

AIA New Hampshire

The American Institute of Architects

2024 High School Design Competition



Design Brief

USS Albacore Park & Submarine History 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 9.

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

Timeline

Registrations due: **Friday, February 16**

Entries due: **Friday, April 19, 5pm**

Awards event: **Thursday, April 25, Keene State College**

All students and instructors will be invited to the AIANH Awards Presentation

Introduction

Portsmouth Naval Shipyard has a venerable heritage and rich traditions in shipbuilding and submarine construction. It is this great legacy that will serve as the basis for this year's design challenge.

"In 1953, Portsmouth Shipyard built ALBACORE (SS569), a dramatic advance in submarine design. Reputedly the fastest and most maneuverable submarine of the time, ALBACORE had been on the Portsmouth drawing boards since 1950. It was the consequence of the Navy's planning far into the future in the field of underseas warfare. This experimental ship of advanced hydrodynamic form, equipped with the most modern instrumentation and control devices, was the means of obtaining data essential for the development of the present fast attack and ballistic missile nuclear powered submarines and the even more advance submarines of the future." (Source: "Cradle of American Shipbuilding", published by the Portsmouth Naval Shipyard, December, 1978)

This year's AIANH Design Competition will be to design the **Submarine History Center at Albacore Park in Portsmouth, NH**. This history center will be designed for the continued display of the USS Albacore, serve as a vessel to honor submarine history in New England as well as to display many unique Naval artifacts.

Downloadable Docs:

Sitemap: <https://aianh.org/sites/default/files/Albacore%20site%20plan-baseplan.pdf>

Albacore Drawing Model: <https://www.aianh.org/sites/default/files/Albacore Drawing-Model.pdf>

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 Program and Area Needs

The Submarine History 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. Assume the existing Visitor's Center will be demolished.

Interior Spaces

(Actual space provided may vary by up to 10% of the target square footage listed)

- **Entrance** (350 sq. ft.): This space serves as a main entrance into the building and must be recognizable from the exterior with a clear purpose. Must be easily visible from the information desk.
- **Information/Admission desk** (125 sq. ft.): Space for two staff members to welcome visitors and direct them to appropriate areas of the building or site as well as handle admission and cashier function for the Gift Shop. Must have direct visual access to the Main Entrance, and maximum visual access to all other public spaces.
- **Submarine Plaque wall** (30 linear ft.): Allow for a prominently located open wall space for display of submarine plaques similar to those currently on display at the Albacore Park Visitors Center.
- **Gift Shop** (400 sq. ft.): Low fixtures and shelving for merchandise, adjacent to main entrance.
- **Staff Office** (120 sq. ft.): Main director office and storage of financial records.
- **USS Albacore Submarine display:** The existing submarine will remain in its current location on the site due to its size. A new building enclosure around the submarine is required to regulate temperature and humidity and to preserve the submarine and reduce the annual maintenance of the exterior. The submarine display space should be accessed directly from the "Large Display space".
- Assume that the existing ravine sloping sides will be replaced with a new recessed "dry dock" with engineered vertical retaining walls to allow full display of the vessel on its stand.
- Access into and out of the vessel with suspended walkways will remain.
- Sufficient perimeter space should be included for viewing. The submarine is over 205' long and over 27' wide.
- The enclosure must be of sufficient height to clear the "bridge" (top portion of the submarine which protrudes above the aerodynamic body) Therefore the roof height is permitted to exceed that of the rest of the museum.
- The enclosure should allow for maximum visibility of the submarine from outside, especially from Route 1, on site parking and the entrance driveway.
- **Large Display Space** (2,000 sq. ft.): An open space for display of Naval artifacts currently housed at the Portsmouth Shipyard. Must be adjacent to and offer direct views of the USS Albacore submarine.
- Photographs of sample artifacts (with captions) to be displayed is attached to this document.
- **Display support room** (800 sq. ft.): Storage of materials, records, gift shop inventory and artifacts not on display. Must have convenient access from the parking area for loading/unloading.

- **Exhibit Workroom** (150 sq. ft.): A workshop for preparation of exhibits as well as submarine fixture/equipment maintenance. Must be adjacent to the Large Display space and the Staff Office.
- **Small Theater Room** (400 sq. ft.): Seating in rows for approx. 20 with overhead projector & screen.
- **Accessible Restrooms** (size as required): One restroom for each gender. Include two Water Closets with toilet partitions (one of these may be substituted for a urinal for the men's room) and two lavatories in each restroom. One gender neutral/family restroom shall be provided for individual use. It must contain a toilet and lavatory as well as a fold-down changing table.
- **Utility Closet** (100 sq. ft.): Service sink and janitorial equipment.
- **Public Circulation:** Interior circulation, corridors as required. Use exhibition and/or display spaces when possible to provide circulation.
- **Mechanical Room** (100 sq. ft.): Room for electrical and mechanical/sprinkler equipment.

Exterior Spaces

- **Memorial Garden:** This existing exterior space has been set aside for reflection and remembrance. Within the garden are several granite monuments commemorating submarines lost during World War II and the Cold War.
- **Parking Areas:** Existing parking on site should remain. Minor reconfiguration of the parking spaces adjacent to the building site are allowed to provide Accessible parking closest to the main entrance.
- It has been noted that the overgrowth of the existing buffer of trees along Route 1 has unintentionally cut off vision to the Albacore for traffic passing by. These trees should be removed or selectively cut and illustrated on the site plan.

Visit to Albacore Park

It is recommended that students visit Albacore Park and Memorial Garden if possible. It is not a requirement for submission to the competition. The website contains a lot of information about the Albacore and there are many resources online as well.

For more information on Albacore Park please visit <http://www.ussalbacore.org/>

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 2024, entries will be submitted electronically via the online portal, Submittable. We welcome students to bring their physical boards and models to the event at Keene State College where they will be displayed.

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)
- 1/16" 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 cash 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 2024 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