ADDRESS: 11 BOATHOUSE ROW
Proposal: Remove addition, construct addition
Review Requested: In Concept
Owner: University of Pennsylvania
Applicant: Ke Feng, University of Pennsylvania
History: 1875; College Boat Club of the University of Pennsylvania
Individual Designation: 1/5/1984
District Designation: None
Staff Contact: Laura DiPasquale, laura.dipasquale@phila.gov

BACKGROUND:
Opened in 1875 for the College Boat Club of the University of Pennsylvania, 11 Boathouse Row features several building campaigns spanning over a century. The core of the property is the original two-story stone Victorian Gothic boathouse dating to 1875. A two-bay wide addition, which is one story at the north, and two stories at the south, was added to the east circa 1920. In 1980, a one-bay wide addition was added to the west side of the building, after being reviewed and approved by the Historical Commission. Plans for the addition are in the Historical Commission’s files and show that an addition was also proposed on the east side of the building, where the current work is proposed, but was never realized. This addition would have retained the two-story portion of the 1920’s addition at the south facing the Schuylkill River, and demolished the remaining one-story portion of the addition that extends to the north, replacing it with a lower 1.5-story addition with similar detailing to the addition to the west.

This in-concept application proposes to demolish the 1920’s addition and to construct a new addition in the footprint of the historic addition, but with considerably larger massing. The new addition would be two bays in depth, and feature two cross-gabled portions extending from the roof of the 1875 building at the north and south, with large modern dormers with recessed doors to create balconies. The intersecting gable roofs of the addition would sit just below the ridgeline of the 1875 building, obscuring the remaining portions of the roof from view. The area between the gabled-roof portions of the new addition would feature an asphalt-shingled mansard with a tall parapet to conceal rooftop mechanical equipment.

The application also proposes to enlarge the south-facing dormer of the 1980’s addition to match the modern dormer balconies proposed on the new addition to the east, to reconstruct the south-facing balcony on the 1875 building, and to install historically-appropriate windows and doors.

SCOPE OF WORK:
- Demolish eastern additions
- Construct new addition
- Modify dormer on western/1980’s addition
- Reconstruct south-facing balcony and install historically-appropriate windows and doors on 1875 building

STANDARDS FOR REVIEW:
- **Standard 9:** New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be
differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

- The proposed addition removes historic fabric that characterizes the property, and overwhelms and almost completely obscures the original 1875 building, destroying spatial relationships that characterize the property. A key feature of the proposed addition are the very large, modern dormer windows, which are overly differentiated from the old and not in keeping with the features of the historic building. The scale, massing, and proportions of the addition are also incompatible with the historic building. The application fails to satisfy this Standard.

**STAFF RECOMMENDATION:** Approval of the restoration work to the 1875 building, but denial of the proposed addition, pursuant to Standard 9. The staff contends that the proposed use could be accommodated with considerably less massing than is proposed.

**ADDITIONAL FIGURES:**

![Figure 1: South elevation of original 1875 boat house, c. 1904](image1.png)

![Figure 2: South elevation, circa 1930, after 1920's addition to the east.](image2.png)
Figure 3: South elevation, circa 1970, prior to construction of western addition.

Figure 4: Current south elevation.
Figure 5: Proposed north elevation, 1980, showing east and west additions.

Figure 6: Proposed east elevation, 1980, showing retention of 1920’s addition to the south, with new addition to the north.
Figure 7: Proposed 1980 floor plan. Dark walls indicate existing construction to remain.
Figure 8: Birds eye view looking northwest at the 11 Boathouse Row.
UNIVERSITY OF PENNSYLVANIA BOATHOUSE
RENOVATION & ADDITION TO THE PENN BOATHOUSE
11 Boathouse Row, Philadelphia, PA 19130
Applicant: University of Pennsylvania
EwingCole

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PROJECT GOALS

◊ Showcase Penn Rowing
◊ Increase Usable Space
◊ Improve Overall Functionality
◊ Bolster recruitment
◊ Expand and Upgrade the Locker Rooms
◊ Remediate Existing Structural Concerns
◊ Improve Training and Team Spaces
◊ Preserve a Historic Landmark

EXECUTIVE SUMMARY

The University of Pennsylvania College Boat Club crew teams have been at the forefront of elite college rowing teams since first rowing under the UPenn banner in 1879. The College Boat Club is recognized for its historical significance at the local and national levels. The site is individually listed in the Philadelphia Historic Register. Below is a timeline of construction:

• 1874-1875 Initial construction of two story, one-bay by three-bay boathouse
• 1920 North gable end extended to north, one story boat bay addition to east (Edward F. Hoffman, Jr., Architect)
• Circa 1930 Second story built over south end of 1920 east addition
• 1980-1983 Two-story west addition, second story over north end of 1920 east addition, new fire stair, all windows replaced (Francis Cauffman Wilkinson & Pepper, Architects)

The College Boat Club as it stands today has a near-center stone gable (the original boathouse) with lower stucco additions to the east and west. The form and height of the additions allow the original building to predominate the composition on the north (Kelly Drive) and south (Schuylkill River) elevations. These relationships will be maintained in the new Project.

The proposed project will retain and restore the original stone boathouse and 1980-83 west addition, including preservation of existing original trim and reconstruction of the original windows and doors on both the north and south elevations, as well as the original south balcony. The east additions are proposed to be demolished (see page 7, Structural Narrative). The first story, built in 1920, will be reconstructed, including the stucco finish, wood trim, windows and doors, all character-defining features of this addition. A new second story will be built in the spirit of the existing c. 1930 addition, the principal changes being the addition of larger shed dormers on the south and north elevations, to accommodate new glazed doors onto new balconies. A steep-slope mansard roof, similar to the existing roof, will connect the two gables on the east elevation and mask rooftop HVAC equipment from view. The 1980-1983 west addition will be retained and restored.

Aspects of the boathouse interior that are considered character-defining, and will also be preserved and restored, include the original “members room” on the second floor of the original boathouse, with its decorative exposed truss ceiling and bead-board walls. The character of the 1920 boat bay interior is also worthy of mention, with its exposed wood framing and sawtooth roof and skylights which will be recomposed and define the character of the new Erg Room on the second floor. The interior rehabilitation will also preserve and expose the original exterior stonework at the second floor of the east (side) wall. Second floor windows on this east wall will also be retained, and re-purposed as doorways between the original building and new east addition.

It is a primary objective of this project to provide space and program equity for the men and women crew programs. The original facility, despite multiple additions, has been unable to keep pace with the increased volume of members and program needs. The boathouse footprint is currently maximized relative to its neighbors, Penn AC and Vesper, property lines; additional space is only available through the construction of a second-floor infill addition over the one-story boat bay as proposed. In addition to programmatic expansions and functional improvements, this project will also upgrade all building systems, including heating, cooling, security, and fire protection. Heavy use of the building, wear and tear, exposure to weather, further compounded by settlement of the building and aging infrastructure, inevitably lead to the need for repairs and restoration of parts of the boathouse.
EXISTING

11 Boathouse Row, Philadelphia, PA 19130

East Elevation, 07.30.2019

Existing West Elevation, 07.30.2019

Exterior from the Schuylkill, 12.05.2019

Exterior from Kelly Drive, 12.05.2019

Exterior from the Schuylkill c.1930

Exterior from Schuylkill, 12.05.2019

West Elevation, 07.30.2019
EXISTING EAST & WEST ELEVATIONS

West Elevation, 07.30.2019

East Elevation, 03.04.2018

East Elevation, 07.30.2019

East Elevation, 12.05.2019
1874-1875 Original Pavilion
1920 - Addition
C.1930 - Addition
1980 - Addition
Through the design process, the team considered several massing iterations to best fit the program while carefully balancing the site constraints. Massing iterations looked at vertically growing the building, as well as morphing the overall gable pattern. The diagrams above show the preferred massing option which minimally changes the appearance of the existing Schuylkill elevation. The massing also takes advantage of the existing footprint and creates additional square footage through a second level infill.

The proposed addition will continue the building's massing horizontality and enhance its expression through contemporary detail. The exterior material palette connects to original with its use of stucco, proposed faux slate on the east bay addition, and the use of stone.
The original boathouse was constructed in 1874 with the east and west wings built in 1921 and 1980, respectively. The west wing is a two-story addition constructed of concrete masonry, steel and wood and was built to house the women’s boats. The second floor of the west wing was constructed at a different floor elevation than the floor elevation of the original boathouse. The original east wing was a one-story shed structure that was modified in the early 1930's to include a small vertical addition on the river side. It currently houses the men’s boats.

The east wing was constructed primarily with dimensional wood construction forming the exterior stud walls on three sides and the roof. These perimeter walls bear on short concrete foundation walls that do not bear on continuous spread footings. This has accounted for some of the settlement that these walls have experienced. The roof, with its multiple roof monitors, is supported at the east perimeter, west original boathouse masonry wall, and at its centerline by several timber columns that bear on shallow spread footings.

A structural condition assessment was completed for the east wing to determine if the structure could support a full overbuild addition. The assessment determined that the existing foundations, roof framing members, and columns have insufficient vertical load capacity and lateral load resistance to support the code required loads for the proposed program designated for the second floor. An attempt to strengthen the existing roof framing would result in a significant loss of vertical height within the boat bay that would severely diminish the vertical space required to maximize boat stacking. Compounding the loss of vertical space would be the additional loss of footprint to introduce supplemental columns. In addition, all of the foundations would need to be underpinned to increase their bearing capacity. This would be a risky operation in soils that are not known for their cohesiveness.

The proposed two-story addition would be constructed on the footprint of the current east wing. The structure would consist of a cast-in-place concrete supported second floor overtopped by a structural steel and timber roof structure. The new concrete columns would bear on reinforced concrete pile caps supported by mini-piles. The structure would be designed to conform to flood plain management requirements. Other additions would include an elevator within the footprint of the original boathouse. Overbuild construction or construction of a new floor level will be required at the original boathouse’s second floor to provide a more uniform second floor elevation for ADA accessibility. Decayed framing within the 1921 addition at the front of the original 1874 boathouse would also be repaired and supplemented.
PROPOSED VIEWS

North Elevation Rendering from Kelly Drive

South Elevation Rendering

View from the Kelly Drive

View from the Schuylkill
EXTERIOR MATERIAL PALETTE

- **Asphalt Shingle**
- **Synthetic Slate** (Alternate)
- **Stucco**
- **Wood Trim to Match Existing**
- **Aluminum Clad Wood Windows**
- **Stone Base to Match Existing**
- **Balcony East & West: Painted Steel**
- **Middle Bay Balcony: Wood**
An essential component of the addition’s unique expression are the two modified skylights on top of the East Bay. The diagrams below show a series of derivative transformations and design thinking behind the positioning and proportion of the skylights.

The addition of 1920 created a series of sawtooth like light monitors which directed light into the substantial Men’s Boat Bay. The design team saw the light element as essential to the evolution of the project. Working with the historic roof, the new “sawtooth” was introduced by aligning it’s top with the original dormer ridge. To maximize natural light within the Erg room, a second skylight system is introduced to the south gable. The modified skylight in the middle is designed to minimize its visibility from the sidewalk and Kelly Drive. The skylight system is also proportional to the front and back shed dormers.
SIGHTLINE STUDIES

Per Office of the University Architect’s recommendations, a parapet on the east elevation was raised to screen equipment. The parapet was raised 42” above the membrane roof while remaining below the center ridge.

On the left, the photo shows existing conditions of the east side facade. In the bottom left corner, the render shows the impact of visible equipment and skylights. As a solution, the rendering below visualizes the scale of the roof, and the height of the parapet seen from the bike path. The raised parapet conceals the equipment and skylights.
SIGHTLINE STUDIES

To ensure that the roof equipment is hidden from sight, a series of sightline studies were conducted. The proposed layout of the light commercial roof equipment includes two heat pumps/air conditioner units with VRF condensing units positioned in between.

The study examined equipment visibility from distances up to 100’ from the front elevation. This included eye level views from the Schuylkill River Walk and across Kelly Drive. To provide optimum views from the interior, the equipment was positioned at a distance of 14’-6” away from the modified skylight.

Sightline studies also covered views from the Schuylkill Expressway, at distances 650’ and 700’ from the Penn Boathouse. Based on the studies, the equipment layout was modified and eliminated any visibility.
EXISTING VS PROPOSED: EXTERIOR ELEVATIONS

EXISTING: North Elevation

EXISTING: South Elevation

PROPOSED: North Elevation

PROPOSED: South Elevation
EXISTING VS PROPOSED: EXTERIOR ELEVATIONS

EXISTING: West Elevation

PROPOSED: West Elevation

EXISTING: East Elevation

PROPOSED: East Elevation

REBUILD / NEW CONSTRUCTION
EXISTING VS PROPOSED: EXTERIOR ELEVATIONS

EXISTING: View of the North Elevation

PROPOSED: View of the North Elevation

EXISTING: View of the South Elevation

PROPOSED: View of the South Elevation

REBUILD /NEW CONSTRUCTION
EXISTING VS PROPOSED: EXTERIOR PERSPECTIVES

EXISTING: View of the West Elevation

PROPOSED: View of the West Elevation

EXISTING: View of the East Elevation

PROPOSED: View of the East Elevation

RENOVATION / ADDITION TO THE PENN BOATHOUSE

11 Boathouse Row, Philadelphia, PA 19130

REBUILD / NEW CONSTRUCTION
EXISTING & PROPOSED: ENTRY

Existing Interior View of the Entry 07.30.2019

Proposed Interior View of the Entry
EXISTING & PROPOSED: GRAND HALL

Existing Interior View of the Grand Hall 07.30.2019

Proposed Interior View of the Grand Hall