

*"The United States Coast Guard's new Cleveland Moorings project is one of the most recently completed projects by C.T. Taylor Construction. C.T. Taylor is proud to have been a partner in the Design/Build team."*

## Headquarters on the Harbor

### U.S. Coast Guard completes first phase of Cleveland Moorings Project along Lake Erie

By Doug Bardwell | Photos by Ken Krych

**W**atching over commercial and recreational boating on Lake Erie, the United States Coast Guard has been protecting our north shore from its current Cleveland location since World War II. Now, finally, the Coast Guard has new facilities designed for its expanded role in our homeland security effort.

On a three-acre site at the northeast corner of East Ninth Street and North Marginal Drive, the new Cleveland Moorings Project is wrapping up phase one of a three-phase project. October 16 saw the ribbon cutting for the new 25,000-square-foot operations, administrative and crew berthing building. With multiple nautical references in the architecture of the building, it is poised to keep watch over our Great Lakes for years to come.

The new building is specifically designed to house Marine Safety Unit Cleveland, Station Cleveland Harbor and Electronics Support Detachment Cleveland. Berthing rooms provide space for active duty operations personnel; and if there were an emergency call-up, additional personnel could be housed as well. Phase II will see a new 9,000-square-foot boat maintenance annex with engineering, shop and storage facilities built on the site of the previous station which has now been demolished.

The former facilities on the site were pre-engineered buildings purchased for the war effort back during World War II. Two barracks-style buildings were shipped to the site, adapted as best possible and occupied. Over the years, additional buildings were erected and modified as the capabilities and responsibilities increased for Cleveland's approximately 100 Coast Guard personnel.

Thinking back to WWII, there were no women in the Coast Guard at that



time. The boats are now longer, wider, faster and have different mooring and maintenance needs. Electronics have also become vastly more evident and essential to their mission as well. It was obviously time to plan a facility that could accommodate these changes.

However, since the station sits on such prime real estate, there had been talks about relocating the facility for years.

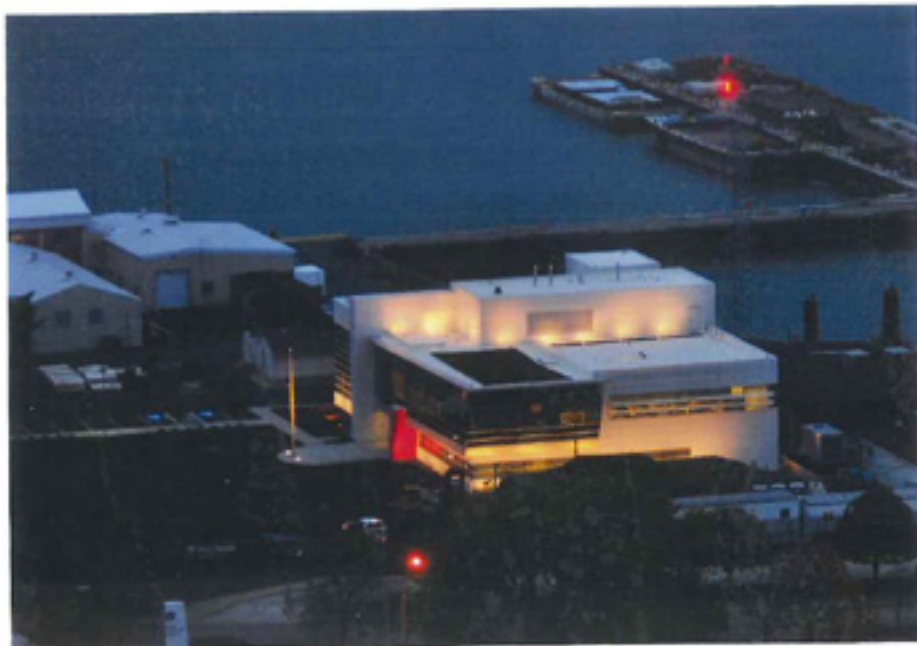
"Way back in the Mayor White days and in subsequent administrations, they were looking for alternate locations for our facility," says Doug McCann, chief of the Coast Guard Resource Planning Branch. "With the deep water needs of our 140-foot long Cutter Neah Bay and protected moorings for our smaller boats, there really wasn't a better location."

After 9/11, former Senator George Voinovich was instrumental in championing funds for a new facility. Finally, a \$16.8 million package was included as part of the fiscal year 2010 Homeland Security Appropriations Bill. Through the efforts of the Scaparrotti Construction Group team, costs were managed such that both phases one and two could be achieved for this initial funding amount.

The design-build competition saw firms from across the country vying for the project. "The solicitation had a Small Business component to it," says Rick Sias, project manager for Scaparrotti Construction Group, "which helped us compete for this award."

Working with Perspectus Architecture, they put together a package that met all





**RESPECTFUL WELCOME** Inside the new station (top), the entrance lobby (center) includes glass display cases with maritime memorabilia and stairs leading to the two main Coast Guard units on the second floor. The canteen (bottom) includes a full kitchen and dining area for Coast Guardsmen utilizing the facility.



requirements and gave the Coast Guard even more than they had expected. Sal Rini, AIA, senior project director for Perspectus Architecture, saw the opportunity to create an upper level observation deck, providing the on-duty personnel with an effective view of Lake Erie and beyond the break walls.

"We wanted to stay with simple forms in the building's design to blend with the nearby Science Center, Rock and Roll Hall of Fame and Museum and Cleveland Browns Stadium," Rini says. "The building design needed to project the Coast Guard's image, not only for the present, but also for future years to come."

The building's southwest corner resembles the bow of a ship, Rini notes, supported by the red, white and blue Coast Guard mark accenting the entryway facing East Ninth Street.

A tall vertical component to its north houses a stairway and plays off the idea of a ship's tall mast.

"We wanted this to be consistent with the neighborhood and so most of the references are subtle – maybe only noticeable to those in the service," says McCann. "However, when we saw the presentation during the proposal phase, we were just delighted with the design."

"We were thrilled when the Phase One award was announced, as we faced significant national competition," Rini says.

The bid was awarded in 2010 and construction started in April 2011. Scaparotti brought on C.T. Taylor to handle subcontractor selection and contracting. "We've had a long and outstanding relationship with C.T. Taylor, especially on our K-12 education projects," Sias says.

C.T. Taylor had a track record of achieving green building standards, which were integral to this project. "Our challenge on this project was to find just the right subs for each of the







**GOOD FIT** As depicted in the architect's rendering, the new Station is designed to blend with the fabric of the North Coast Harbor.

sophisticated systems being planned on this project," says Matt Collier, director of construction management services at C.T. Taylor.

This was Scaparotti Construction Group's second LEED Gold design-build project with Perspectus, Sias notes. "So we knew we had an outstanding team," he says.

From the beginning, the project partners were targeting LEED Gold certification, adds Rini. "Our in-house LEED team was able to guide the design," he says. From bow to stern, the team incorporated innovative ways to achieve the Coast Guard's goals and even exceed many LEED standards.

The RFP had strict space requirements with specific room sizes, adjacencies and ceiling heights that made for some interesting challenges. Luckily, the construction documents were created using BIM software and it enabled the team to see conflicts early on in the design process.

The other significant challenge was to keep the existing building completely operational until the new building opened. Only 20 feet away, with undocu-

mented utility feeds, the proximity made for constant surprises. Luckily both owner and contractors kept in constant communication and things worked to everyone's satisfaction.

Inside, the building is heated and cooled with a high-efficiency, variable refrigerant heat pump system. Outside,

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**Sal Rini**

*Perspectus Architecture*

the combination of the glass, the building envelope and the mechanical systems gives the project a significant boost toward Gold certification.

Ray Hoon, mechanical associate with Karpinski Engineering, explains that "the building's overall energy reduction was 40.6%, with a cost savings realized of 38.6%. Combining

Greenheck dedicated outside air units with the LG variable refrigerant system, we have over 40 separate thermostatically controlled zones for significant energy savings." The outside air units provide a 30% increased ventilation rate above current ASHRAE 62.1 standards. The buildings mechanical and electrical systems are monitored and controlled by a direct digital control building automation system.

Keeping within LEED Gold standards was additionally challenged by specific Coast Guard needs. "Their personnel wear wet suits on patrol, and they need to have them completely dry before storing them," explains John Hitchcock, vice president of C.T. Taylor. "This required a lot of dehumidification which had to be factored in to the overall calculations."

Exterior walls benefit from Densglass sheathing over structural metal studs, with two-inch rigid foam insulation outside the shell and six-inch batt insulation inside the envelope. A rain screen composite white panel system provides the exterior surface with no caulk joints. Solar screening above the windows



controls sun load on the eastern and southern faces of the building.

Across the roof, an average of six inches of insulation is below the two-layer bituminous roof. Above the main entryway, a TPO roof membrane was used as a base under the vegetative roof, which is planted with hundreds of square feet of low maintenance succulents.

New water, fire and natural gas services had to be brought on site, due to the existing services being located below the proposed new building's footprint.

Some of the plumbing highlights include a grey water system that's used to flush all toilets. Water is captured from the sinks and showers, filtered and then fed back into the toilets. "Along with low consumption fixtures, the grey water system contributed to a 59% water use reduction, which is one of the highest we've ever done," says Hoon.

"We really had to look around for the right grey water system," explains Sias. "Generally, these systems are multiple components assembled on site, but we were looking for a compact unit that could be housed inside. Luckily we found a skid-mounted unit that slid right into place."

"The routine preventative maintenance of the grey water system and some other mechanical maintenance will be sub-contracted out to outside contractors," relates McCann. "We want our men and women to concentrate on their Coast Guard missions, so we'll have this work let out to professionals."

Electrically, Greg Blatnik, electrical associate with Karpinski Engineering, designed the new power feed that was brought in to serve the site. A perimeter duct bank has been installed around the property to serve the new and existing buildings. It will assure maximum flexibility for years to come. Unsightly overhead lines down East Ninth Street have now been replaced with underground wiring. For emergency purposes, a 600-kilowatt diesel generator was installed that should serve both Phase I and II.

Approximately one-half of the building is raised flooring with carpet squares over removable two-foot by two-foot concrete tiles for wiring flexibility. All rooms are controlled by lighting sensors attached to the building automation system. The automation system also handles exterior illumination which

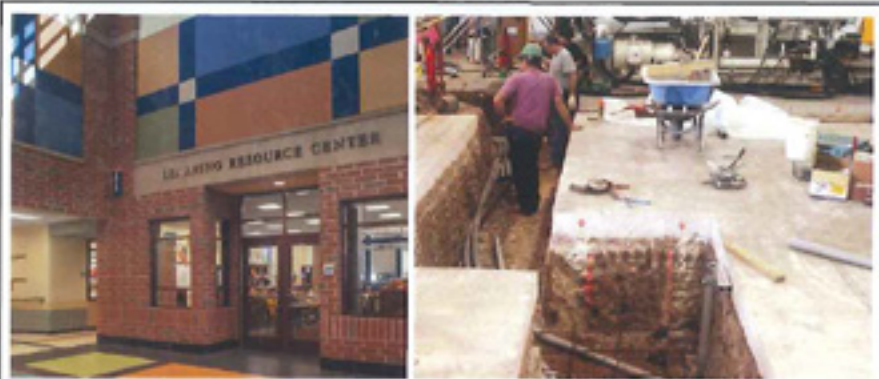
bathes the white building with a soft, almost ethereal glow at night.

As you enter the building from the main entrance, you enter a small but impressive two-story lobby with a stairway and elevator serving the two main Coast Guard units upstairs. Two glass cases in the lobby hold interesting maritime memorabilia. Most non-military personnel coming to the building proceed upstairs to the Marine Safety Unit.

One can't help but notice the three phrases in large, stainless steel letters

on the second floor balcony's soffit – "Honor – Respect – Devotion to Duty" – the three core values of the Coast Guard. The phrase that doesn't appear is "Appreciation" – something area residents and visitors alike feel each time the Coast Guard takes to the lake to protect our shores or save one of our boaters. Hopefully this new headquarters expresses how much their service is appreciated. **LD**

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