools, or faculty sponsors, must NOT appear on the boards.

All boards are required to be uploaded through the ACSA website in Portable Document Format (PDF) or Image (JPEG) Files. Participants should keep in mind that, due to the large number of entries, preliminary review does not allow for the hanging end to end display of presentation boards. Accordingly, participants should not use text or graphics that cross over from board to board. The names of student participants, their schools, or faculty sponsors, must NOT appear on any of the submitted material.

The Design Essay
A brief essay, 500 words maximum, (in English) is required as part of the submission describing the most important concepts of the design project. Keep in mind that the presentation should graphically convey the design solution and context as much as possible, and not rely on the design essay to convey a basic understanding of the project. The names of student participants, their schools, or faculty sponsors, must NOT appear in the design essay.

Online Project Submission
Entries must be uploaded through the ACSA Competition website at www.acsa-arch.org/competitions by 5:00 pm, Eastern Time, on June 17, 2009. If the Submission is from a team of students all student team members will have the ability to upload the digital files. Once the final submit button is pressed no additional edits, uploads, or changes can be made. Once the final Submission is uploaded and submitted each student will receive a confirmation email notification.

A final Submission upload must contain the following:
- Completed online submission information including all Team Members and Faculty Sponsors;
- Each of the four 20"x20" boards uploaded individually as a high resolution Portable Document Format (PDF) or Image (JPEG) Files;
- A Design Essay.

Winning projects will be required to submit original files/images for use in competition publications and exhibit materials.

Information
Program updates, including information on jury members as they are confirmed, may be found on the ACSA web site at www.acsa arch.org/competitions. By submitting your project, you certify that you have granted ACSA permission to use all graphics included. ACSA reserves the right to publish drawings, written descriptions, photographs of entries, and the names of student entrants, without compensation.

Additional questions on the competition program and submissions should be addressed to:

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COMPETITION SPONSORS

The **Association of Collegiate Schools of Architecture** (ACSA) is a nonprofit, membership association founded in 1912 to advance the quality of architectural education. The school membership in ACSA has grown from 10 charter members to over 250 schools in several membership categories throughout the world. Through these schools, over 5,000 architecture faculty are represented. ACSA provides a major forum for ideas on the leading edge of architectural thought. Issues that will affect the architectural profession in the future are being examined today in ACSA member schools.

Since 1857, the **American Institute of Architects** (AIA) has represented the professional interests of America's architects. As AIA members, over 83,000 licensed architects, emerging professionals, and allied partners express their commitment to excellence in design and livability in our nation's buildings and communities. Members adhere to a code of ethics and professional conduct that assures the client, the public, and colleagues of an AIA-member architect's dedication to the highest standards in professional practice.

The mission of the AIA **Historic Resources Committee** (AIA HRC) is to identify, understand, and preserve architectural heritage, both nationally and internationally. The AIA HRC is engaged in promoting the role of the historic architect within the profession through the development of information and knowledge among members, allied professional organizations, and the public. The educational goal of the AIA HRC is to integrate an understanding of preservation practice into the preparation of all architects, and to demonstrate that the design values for practice are universal.