“...every border has a story. Every line on a map, every maker in the landscape, was derived from some complex negotiation of power and culture.”

“(D)emarcations of places, (and) borders are manifestations of power in a world marked by significant spatial differences in wealth, rights, mobility, and standards of living.

- Diener, Hagan, 
“Borders: A Very Short Introduction”
INTRODUCTION
The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce the fourteenth annual steel
design student competition for the 2013-2014 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. Steel must be used as the primary structural material and contain at least
one space that requires long-span steel structure, with special emphasis placed on innovation in steel design.

THE OPPORTUNITIES
The 2013-2014 Steel Design Student Competition will offer architecture students the opportunity to compete in two
separate categories:

Category I BORDER-CROSSING STATION:
challenges architecture students to design a border-crossing station sited on a boundary between two countries.
Steel offers great benefits in this endeavor, as it allows for longer spans and more creativity.

Category II OPEN:
offers architecture students the opportunity to select a site and building program using steel as the primary material.
This competition category permits the greatest amount of flexibility for any building type.

Students may not enter both categories of the competition.

CRITERIA FOR JUDGING
Criteria for the judging of submissions will include: steel as the primary structural material, long-span steel
structure, creative and innovative 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.

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 erected quickly to meet tough
construction schedules under almost any weather condition. Steel can be easily modified to satisfy the life cycle
of a building including changing occupant requirements. Steel is the most recycled material in the world. Today
structural steel is 97% recycled with the primary source of material being automobiles. It is the environmentally
sound choice for a building material. Architects have praised the natural beauty of steel and are excited about
exposing it in the design of their structures to emphasize grace, slenderness, strength and transparency of frame.

COMPETITION ORGANIZERS
Administrative Organization: The Association of Collegiate Schools of Architecture 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 5,000 architecture faculty members 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.

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. Membership to AISC is free to university faculty and full time students and AISC membership provides
valuable benefits. Information can be found at www.aisc.org/universityprograms under membership.
OVERVIEW OF BORDERS

The Handbook of Best Practices at Border Crossing (sponsored in part by the United Nations Economic Commission), indicates the “legal framework surrounding international trade, border management and customs is a tangled web.”

With 57 participating States in Europe, Central Asia and North America and 11 Asian and Mediterranean Partners participating in the development of this border document here are a number of highlights on current issues facing border-crossing stations across the globe:

1. … securing cross-border transport networks and ensuring international transport development are vital to the task of meeting such regional challenges as lack of access to the open sea, dependence on transit services of neighboring countries, and other difficulties related to market access. This is the context in which we have decided to pool our respective and complementary competencies to produce this unique and timely resource.

2. Entering another country had become a complicated process with a number of contemporary issues such as longer waiting times at borders and more layers of bureaucracy – resulting in additional costs and slower economic growth.

3. … increases in cross-border transactions and in the importance of global trade for national economies are compelling present-day governments to develop more efficient border management processes.

4. Options for the Design of Border Crossing Points, starts with the assertion that the ideal border crossing point (BCP) should provide for efficient processing of lawful traffic, have facilities for detecting violations, but at the same time offer a good image of the State it is representing.”
CATEGORY I BORDER-CROSSING STATION

THE DESIGN
The design of your Border-Crossing Station should be guided by the principles of innovation, creativity, iconic identity, sustainability, functionality, efficiency, and either harmony or purposeful disharmony with the neighboring context border depending on the story that you wish to tell through your project. Design solutions should be driven by culturally significant imagery based on the border and the site’s visual and literal unifying elements.

The main design challenges are to determine a suitable scale of the station, and to resolve the specific program requirements to work with complex site circulation needs and other contextual restrictions. Buildings may become a network of spaces for determined vehicle crossing checkpoints and/or a series of ancillary support spaces to accommodate the increase in border-crossing activities that might be seasonal.

CIRCULATION
Your design proposal must address the following circulation challenges:

1. Provide clear circulation patterns;
2. Offer simple, direct movement of traffic and staff;
3. Locate service counters so that staff members are visible to the public;
4. Consider the visual impact of approach sequence;
5. Accommodate inspections of basic traffic types (determine the types of transportation mode(s) that will use your border crossing station):
   - **Pedestrians**: on foot, on a bicycle, on a Segway, on a skateboard, etc.;
   - **Non-commercial vehicles**: defined as traffic ‘not carrying materials for resale or use in manufacturing’;
   - **Commercial vehicles**: defined as traffic ‘carrying goods and cargo for resale or use in manufacturing’;
   - **Buses**: normally bus passengers disembark, then the bus is inspected before the passengers board again;
   - **Boat**: normally boat passengers disembark, then the boat is inspected before the passengers board again.

SITE
Your Border-Crossing Station should be sited on a border between two countries chosen by the faculty sponsor and/or the student(s). Some examples include, but of course not limited to: US/Canada, US/Mexico, Syria/Jordan, India/Pakistan, Egypt/Jordan, China/Russia, etc). The criteria for site selection include the following:

- **Size**: The size of your Border-Crossing Station and surrounding grounds may range from 45,000 - 100,000 square feet. The size should be determined by the story that you want to tell with your design, and should be influenced by the modes of transportation that you choose.
- **Context**: The site location is open to any where in the world! Sites can be urban, suburban, or rural. It is important to convey how your site is accessed, especially for remote locations.
- **Access**: If your site is urban or suburban (or even rural) consider the use of public transportation such as light rail, commuter rail, subway, bus, bicycles, etc that provide the opportunity to use your border station.

PROGRAM
Following are the required building components to be incorporated in your design proposal:

1. Develop a station that celebrates the entry and exit points between two countries;
2. Select a border site and establish the mode(s) of transportation;
3. Determine the scale of program. Program varies (see outline of suggested spaces on page 5) depending on the particular border site selected;
4. Develop a program that provides for the strongest connection for your border crossing station to selected site. The program should guide development of a rich sequence of spaces connected to concept of project;
5. Explore the design of the architectural vocabulary of the station that reflects the stories of the selected border.
## CATEGORY I BORDER-CROSSING STATION

### MAIN SPACES

1. Customs Hall (large span space);
2. Pedestrian/Bus Passenger Queuing, Processing, and Inspection Areas;
3. Commercial and Non-Commercial Vehicle Queuing, Processing, and Inspection Areas: including (as determined if needed) areas for animal and agriculture inspection and quarantine;
4. Customs Inspector Counter/Work Areas;
5. Customs Inspector Offices;
6. Dog Kennels: dogs are used to search vehicles and cargo.

### SUPPORT SPACES

7. Laboratory Spaces (for testing suspicious materials);
8. Holding Cell/Detention Areas: for holding detained travelers;
9. Toilets for Offices;
10. Toilets for Public (accessible to Customs Hall Space);
11. Data Processing Center;
12. General Storage Areas;

### EXTERIOR SPACES

13. Outside Parking Areas (Surface): Referral, visitor, staff, and service parking areas should be separated. This should be integrated with the open space;
14. Impoundment Areas: for seized vehicles and other large items;
15. Entry Area: Drop off area;
16. Border Crossing Station Park: Provides the sequence of space(s) from parking area;

### CARE TAKER(S)

17. Care Taker Residence (where the head inspector lives or for the overnight stay of inspectors.

*This program should be used as guidance, however it may be adapted. Submissions that significantly adapt the following program should provide Program Edits (1,000 words max) during submission.*
CONSTRUCTION TYPE / USE OF STEEL
The design project must be conceived in structural steel construction. A strategy should be considered that evaluates a method for taking advantage of steel’s properties and characteristics in order to conceptualize and propose a critical evaluation of the design solution.

Steel construction offers students great benefits for this type of facility as it is ideal for covering long-spans without sacrificing flexibility and aesthetic lightness, multi-story buildings, and quick delivery and assembly in congested urban environments or rural environments.

Steel must be used as the primary structural material and contain at least one space that requires long-span steel structure, with special emphasis placed on innovation in steel design. The most innovative uses of steel seem to inevitably integrate the use of steel into the design of the project at a primary level (building structure), secondary levels (lateral and skin level) and tertiary levels (building connections).

The project must concentrate on formulating specific thoughtful concepts and designs and carrying these ideas to a detailed level. The project should be developed with an integrative approach to the innovative uses of building materials and systems—structural, environmental, enclosure, etc.—while maintaining an overall design concept. Participants will develop a selected physical area of the project in greater detail considering the building’s structural and technical issues (lighting, acoustics, sanitary mechanical, and environmental controls) through larger scale drawings showing structure, building skin, and interior spaces. Through rendered perspectives and elevations, the proposals should demonstrate surface qualities including material, color, texture, and light.

Along with structural, tectonic and technical issues above, designs should react to the context (larger regional influences of the border, geography, topography and latitude), climate (sun, wind, light and water), and culture (patterns of interaction rising from human occupation of place). Projects should be designed in a socially and environmentally responsible manner. Additionally projects should demonstrate the manner by which they reduce dependencies on non-renewable resources and how all of these responsible environmental activities can be integrated into the architectural vocabulary of your project.

CODE INFORMATION
Refer to the International Building Code and the local zoning ordinance for information on parking requirements, height restrictions, set backs, easements, flood, egress, and fire containment. Accessibility guidelines need to be followed; refer to the Americans with Disabilities Act, along with the principals of Universal Design.
**CATEGORY I BORDER-CROSSING STATION**

**REQUIRED DRAWINGS**
Submissions must clearly represent the selected program and Criteria for Judging and must include (but are not limited to) the following required drawings:

- Three-dimensional representation, either in the form of an axonometric, perspective(s) (provide a perspective inserted into context), or physical model photographs – to illustrate the character of the project
- Building/Site sections sufficient to show site context and major program elements
- Building Vertical Cross-Section and Floor Plans to show spatial adjacencies and navigation strategies
- Aerial view site plan showing the surrounding buildings, topography, and circulation patterns
- Large scale drawing(s), either orthographic or three dimensional, illustrating the use of structural steel and the relationship to building program, skin, navigation through spaces
- Site plan showing the buildings context, surrounding buildings, topography and access/circulation

Submission must include:

- 4 digital boards at 20" x 20". Illustrate graphically or otherwise the use of steel construction
- A design essay or abstract (500 words maximum)
- Program edits (if any): a description of any significant adaptations of the program (1000 words maximum)

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.

**RESOURCES**
Border-crossing references:

- Borders: A Very Short Introduction (Very Short Introductions), by Alexander C. Diener (Author), Joshua Hagen (Author), Oxford University Press, USA
- Walls: Travels Along the Barricades, by Marcello Di Cintio, Soft Skull Press

* See page 10 for steel construction resouces

Select precedent projects:

- Sarpi Border Checkpoint in Georgia / J. Mayer H. Architects
- The Miller Hull Partnership unveils new designs for San Ysidro U.S. Land Port of Entry Jordana, Sebastian.
- Hong Kong Boundary Crossing Facilities Competition winners Jordana, Sebastian.
THE CHALLENGE
The ACSA/AISC 2013-2014 Steel Design Student Competition offers architecture students the opportunity to participate in an open competition category with limited restrictions. This category will allow the students (with the approval of a faculty sponsor) to select a site and building program. Steel must be used as the primary structural material and contain at least one space that requires long-span steel structure, with special emphasis placed on innovation in steel design.

The Category II program should be at a minimum of equal complexity as the Border-Crossing Station program. Category II entrants must submit a written building program along with the final submission.
CATEGORY II OPEN

RESTRICTIONS
To enter the open competition students may select any building occupancy/type other than a Border-Crossing Station, and the building must have at least one space requiring long-span steel structure. Students may not enter both categories of the competition.

CODE INFORMATION
Refer to the International Building Code and the local zoning ordinance for information on parking requirements, height restrictions, set backs, easements, flood, egress, and fire containment. Accessibility guidelines need to be followed; refer to the Americans with Disabilities Act, along with the principals of Universal Design.

CONSTRUCTION TYPE
The design project must be conceived in structural steel construction. A strategy should be considered that evaluates a method for taking advantage of steel’s properties and characteristics in order to conceptualize and propose a critical evaluation of the design solution.

REQUIRED DRAWINGS
Each presentation must clearly represent the selected program and Criteria for Judging and must include (but are not limited to) the following required drawings:
• Large scale drawing(s), either orthographic or three dimensional, illustrating the use of structural steel
• Three-dimensional representation, either in the form of an axonometric, perspective, or model photographs – one of which should illustrate the character of the project.
• Building/Site sections sufficient to show site context and major program elements
• Site plan showing the surrounding buildings, topography and access/circulation
• Floor plans

Submission must include:
• 4 digital boards at 20” x 20”
• Illustrate graphically or otherwise the use of steel construction
• A design essay or abstract (500 words maximum)
• A building program (description of building type and program spaces/square feet, 1,000 word maximum)

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.
An intention of all ACSA competitions is to make students aware that research is a fundamental element of any design solution. Students are encouraged to research material properties and methods of steel construction, as well as precedent projects that demonstrate innovative use of structural steel such as those listed below.

**STEEL CONSTRUCTION REFERENCES**

- AISC website: www.aisc.org
- Modern Steel Construction: This authoritative monthly magazine is made available free of charge to architectural students taking steel design courses. 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 www.modernsteel.com to view them
- Annette LeCuyer. Steel and Beyond. (Birkhäuser Basel 2003)
COMPETITION GUIDELINES (CATEGORY I & CATEGORY II)

ELIGIBILITY
Because the support of AISC is largely derived from steel companies whose markets are mainly in the U.S., the competition is open to students from ACSA Full and Candidate Member Schools from the U.S. and Canada, as well as ACSA Affiliate Members Schools from 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 teams. 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.

SCHEDULE
March 19, 2014  Registration Deadline (free registration)
May 21, 2014    Submission Deadline
August 2014     Winners Announced
Fall 2014       Publication of Summary Book

AWARDS
First, second, and third prizes will be awarded in each of the two categories, in addition to a selected number of honorable mentions, at the discretion of the jury. 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. A total of $14,000 will be distributed in the following manner:

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<tr>
<th>Category I</th>
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<tr>
<td>First Prize</td>
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<tr>
<td>Student</td>
<td>$2,500</td>
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<tr>
<td>Faculty Sponsor</td>
<td>$1,000</td>
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<tr>
<td>Second Prize</td>
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<tr>
<td>Student</td>
<td>$1,500</td>
</tr>
<tr>
<td>Faculty Sponsor</td>
<td>$750</td>
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<tr>
<td>Third Prize</td>
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<tr>
<td>Student</td>
<td>$750</td>
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<tr>
<td>Faculty Sponsor</td>
<td>$500</td>
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<table>
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<th>Category II</th>
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<td>First Prize</td>
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REGISTRATION
A faculty sponsor is required to enroll students online (available at www.acsa-arch.org) by March 19, 2014. Registration can be done for your entire studio or 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 registration. There is no entry or submission fee to participate in the competition. Each registered student and faculty sponsor will receive a confirmation email that will include information on how the student(s) will upload final submissions online. Please add the email address competitions@acsa-arch.org to your address book to ensure that you receive all emails regarding your submission.

During registration the faculty will have the ability to add students, add teams, assign students to teams, and add additional faculty sponsors. Registration is required by March 19, 2014, but can be changed, edited, and added to until a student starts a final submission; then the registration is no longer editable.
COMPETITION GUIDELINES (CATEGORY I & CATEGORY II)

FACULTY RESPONSIBILITY
The administration of the competition at each institution is left to the discretion of the faculty within the guidelines set forth in this document. Work on the competition should be structured over the course of one semester during the 2013-2014 academic year.

EVALUATION CRITERIA
Each faculty sponsor is expected to develop a system to evaluate the students’ work 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 elegant expressive understanding of the material – steel
- A strength of the argument and the proposal’s ability to support the concept for the design (Category I)
- An articulate mastery of formal concepts and aesthetic values
- A mature awareness and innovative approach to environmental issues
- A thorough appreciation of human needs and social responsibilities
- A capability to integrate functional aspects of the problem in an architectural manner
- A capacity to derive a design, using steel, with the maximum innovation and possibility

DIGITAL SUBMISSION FORMAT
Submissions must be presented on no more than four 20" x 20" digital boards. All boards are required to be uploaded through the ACSA website as Portable Document Format (PDF) or image (JPEG) files. The names of student participants, their schools, or faculty sponsors, must NOT appear on the boards, or in the project title.

DESIGN ESSAY/ABSTRACT
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. This abstract is included in the final online submission, completed by the student(s) in a simple copy/paste text box.

ONLINE PROJECT SUBMISSION
The student is required to submit the final entries that must be uploaded through the ACSA Competition website at www.acsa-arch.org by 5:00 pm, Eastern Time, on May 21, 2014. 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. You may “save” your submission and return to complete. Please note: the submission is not complete until the “complete this submission” button has been pressed. For team projects: each member of team projects may submit the final project. A final Submission upload must contain the following:

- Completed online registration 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 or abstract (simple copy/paste text box completed during submission)
- A competition program (1,000 word max in a simple copy/paste text box during submission). This is required for all submissions in Category II OPEN, and for submissions that make significant changes to the Category I BORDER-CROSSING STATION program.

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

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

Angela DeGeorge, ACSA Programs Coordinator / email: adegeorge@acsa-arch.org
Eric Wayne Ellis, ACSA Director of Operations and Programs / email: eellis@acsa-arch.org

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Washington, DC 20006
Tel: 202.785.2324

Competition Program written and developed by: Thomas Fowler, California Polytechnic State University; Eric Ellis, ACSA; Angela DeGeorge, ACSA & Nancy Gavlin, AISC.