

2006-2007 ACSA / AISC

MUSEUM OF STEEL

7TH ANNUAL STUDENT DESIGN COMPETITION

CATEGORY I
MUSEUM OF STEEL

CATEGORY II
OPEN



INTRODUCTION

The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce the seventh annual steel design student competition for the 2006-2007 academic year. Administered by the Association of Collegiate Schools of Architecture (ACSA) and sponsored by the American Institute of Steel Construction (AISC), the program is intended to challenge students, working individually or in teams, to explore a variety of design issues related to the use of steel in design and construction.

THE CHALLENGE

The ACSA/AISC 2006-2007 Steel Design Student Competition will offer architecture students the opportunity to compete in two separate Categories. Category I will challenge architecture students to design Museum of Steel in Pittsburgh, Pennsylvania. The project will allow the student to explore the many varied functional and aesthetic uses for steel as a building material. Students will be exploring the ways in which the reclamation of an underdeveloped waterfront is a prime opportunity for the designer to create a city focal point. The student must keep in mind the current needs of the city, the compatibility of the new structures with their historical neighbors, and the buildings ultimate acceptability into the existing urban fabric.

Category II will be an open competition with limited restrictions. This open submission design option will permit a greatest amount of flexibility with the context.

Students may not enter both Categories of the competition.

CRITERIA FOR JUDGING

Criteria for the judging of submissions will include: creative use of structural steel in the design solution, successful response of the design to its surrounding context, and successful response to basic architectural concepts such as human activity needs, structural integrity, and coherence of architectural vocabulary.

Image: 2006 IDEAS2 Awards (AISC), Innovative Design in Engineering and Architecture with Structural Steel, National Winner — \$75M and greater

Architects: Airport Architects Canada (AAC) joint venture:
Skidmore, Owings & Merrill LLP, New York
Adamson Associates Architects, Mississauga, Ontario
Moshe Safdie and Assoc., Somerville, Mass.

Building: LESTER B. PEARSON INTERNATIONAL AIRPORT—TORONTO

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SPONSOR

American Institute of Steel Construction (AISC), headquartered in Chicago, is a non-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry in the United States. AISC's mission is to make structural steel the material of choice by being the leader in structural-steel-related technical and market-building activities, including: specification and code development, research, education, technical assistance, quality certification, standardization, and market development. AISC has a long tradition of more than 80 years of service to the steel construction industry providing timely and reliable information.



ADMINISTRATIVE ORGANIZATION

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. These include full membership for all accredited programs in the United States and government-sanctioned schools in Canada, candidate membership for schools seeking accreditation, and affiliate membership for schools for two-year and international programs. Through these schools, over 4,000 architecture faculty are represented. In addition, over 500 supporting members composed of architecture firms, product associations and individuals add to the breadth of interest and support of ACSA goals. 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.

STRUCTURAL STEEL

Steel should be used as the primary structural material with special emphasis placed on innovation in steel design. Structural steel offers a number of strengths in building design including high resiliency and performance under harsh and difficult conditions, (e.g., earthquakes and hurricanes) and offers the ability to span great distances with slenderness and grace. Steel can be shaped to achieve curved forms and can be raised quickly to meet tough construction schedules under almost any weather condition. Steel can be easily modified to satisfy changing requirements. With virtually all of the U.S. structural steel is a by-product of recycling of cars and other steel products. It is the environmentally sound choice for a building material.




Image: 2006 IDEAS2 Awards (AISC), Innovative Design in Engineering and Architecture with Structural Steel, Merit Award—Less than \$15M
Architect: Holabird & Root LLC, Chicago
Building: SKYBRIDGE—DAVENPORT, IOWA

CATEGORY I - MUSEUM OF STEEL

The 2006-2007 Steel Design Student Competition will challenge students to design a museum featuring exhibit areas for the history of steel, art of steel including large scale sculpture, as well as special collections of memorabilia and industrial artifacts specifically relating to the history of the region and steel production. The museum will become the focus of a waterfront reclamation project, Steel Industry National Historic Park. The Museum of Steel will include exhibition galleries, changing galleries, a demonstration gallery, auditorium, as well as a public exterior garden that will provide a setting for community activities.

From 1875 to 1980, southwestern Pennsylvania was the Steel Making Capital of the World, producing the steel for some of America's greatest icons such as the Brooklyn Bridge and the Empire State Building. While many of the region's legendary mill sites have been dismantled, and it has been decades since the mills belched fire and smoke over Pittsburgh's skyline, the enormity of the region's steel-making contributions and its historical significance to the nation still exists. The site is located in Pittsburgh, Pennsylvania along the Monongahela River adjacent to the abandoned Carrie Furnace. This area of the city was once one home of the most vital steel production in the United States. Today this district is littered with abandoned relics of the past. The museum's site was chosen to revitalize the area and highlight these abandoned steel mills with a new life.

Students should take into consideration the following when designing the museum: it should maximize clear circulation of the public from part to part; it should be capable of expansion over time; it should be distinctly "legible" – that is, it is to be memorable enough to be photographed for postcards and emblazoned on museum memorabilia. It is to be a Museum of Steel built of steel to highlight the uses, production, and history of steel.



Aerial Photos of Carrie Furnace and Building Site



Recent Photo of Carrie Furnace

CATEGORY I - MUSEUM PROGRAM REQUIREMENTS

The functional and programmatic requirements outlined here must be met. The area allocations, however, are suggestions only and may be altered. Solutions should observe the total gross square footage, within a range of plus or minus ten percent.

Galleries

Entry Lobby	1,000 sq. ft.
Ticket Sales/Information Booth	250 sq. ft.
Coat Room/Rest Rooms	1,000 sq. ft.
Exhibition galleries	24,000 sq. ft.

In order to accommodate the diverse manifestations of art and exhibits, the main exhibition gallery should be designed as a flexible, column-free space that can be divided into smaller galleries as needed. A minimum clear interior vertical dimension of 25-30 feet should be maintained throughout the space. The gallery should allow for the display and installation of non-traditional art and exhibits.

Changing exhibits	10,000 sq. ft. per division
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The changing exhibit gallery should also be designed as a flexible, column-free space that can be divided into smaller galleries as needed. The gallery should allow for the display and installation of non-traditional art and exhibits.

Demonstration Gallery	6,500 sq. ft.
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"The Making and Use of Steel"

Auditorium for 250	2,500 sq. ft.
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This auditorium will allow the community and visitors an area for lectures, film screening, and social functions. The auditorium will mostly be used by the general public and will often be loaned to community organizations.

Public Exterior Space/Garden	5,000 sq. ft.
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This exterior exhibit garden is intended to highlight the site and its historical context of the surrounding steel production mills and its river side location.

Subtotal	50,250 sq. ft.
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Photo of Carrie Furnace Interior

Photo of Carrie Furnace Interior

Administration

Directors Office	200 sq. ft.
4 Assistant Directors Office	150 sq. ft. each
Administrative Assistants	600 sq. ft.
Conference Room	200 sq. ft.
Board Room	300 sq. ft.
Publicity	400 sq. ft.
Subtotal	2,300 sq. ft.

Service

Loading Area	500 sq. ft.
Superintendent Office	100 sq. ft.
Security Office	100 sq. ft.
Breakroom/Locker Area	300 sq. ft.
Staff Restrooms	250 sq. ft.
Workshop	00 sq. ft.
Storage	2,000 sq. ft.
Electrical Room	200 sq. ft.
Mechanical Room	500 sq. ft.
Communications Room	100 sq. ft.
Subtotal	4,450 sq. ft.

Ancillary Areas

Restaurant (150 seated)	1,500 sq. ft.
Kitchen	1,500 sq. ft.
Gift Shop	1,500 sq. ft.

Museum Total	61,500 sq. ft.
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Total Net Square Feet
Plus 25% Allowance
For mechanical areas,
circulation, structure, etc.

76,875 sq. ft.

Parking

250 automobiles

CATEGORY I - Museum of Steel, Building Site

Provided Competition Documentation

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

Site Plan

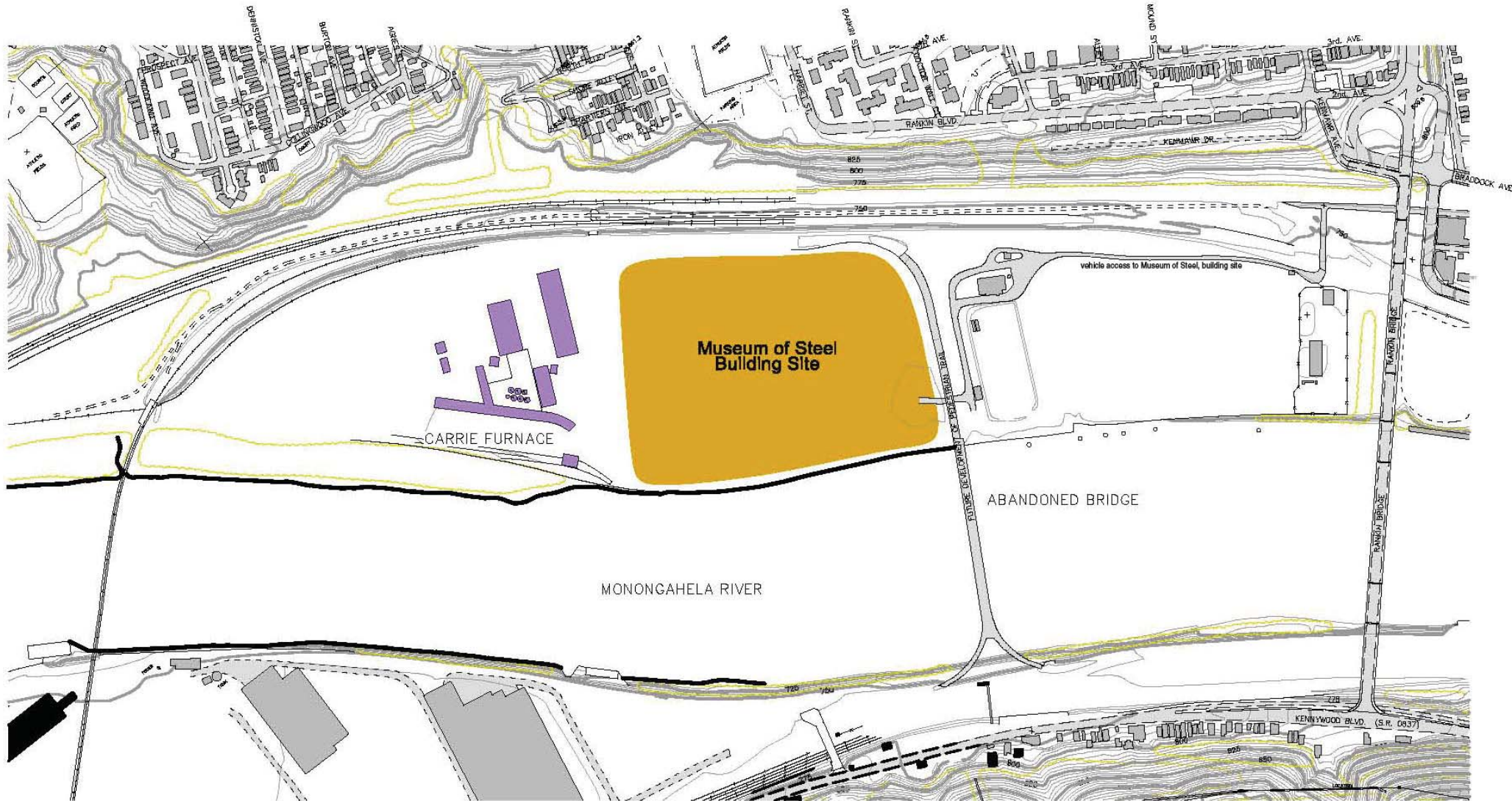
dwg file

Elevations of exiting Carrie Furnace

dwg file

Photographs

jpeg files



PROPOSED
"STEEL INDUSTRY NATIONAL HISTORIC PARK"



0' 100' 300' 600' 1000'

CATEGORY II - OPEN

The Challenge

The ACSA/AISC 2006-2007 Steel Design Student Competition offers architecture students the opportunity to participate in an open competition with limited restrictions. This category will allow the students (with the approval of the sponsoring faculty member) to select a site and building program.

The Category II program should be of equal complexity as the Category I program.

Faculty sponsoring students entering Category II must submit a written building program along with the Submission Form.

Restrictions

To enter the open competition students may select any building occupancy other than residential or Museum. The structure must have at least one space requiring long span steel structure.

A photograph of the Seattle City Hall building, a modern structure with a prominent glass facade and a large American flag flying on a tall pole. In the foreground, there is a landscaped area with a fountain, stairs, and greenery. The building is set against a clear blue sky.

Image: 2006 IDEAS2 Awards (AISC), Innovative Design in Engineering and Architecture with Structural Steel, Merit Award—\$1.5M or greater, but less than \$75M
Architect: Bassetti Architects/Bohlin Cywinski Jackson joint venture, Seattle
Building: SEATTLE CITY HALL—SEATTLE

RESOURCES

Modern Steel Construction

This authoritative monthly magazine is made available for free of charge to architectural students taking steel design courses. Fifteen (15) copies of seven (7) issues of Modern Steel Construction are sent to all schools of architecture. This magazine covers the use of fabricated structural steel in the variety of structural types. It presents information on the newest and most advanced applications of structural steel in a wide range of structures.

Issues of Modern Steel Construction (1996 - Present) are available online. Visit <http://www.aisc.org/MSCTemplate.cfm> web site to view them.

Additional Resources

In addition to researching Modern Steel Construction, entrants are encouraged to research other projects that demonstrate innovative use of structural steel such as those listed below. An intention of all ACSA competitions is to make entrants aware that background research is a fundamental element of any design solution.

David L Lawrence Convention Center, Pittsburgh, PA
Rafael Vinoly Architects, PC, New York, NY
Architectural Record, 2004 May, pg. 154-159
Modern Steel Construction, 2004, July, pg. 30-35

Seattle Public Library, Seattle, Washington
Office for Metropolitan Architecture/LMN Architects
Architecture, 2004, July, pg. 39-47
Civil Engineering, 2003, March, pg. 64-67
Modern Steel Construction, May 2005, pp. 48-49

Boston Convention and Exhibition Center
HNTB Architecture, New York, NY
Rafael Vinoly Architects, New York, NY
Primary Group, Boston, MA
Modern Steel Construction, 2005, pg. 24-26

Image: 2006 IDEAS2 Awards (AISC), Innovative Design in Engineering and Architecture with Structural Steel, Merit Award—Less than \$15M

Architect: Lake|Flato Architects, San Antonio.

Building: GOVERNMENT CANYON STATE NATURAL AREA—SAN ANTONIO

COMPETITION GUIDELINES (Category I & Category II)

Schedule

December 5 2006:	Registration begins (there is no fee for registration)
February 8, 2007:	Deadline for receipt of registrations by ACSA.
May 30, 2007:	Deadline for receipt of entries in Washington, DC.
June 2007:	Prize winners chosen by the design jury.
Summer 2007:	Publication of competition summary catalog.

Awards

The design jury will meet in June 2007 to select winning projects and honorable mentions. 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.acsa.arch.org and the AISC web site at www.aisc.org.

Winning students and their faculty sponsors will receive cash prizes totaling \$14,000 with distribution as follows:

Category I & Category II

First Prize	
Student	\$2,500
Faculty sponsor	\$1,000
Second Prize	
Student	\$1,500
Faculty sponsor	\$750
Third Prize	
Student	\$750
Faculty sponsor	\$500

A limited number of honorable mentions may also be awarded at the jury's discretion.

Prize winning submissions will be exhibited at the 2008 ACSA Annual Meeting, the 2007 North American Steel Construction Conference, and the 2008 AIA National Convention as well as published in a competition summary catalog.

Image: 2006 IDEAS2 Awards (AISC) Innovative Design in Engineering and Architecture with Structural Steel, National Winner—Less than \$15M
Architect: Leeb Architects, LLC, Portland, Ore.
Building: STATION PLACE GARAGE—PORTLAND, ORE.

COMPETITION GUIDELINES (Category I & Category II)

Eligibility

Because the support of AISC is largely derived from steel organizations in the U.S., the competition is open to students from ACSA member schools in the U.S., Canada and Mexico only. The competition is open to upper level students (third year or above, including graduate students). 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 online Registration Form (available at www.acsa-arch.org) by the February 8, 2007, deadline. Complete the 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. Please note that due to the number of entries, ACSA is not able to otherwise acknowledge receipt of registrations; please keep a copy of your registration for your records.

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 2006-2007 academic year. The competition cannot be executed as a thesis or other multi-term project.

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:

- An articulate mastery of formal concepts and aesthetic values;
- A mature awareness and innovative approach to environmental issues;
- An elegant expressive understanding of the material – Steel;
- A thorough appreciation of human needs and social responsibilities;
- A capability to integrate functional aspects of the problem in a architectural manner, and
- A capacity to derive the maximum potential afforded by the program.

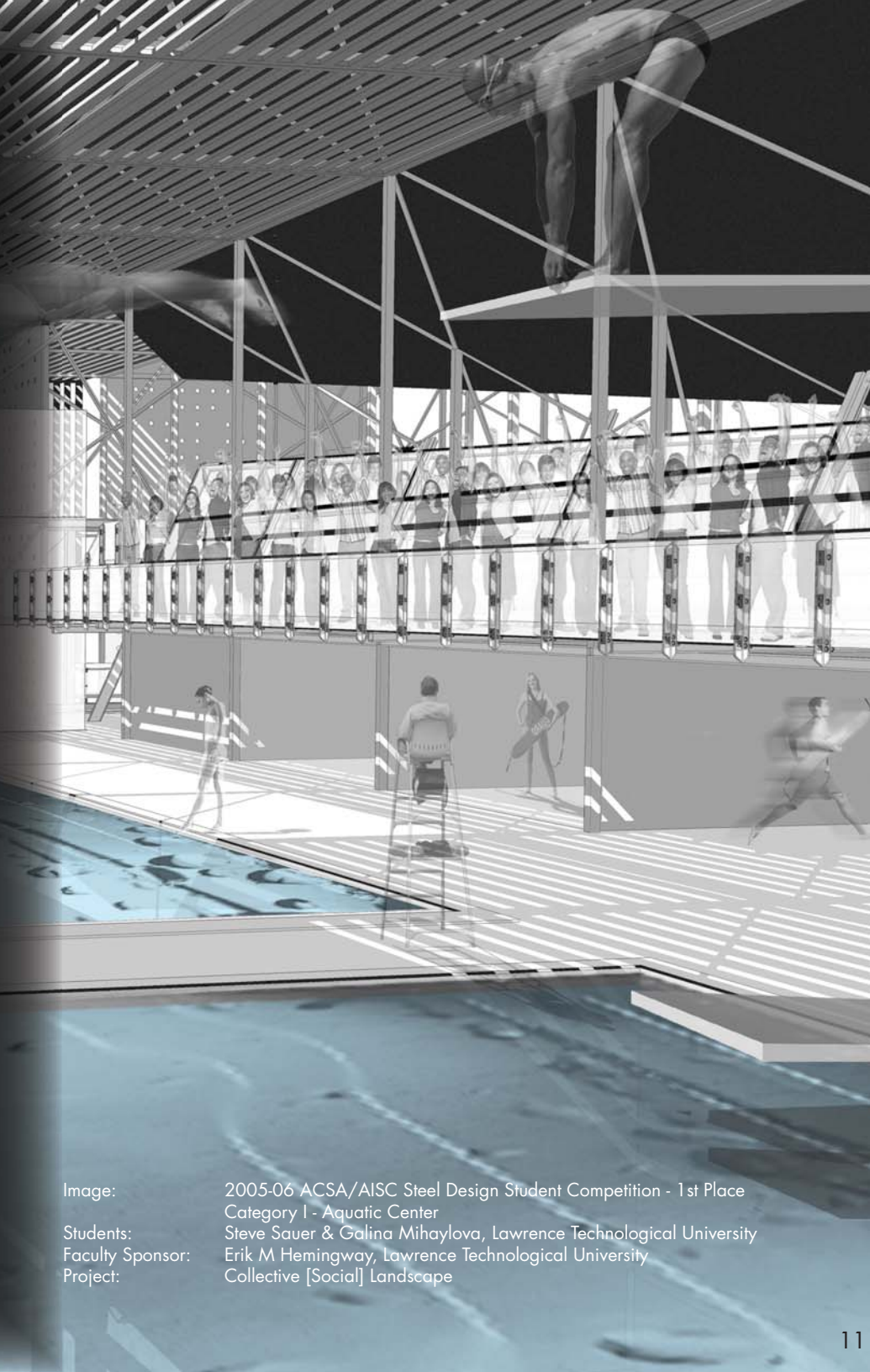


Image:

Students:

Faculty Sponsor:

Project:

2005-06 ACSA/AISC Steel Design Student Competition - 1st Place
Category I - Aquatic Center
Steve Sauer & Galina Mihaylova, Lawrence Technological University
Erik M Hemingway, Lawrence Technological University
Collective [Social] Landscape

COMPETITION GUIDELINES (Category I & Category II)

Required Drawings

Each presentation must directly address the specific 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, illustrating the use of structural steel; 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.

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.

AISC Presentation Format

Drawings must be firmly mounted or drawn directly on no more than four 20" x 20" (50 cm x 50 cm) illustration, foamcore, or other stiff lightweight mounting boards. Any other type of presentation (unmounted, three dimensional, or mounted on wood, metal, or glass) will be disqualified.

The names of student participants, their schools, or faculty sponsors, must not appear on the front of any board. An unsealed envelope holding a copy of the completed Submission Form and Design Essay must be affixed to the back of each board. Identification should not appear on the Design Essay.

All boards should be numbered on the back in the order in which they should be viewed (i.e., 1 of 4, 2 of 4, etc.).

Participants should keep in mind that, due to the large number of entries, preliminary review does not allow for the hanging or end to end display of presentation boards. Accordingly, participants should not use text or graphics that cross over from board to board.

All presentations must be suitable for black and white reproduction. Students may use color if desired, but must ensure that distinct colors will convert to readily distinguishable tones when photographed in black and white. Entries may be either originals or high quality reproductions. Participants should make adequate photographic and/or digital (300 dpi) reproductions of their presentation drawings prior to submission. Winning entrants will be required to submit photographic and/or digital reproductions for use in competition publications and exhibit materials. Please note that Submission Boards cannot be returned under any circumstances.

Image: 2006 IDEAS2 Awards (AISC), Innovative Design in Engineering and Architecture with Structural Steel, National Winner—\$15M or greater, but less than \$75M
Architect: William Rawn Associates, Architects, Inc., Boston
Building: WILLIAMS COLLEGE '62 CENTER FOR THEATRE AND DANCE—WILLIAMSTOWN, MASS.

COMPETITION GUIDELINES (Category I & Category II)

Design Essay

A brief essay (in English) should appear as part of the Submission Boards 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. A copy of the Design Essay should be included in the envelope attached to the back of each submission board.

Digital Files

A CD containing digital images of the submissions should be attached to the back of board 1. The CD should contain the following:

- Each of the 20x20 submission boards saved individually at 300 DPI-20x20.
- All images on boards at 300 dpi
- A digital copy of your design essay

Submission Form

Each project must be accompanied by a completed Submission Form. The form is available on ACSA's web site, www.acsa-arch.org. Participants should print copies of their Submission Form from the web. A printed copy of the completed Form must be enclosed in an unsealed envelope firmly affixed to the back of each board. A copy of the Design Essay and Digital File CD must also be included with the Submission Form. If any significant modifications to the given design challenge were made, entrants should explain the rationale for the modification on a separate sheet of paper. Include a copy of this explanation in the envelope on the back of the each Submission Board.

Shipping Instructions

Entries should be shipped in cardboard boxes or sturdy wrapping. Wood crates and other excessive packaging materials are not permitted. These requirements are designed specifically to reduce waste and must be followed.

All entries must be received at ACSA by 5:00 pm, Eastern Time, on May 30, 2007. Please note that due to the number of entries, ACSA will not send acknowledgements of receipt. ACSA cannot be responsible for customs processing or related fees. C.O.D. shipments will not be accepted.

Ship to:

**Association of Collegiate Schools of Architecture
Attn: ACSA/AISC Steel Design Student Competition
(Please specify category I or II)
1735 New York Avenue NW
Washington, DC 20006 USA**

For More 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.

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

Eric W. Ellis, Project Manager
Association of Collegiate Schools of Architecture
1735 New York Avenue NW
Washington, DC 20006
Tel: 202.785.2324
Fax: 202.628.0448
e-mail: competitions@acsa-arch.org

Image: 2005-06 ACSA/AISC Steel Design Student Competition - 1st Place
Category II - Open
Students: Jesie J. Kelly & Daniel Schrobilgen, Woodbury University
Faculty Sponsor: Gerard Smulevich, Woodbury University
Project: ARC Transportation Hub for Gaza, Palestine