

AIA New Hampshire

The American Institute of Architects

2022 High School Design Competition

Sustainable Living and Education Center



Design Brief

Sustainable Living and Education Center

Educational Objectives

- To increase awareness of the relationships between space, human-scale and function.
- To gain experience in recognizing the various challenges in planning and designing indoor and outdoor spaces for specific uses.
- To exercise analytical abilities and creativity in solving the problems you have defined.
- To practice communicating your planning and design ideas utilizing scale drawings and models.

Participation Requirements

Every participant must be a current high school student in the state of New Hampshire. Students may work individually or in teams. Teams may not consist of more than three students.

Registration

Instructors must send a list of their student participants to the AIANH office by Friday, February 18, 2022.

Send the list to Bonnie Kastel, Executive Director, bkastel@aianh.org

Timeline

Registrations due: **Friday, February 18, 2022**

Entries due: **Friday, May 27, 2022, at noon**

Awards event: All students and instructors will be invited to the AIANH Awards Presentation. This event will be online with the date announced later month.

Introduction

This year's AIANH Competition will be to design a facility (Sustainable Living and Innovation Center) that will serve to educate, promote, and test innovations in sustainable living and new green technologies. This building will not only showcase current green living trends and products but will introduce what is to come. This highly adaptable building aims to look at the future and inspire the public's imagination on how we live and interact with the environment. This forward-thinking program demands a design that evokes excitement and a sense of exploration.

Sustainable Living and Innovation Center

This center will serve as a combination exhibition space, learning center, public resource, meeting place and research testing ground. The facility and surrounding site will provide a place open to the public that will foster a wide range of community activities and events related to sustainable living design and technology. It is expected to draw a wide range of people including the public, researchers, students and individuals interested in learning or involved in green practices.

Site Plan available for download from:

<https://www.aianh.org/education/outreach/high-school-design>

Note: PDF file contains height and dimensional information that are inherently available in DWG/SketchUp files.



Sustainable and High-Performance Design

A fundamental goal of this building is to embrace sustainability. To reduce the overall impact of the building in the environment, the pavilion will integrate innovative green building strategies such as:

- increase energy efficiency through the use of natural day lighting and smart shading systems
- water efficiency through the use of low flow fixture
- use of renewable energy to help achieve Net Zero energy consumption
- materials which will reduce consumption, pollution and waste
- materials that will be durable and do not require special maintenance

Sustainability Resources

[AIA Framework for Design Excellence](#)

[NH State Energy Code](#)

[LEED](#)

[Green Globes](#)

[Whole Building Design Guide](#)

[Energy Star](#)

[Northeast Sustainable Energy Association](#)

Building Area Needs

The Sustainable Living and Innovation Center will be a one-story structure. There is no pre-determined height, however the height must respect the surrounding environment as well as complement the buildings' function and design.

Exterior Spaces

- Outdoor Exhibition Space: This exterior space may include exhibitions, large mock-ups for green building systems and the latest alternative fuel cars on display.
- Green Roof/Roof Garden Terrace: This roof should be utilized to its maximum potential. This may include a green roof or vegetable garden that will grow produce for the center's café as well as outdoor space for visitors to sit, linger and have lunch. It will also showcase innovative roofing systems to the public.
- Alternative Transportation: Consideration should be given to adding amenities around the site which would promote the use of alternative transportation and fuel. This would include bike racks and electric car charging stations.

Interior Spaces

- Main Entrance & Lobby (250 sq. ft.): This will serve as the gateway into the building from the exterior and must be easily visible to the public. The lobby includes a large digital display wall that will announce upcoming exhibits, events and information on the current installations occurring around the building. There will also be a small information desk for greeting and assisting visitors.

- Exhibition Space (100 sq. ft.): This space is where the latest exhibitions and event gatherings will occur. This space should be flexible for many uses. It should have an abundance of natural light. In addition to incoming exhibitions at least four integrated digital kiosks will provide visitors with information on the current exhibits. This space should be close in proximity to the lobby and have a connection to the exterior exhibition space. The exhibition space should have high ceilings and may exceed one-story.
- Lecture Hall (800 sq. ft.): This small lecture hall will provide a meeting place for education lectures and presentations. A small, elevated stage should be provided for guest speakers and presenters. This room should be able to seat at least forty people.
- Resource Library (700 sq. ft.): This library will provide educational facilities for visiting students and the public. This library will house printed material as well as a digital library of sustainable products and practices. This space should include bookshelves, areas for reading and tables with computers.
- Café (500 sq. ft.): This organic café will serve food and drinks from local farms to the public as well as the organized events. It will also help to educate the public on sustainable agriculture and healthy eating. This space must have direct access to the exterior and seating should be provided at an adjacent outdoor space.
- Food Preparation Area and Supply Room (150 sq. ft.): This space is where food is prepared and must be adjacent to the Café. A supply room where stock food and supplies are stored must be adjacent to the food preparation area.
- Public Circulation: Interior circulation, corridors.
- Administrative Office (100 sq. ft.): This space is used for the day-to-day operations of the building including events and exhibit preparation.
- Two Restrooms (300 sq. ft.)
- Custodian's Closet & Storage (25 sq. ft.): This closet should be adjacent to the restrooms.

Accessibility

All public buildings must be fully accessible. This includes accessible parking spaces with an accessible route from the parking to the building entrances, an accessible route to all public spaces and staff workspaces, and public restrooms. Exterior spaces should also be accessible.

Accessibility Resources

[Americans with Disabilities Act](#)

[NH Governor's Commission on Disability](#)

Submission Requirements

For 2022, entries will be submitted electronically. No physical boards or models will be accepted.

Digital entries must also be submitted in the format outlined below.

Project graphics may be produced manually drafted or in the CAD or BIM software of your choice. Graphics, photographs and narrative as outlined below will be assembled digitally onto up to two (2) 20" x 30" "boards" using software such as PowerPoint or InDesign. A single PDF will be output from the software and submitted as outlined below. Manually drafted graphics will need to be scanned and imported digitally onto the board(s). No individual PDF files will be accepted. All entries must be a single PDF of the project board(s).

- Design sketches, design process and inspiration information (big idea or parti)
- Site plan
- Floor plan
- Exterior and interior elevations or 3D views produced digitally
- Building section(s)
- 1/8" scale physical monochromatic model - model size limit is 20"x30" max. Photograph the physical model and include black and white photographs on the above presentation boards.
- Brief project narrative – Compose a thoughtful and concise text summary (approximately 150 words) describing your building design. This can include but is not limited to:
 - The main ideas and goals behind your design
 - How the building is organized
 - How you envision people occupying the building

Digital Board Example



Awards

Certificates and monetary awards will be presented to the top winners in each category below at the discretion of the jury:

- Best Design, Overall Superiority, in all aspects of Design Solution, Model and Graphic Presentation
- Best Model describing Design Solution
- Best Graphic presentation describing Design Solution
- At the discretion of the judges, certificates will be presented to other submissions that are noteworthy.

How to use Submittable

Submittable: <https://nhforum.submittable.com/submit>

You will need to create an account on Submittable before you can start your submission. There is no cost to create an account or submit projects to this competition.

Once you have an account, select the 2022 AIANH High School Design Competition from the list of available competitions.

Fill out the application form completely and upload your materials.

You can save your application as a draft while you work on it. We will not see your application until you have submitted it.

It is recommended to use Chrome or Firefox browsers for submissions made through Submittable.

If you encounter technical difficulty with your submission, please contact: Submittable Tech Support at: (855) 467-8264, ext. 2 or support@submittable.com.

Non-technical questions can be addressed to: Bonnie Kastel, bkastel@aianh.org