



**AMERICAN INSTITUTE OF  
ARCHITECTURE STUDENTS**

## **SPONSOR**

---

Kawneer

With more than 100 years of innovation and experience, Kawneer Company, Inc. is headquartered in Norcross, GA, and is the leading manufacturer of architectural aluminum products and systems for the commercial construction industry. Kawneer is part of Alcoa's global Building and Construction Systems (BCS) business. Alcoa BCS manufactures and markets architectural systems and products in North America, Europe, Asia and the Middle East. Alcoa is the world's leading producer and manager of primary aluminum, fabricated aluminum, and alumina facilities, and is active in all major aspects of the industry.

Kawneer Company, Inc.  
[www.kawneer.com](http://www.kawneer.com)

## **COOPERATING ORGANIZATION**

---

American Institute of Architecture Students

The American Institute of Architecture Students (AIAS) is an independent, nonprofit, student-run organization dedicated to providing unmatched programs, information, and resources on issues critical to architectural education. The mission of the AIAS is to promote excellence in architectural education, training, and practice; to foster an appreciation of architecture and related disciplines; to enrich communities in a spirit of collaboration; and to organize students and combine their efforts to advance the art and science of architecture.

American Institute of Architecture Students  
1735 New York Avenue, NW  
Washington, DC 20006-5292  
T 202.626.7472  
[www.ias.org](http://www.ias.org)

# INDEX

Introduction.....	3
About the Competition.....	4
Eligibility.....	4
Registration.....	5
Submission Requirements.....	5
• File Format	
• Design Essay	
Evaluation Criteria.....	6
Awards.....	6
Schedule.....	7
Important Notes.....	7
Program.....	8
• Overview	
• Site Selections	
• Space Requirements	
• Definitions	
• Additional Concerns	
Resources.....	12

# INTRODUCTION

The design of educational facilities serves as a major focus for architects and the communities in which they live and work. The National Center for Education Statistics reports that there were 95,726 public schools in the United States in 2005, nearly 10,000 more than in 1995. And even in the current economic downturn, the American Institute of Architects indicates that the design and construction of schools represents the driving force of design fees for architecture firms in the United States.

While population growth is projected to level off in the next few years, schools will continue to serve as the center for education in the community. School districts in the US will need to start building schools that address the needs of their users, needs that reach far beyond the color of paint in the classroom. And these large buildings will also need to start using technology and building systems to help reduce their economic and environmental impact.

Elementary schools in particular have generally simple programmatic requirements and allow for tremendous creativity within the design solution. The challenge comes in making a building that functions in the simplest way possible for the young minds of children, provides a modern workplace for the teachers and staff and promotes the spirit of its community.

Kawneer and AIAS give students a chance to meet these challenges in the 2010 Schools of Tomorrow Design Competition...

## ABOUT THE COMPETITION

---

Sponsored by Kawneer and administered by the American Institute of Architecture Students (AIAS), the program challenges students to learn about building materials, specifically architectural aluminum building products and systems in the design of a modern and creative school for students ranging from kindergarten to sixth grade. While open to any student, the competition is designed for advanced students. Total prize money is \$7,225, including \$2,500 for the first place winning design.

The objectives of this competition are:

- To research, respond to and highlight the unique aspects of designing an elementary school that serves the selected site and community.
- To build knowledge about materials, products, and daylighting techniques (primarily using Kawneer architectural aluminum building products and systems) that can help earn LEED® certification points while creating a bright and fun atmosphere for learning.
- To design a sustainable facility utilizing the USGBC LEED® building standards\*.
- To develop an attractive and pleasing school and surround site for the surrounding community.

- To design a facility that uses the physical environment too support the learning process.
- To encourage the use of sustainable and universal design principles for development of both the building and site.

The designer (or team) may select any site in North America for their designs. It is requested (but not required) that students locate sites through research of school districts that are in need of or are currently working towards a new elementary school in the coming years. As the program specifies a building of at least 50,000 square feet, the city and site selected should be of an appropriate size to facilitate the new school.

Requests to alter the competition program in any way to best fit an existing curriculum may be granted on a case by case basis. Requests must be made to the AIAS prior to registration for the competition.

\*While AIAS design competitions include specific building products and services like rating and credentialing programs, this should not necessarily be construed as an endorsement by the AIAS.

## ELIGIBILITY

---

The competition is open to all students of architecture and design in North America (and members of the AIAS not residing in North America). Entries will be accepted for individuals as well as team solutions. Teams should be made up of no more than four students. Submissions should be principally the product of work in a design studio, building materials class, design charrette, or a person's spare time.

## REGISTRATION

---

All information and materials needed to successfully participate in the competition are contained in this program document. There is no entry or submission fee required to participate in the competition for AIAS members. There is a \$10.00 submission fee for non-members. Competition entries may be the work of an individual or team.

Registrations must be completed through the competition Web site at [www.aias.org/kawneer](http://www.aias.org/kawneer) by 5:00 pm, Eastern Time, on Monday, October 18, 2010.

Confirmation of registration will be emailed to individual(s) with instructions on submitting final design files. Please keep a copy of this confirmation for your records as verification.

If payment is needed for registration, a check or money order made out to the AIAS must be postmarked by the registration deadline in order to be successfully register for the competition.

## SUBMISSION REQUIREMENTS

---

Entries must be uploaded through the competition Web site at [www.aias.org/kawneer](http://www.aias.org/kawneer) by 5:00 pm, Eastern Time, on Monday, November 26, 2010. 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 submissions are uploaded no additional edits, uploads, or changes can be made. Within 48 hours of uploading and the submission being approved, each student will receive a confirmation email notification.

### FILE FORMAT

A final Submission upload must contain the following files in a single (ZIP) folder not exceeding 20 MB\*:

- Completed submission information cover page including all team members and faculty sponsors;
- Each of the four 20"x20" boards as a high resolution Portable Document Format (PDF) file, or individually as 150 DPI Image (JPEG, TIFF or GIF) files;
- A copy of the design essay as a high resolution Portable Document Format (PDF) file or Document (DOC) file.

### DESIGN ESSAY

A brief 500-word essay should appear as part of the presentation boards describing the most important concepts of the design project. The essay should explain how the design creates a positive learning environment for both the children and educators while addressing today's trends in building performance. Keep in mind that your designs should graphically convey the design solution as much as possible, and therefore you should not rely on the design essay for a basic understanding of the project.

\*Winning designers will be required to submit a CD containing original files/images for use in competition publications and exhibit materials. All presentations must be suitable for black-and-white reproduction. Students may use color if desired, but must ensure that distinct colors will be readily distinguishable tones when reproduced in black-and-white.

## EVALUATION CRITERIA

---

In addressing the specific issues of the design challenge, submissions will be evaluated on the following:

- Cleverness and appropriate use of Kawneer architectural aluminum building products that can also help earn LEED® certification points. A 30–35% use of glazing and entrance systems (namely Kawneer products) should be utilized and will be evaluated.
- Creation of an elementary school that promotes a positive presence within the community
- Response to the specific usage of the building
- Implementation of sustainable and universal accessibility design principles for development of both building and site
- Demonstration of knowledge about materials, products, and installation contributing to a sustainable and stimulating building
- Clear and easily comprehensible design
- Originality

Award-winning entries will be selected by a jury no later than December 18, 2010.

## AWARDS

---

On December 20, 2010, the award winners and honorable mentions will be announced via the AIAS Web site. The award winning entries will be displayed at the AIAS FORUM 2010 in Toronto, ON, December 29, 2010 – January 1, 2011 and at the 2011 AIA Convention and Design Exposition in New Orleans, May 12–14, 2011. A press release listing the winning projects will be sent to the schools of all participating students as well as posted on the competition Web site ([www.ias.org/kawneer](http://www.ias.org/kawneer)).

Winning students/teams and their AIAS chapters\* will receive cash prizes totaling up to \$7,225, with an expected the distribution as follows:

First Place	\$2,500 (AIAS Chapter: \$500)
Second Place	\$1,500 (AIAS Chapter: \$275)
Third Place	\$750 (AIAS Chapter: \$200)
Honorable Mentions(3):	\$500 each

The winning entries will be published in the Spring 2011 issue of Crit, Journal of the AIAS. Kawneer and the AIAS reserve the right to publish photographs of all entries and names of student entrants without compensation.

\* If there is not an AIAS chapter at the student's school, the chapter prize money will go towards development of a new chapter there.

## SCHEDULE

---

Wednesday, June 02, 2010	Competition Officially Announced
Saturday, August 28, 2010	Jury Members Announced (announcement via competition web site)
Monday, October 18, 2010	Deadline for competition registration
Monday, November 29, 2010	Deadline for competition submissions
Saturday, December 18, 2010	Review by the Jury
Monday, December 20, 2010	Results posted on the Competitions Web site.
December 29, 2010 - January 1, 2011	Display of winning entries at 2010 AIAS FORUM in Toronto, ON
Spring 2011	Publication of winning designs in Crit 71.
May 12-14, 2011	Display of winning entries at 2010 AIA Convention and Design Exposition in New Orleans (student(s) of winning design will receive complimentary registration to attend convention)

## IMPORTANT NOTES

---

Upon receipt all entries become the property of the AIAS and Kawneer. The AIAS and Kawneer reserve the right to publish drawings, written descriptions, photographs and the names of entrants, without compensation.

To obtain additional promotional materials, receive program updates or inquire about concerns related to the competition please contact the American Institute of Architecture Students:

Attn: Schools for Tomorrow Design Competition  
1735 New York Avenue, NW  
Washington, DC 20006-5292  
T 202.626.7497  
F 202.626.7414  
E [competitions@aias.org](mailto:competitions@aias.org)  
[www.aias.org/kawneer](http://www.aias.org/kawneer)

PROGRAM

## OVERVIEW

School facilities play an important role, both symbolic and functional, in support of the education process. Symbolically, the school building represents the values each community places on education. In turn, educational institutions are intimately affected by changes occurring within their surrounding community. Some basic principles to think about when designing a school include:

1. Demographics, rate of growth and the cultural diversity of the neighborhood the school will ultimately serve
2. Clarity of design concept (address the needs for entrance and access for community, security, and staff)
3. Overall design that is sympathetic of the surrounding community and existing architecture
4. Day lighting and use of windows and glazing. Natural light and a view of nature are essential to building a positive learning environment.
5. What if any community-based organizations and private businesses would be able and/or willing to partner with the school district for programming of the building
6. The school itself is not just a "space" but a "place" for learning.

Secondary programmatic functions of the school that should be addressed in the final design include:

1. A portion of the facility serves the community with social/community centered spaces
2. The facility is designed to promote sustainable building practices including but not limited to:
  - Natural light and skylights to limit need for electric lamps
  - Sun shades and light shelves to allow for natural lighting without excessive solar heat gain
  - Use of PV panels and other renewable energy sources
3. Facility has convenient parking and bus lanes that do not interfere with playing areas for students and young children.

## SITE SELECTIONS

This competition suggests a program for a minimum 50,000 s.f. elementary school. Designers are asked to investigate a solution for a self selected site in an appropriately sized city in North America.\*

As you select your site, keep in mind the minimum size of the program. Thorough research on the specific site location, along with a comprehensive understanding of site conditions will be necessary to successfully complete this program. The program encourages competitors to develop strong ideas about sustainable design with regard to the site and building.

All designers should consider the site and building from an accessibility standpoint. Consideration should be given to ensure that designs comply with the Americans with Disabilities Act. For more information designers should consult with the US Access Board at [www.access-board.gov](http://www.access-board.gov) or 800.872.2253.

## SITE AND EXTERIOR REQUIREMENTS

Placing the school on the site in an appropriate manner should be carefully considered. Issues of environment (sun angle, wind, bodies of water, etc) should all be looked at to ensure that the building is not only respectful of the site, but that the facades and any site modifications work together to create a pleasing space for the community. To ensure the school is not thought of as an institution or closed facility, ample use of glazing, windows and open space is preferred.

## SPACE REQUIREMENTS

The program gives minimum recommendations for size. All designs should consider the program requirement fulfillment for overall function of the spaces. Furniture and fixture location are not required in final drawings except where specifically noted.

\*Requests to alter the competition program in any way to best fit an existing curriculum may be granted on a case by case basis. Requests must be made to the AIAS prior to registration for the competition.

# recommended space requirements

6,215 s.f.

## Administrative Suite\*

Principal and Vice Principal Offices	550 s.f. (each)
Staff Offices (5 total)	350 s.f. (each)
Mail and Copy Room	500 s.f.
Clinic/Health Room	500 s.f.
Conference Room	450 s.f.
Restrooms (Men's and Woman's)	100 s.f. (each)
Storage	150 s.f.
Reception Desk/Entry Gallery	1000 s.f.
Circulation and Security	10%

3,550 s.f.

## Kitchen/Cafeteria

210 seat cafeteria (lunch served in two sessions)*	2250 s.f.
Kitchen Prep Area	875 s.f.
Serving Counters (2 minimum)	425 s.f.

7,550 s.f.

## Gymnasium/Stage

Basketball Court*	5750 s.f.
Raised Stage/Platform	1250 s.f.
Storage	550 s.f.

24,915 s.f.

## Education Areas

General Education Classroom K-3 (3 classrooms per grade)*	625 s.f. (each)
General Education Classroom 4-6 (4 classrooms per grade)*	600 s.f. (each)
Special Education Classroom (3 total)*	700 s.f. (each)
Arts and Crafts Room (main classroom and storage)*	1250 s.f.
Music Suite (3 small practice rooms, faculty office and Ensemble Room)	1600 s.f.
Library*	3000 s.f.
Circulation	10%

7,770 s.f.

## General Use Space

Miscellaneous (storage, lockers, Restrooms, etc)	2770 s.f.
Mechanical (HVAC, information technology, janitorial)	5000 s.f.

50,000 s.f.

## Total estimated minimum floor space

*\*A strong emphasis on day lighting and a visual connection to nature should be addressed*

## DEFINITIONS

**Administrative Suite** – The administrative suite serves as the control center for the school and as a contact point for parents, students, and faculty members. The school records are kept and reviewed, the public address system originates from here, budgets are established, books are kept and students are counselled within the offices. The office is a first contact point, a crossroads checkpoint and is most always placed near the main entrance of the facility.

In order to control access into the school building, visual contact between the office and the main entrance is necessary. Some administration offices share a common vestibule with the main school entrance, routing visitors through the office prior to having full access into the building. In some schools an information desk is located in the entry lobby as a central point for visitors to register. Other administration suites have small security cameras and speakers located at the entry, allowing voice communication and visual contact by the receptionist.

The administration suite contains groups of offices, at least one conference room, work rooms (as needed), storage and sometimes a money vault. Often there is also a large seating area within the suite to allow for multiple groups of parents or students arriving at one time.

**Kitchen/Cafeteria** – Lunch time not only serves as a time to eat but also a break time for students to get a change of pace in a place different in feeling and removed from the area they have spent their morning. As the space is large but only used for a very short period of time on any given day, the design of the cafeteria needs to be creative and often the space serves other functions within the school. In most schools today, cafeterias also serve as main gathering spaces or “commons rooms.” In line with the growing trend to use space efficiently, many schools have started to evolve the cafeteria into a social area similar to food courts in a mall or shopping center.

With the large quantity of food that is prepared and then served in a short period of time, the design and functionality of the link between the kitchen and the service line is vital to the success of the space. Special consideration needs to be given to seating areas and traffic flow. Locating the serving counter adjacent to the kitchen requires little to no carting of food and in return little to no carting of dirty trays after disposal.

**Gymnasium/Stage** – Daily exercise and activity has become one of the biggest advocacy issues in America. With the numbers for childhood obesity and childhood onset diabetes continually on the rise, there is a renewed sense of importance placed on physical education programs. The most common design requirement when placing a gym into a school is to have at least one full sized basketball court. All other functions (track, tennis, volleyball, etc.) can be strategically placed to fit within the basketball court’s dimensions.

Similar to the use of the cafeteria, the gymnasium space requires a lot of space for little programming. As a result many schools will place a raised platform or stage on one side. This allows to conserve on overall square footage while offering a place for all school assemblies, holiday plays, community events and other activities that require large seating arrangements.

**Education Areas** – The younger a child is, the more self contained the classroom really needs to be. For K–3 grade students, the rooms require facilities for teaching various subjects, such as language, mathematics, reading, arts and crafts, music, social studies and science. As the children are younger and can often get confused or distracted, it is preferred that all the classroom serves all the educational needs without having to leave the room (except for lunch, bathroom breaks and playtime outside).

As the children advance in their studies, many of the extracurricular activities are taken out of the classroom and given their own space. These satellite classrooms (arts and crafts and music) require their own faculty and as such separate staff offices are often placed in these rooms.

**Daylighting** – A well integrated daylighting strategy has a greater positive impact on school than any other sustainable design measure. Daylighting is not just adding a lot of windows however. If uncontrolled sunlight is streaming through the classroom window and into a student’s face, the teacher will simply close the blinds and negate your design strategy altogether. Instead think about how you can utilize glazing and exterior shading devices to allow for a daylighting strategy to provide superior lighting for at least two-thirds of the daylight hours during the year.

# ADDITIONAL RESOURCES

## ADDITIONAL CONCERNS

One of the main challenges of this competition is to design an attractive and modern school that will continue to serve the needs of its community in a safe and secure manner for years to come. In many communities educational buildings serve not only as the central meeting hall but as the building ground for future buildings both civic and public. The minimum estimated floor space required for the school is 50,000 s.f., but this is your opportunity to develop a functional and secure flagship design that will serve as a new architectural identity for your selected site's community.

This competition uses the USGBC LEED for New Construction Rating System™ which is designed to guide and distinguish high-performance commercial and institutional projects, including office buildings, high-rise residential buildings, government buildings, recreational facilities, manufacturing plants and laboratories. Utilize Version 2.2 as your guidelines towards creating a sustainable building.

The LEED for New Construction Rating System™ is trademarked by the US Green Building Council. While AIAS design competitions include specific building products and services like rating and credentialing programs, this should not necessarily be construed as an endorsement by the AIAS.

Depending on the selection of the site, some or all of these design elements are required in the design of this facility. All site improvements should be designed to help in the overall performance of the building and must meet local building and zoning codes.

- Vehicular Access
- Bicycle Access
- Parking
- Bicycle Racks
- Site Lighting
- Storm Water Run-off
- Trash Collection/Recycling

Kawneer North America Architectural  
Aluminum Building Products  
[www.kawneer.com](http://www.kawneer.com)

Go to the "Products" section to learn about  
the full range of Kawneer Products.

Kawneer's Instructional Booklet on K-12 School Design  
[http://www.kawneer.com/kawneer/north\\_america/en/resources/capabilities.asp?type=edu](http://www.kawneer.com/kawneer/north_america/en/resources/capabilities.asp?type=edu)

Kawneer North America Sustainable Solutions  
[www.kawneergreen.com](http://www.kawneergreen.com)  
Learn how Kawneer Product can help earn LEED Points.

U.S. Green Building Council  
[www.usgbc.org](http://www.usgbc.org)

Great Schools by Design  
<http://www.archfoundation.org/aaf/gsb/index.htm>

Accessibility/ADA (US Access Board)  
<http://www.access-board.gov>  
800.872.2253

Time-Saver Standards for Building Types, Fourth Edition  
McGraw Hill Publications

Building Type Basics for Elementary and Secondary Schools  
Bradford Perkins and Stephen Kliment

Additional resources can be found at  
the competition website:  
[www.aias.org/kawneer](http://www.aias.org/kawneer)

# CONTACT

American Institute of Architecture Students  
Attn: Schools for Tomorrow Design Competition  
1735 New York Avenue, NW  
Washington, DC 20006-5292  
T 202.626.7497  
F 202.626.7414  
E [competitions@aias.org](mailto:competitions@aias.org)  
[www.aias.org/kawneer](http://www.aias.org/kawneer)