

DESIGN MATTERS

Oceans of Possibilities Realized at New Maritime Academy

By Jeffrey Stein

HKT ARCHITECTS HAS DESIGNED A NEW engineering education building for the Massachusetts Maritime Academy in Bourne, at the head of Buzzards Bay. It is a building that is simple in plan, clear in execution, and the laboratories and classrooms it contains – plus the particular way it contains them – are likely to energize engineering education at the school.

The Massachusetts Maritime Academy is well known as the nation's oldest maritime college. Home to a thousand students, co-educational since 1977, it was founded by an act of the state Legislature back in 1891. HKT, comprised of partners William Hammer, Eric Kluz, Frederick Todd, Seth Goldfine and a staff of 14 others, is an architecture firm in Somerville best known for having built a design practice serving institutional clients like the Massachusetts Maritime Academy.

HKT has designed housing, hospitals, elementary and high schools. It has created sustainable civic buildings (its Cambridge City Hall Annex was the first municipal building ever to be certified under Leadership in Energy and Environmental Design, or LEED, guidelines) and has worked extensively at New England colleges. The Massachusetts Institute of Technology in Cambridge, the Franklin Institute in Boston, College of the Holy Cross in Worcester and Fitchburg State College are a few of them. HKT's work at the Massachusetts Maritime Academy has added 26,000 new square feet and renovated 29,900 existing square feet of the

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Storer Building, previously an unattractive, single-story box from the 1960s. Inside the new structure are airy classrooms, state-of-the-art engineering laboratories, faculty offices whose inhabitants gaze across a light-filled atrium to views of the sea beyond, and space that presents opportunities for cross-fertilization among engineering disciplines. More than that, the glassy 3-story building has transformed the center of this small campus, providing a crisp and energetic symbol for the school and its future.

It should come as no surprise that the United States trails many countries in the education of engineers. While we as a nation have engineering schools – several of the best of them right here in Massachusetts – we do not have many young people who hope to become engineers. Our country ranks 17th worldwide in the number of undergraduate engineers it produces. People like Commodore Rick Gurnon, acting president of the Massachusetts Maritime Academy, think how we design our engineering schools might help propel this statistic in a better direction. He and members of the state Division of Capital Asset Management – the client for this project – worked closely with HKT to make a building that will support the aspirations of young people at the academy, where fully 55 percent of its undergraduate students will leave with an engineering degree.

The clarity and form of the new Storer Building is primarily the work of a young project architect in the HKT firm. Aaron Binkley is a recent architecture graduate of Carnegie Mellon University, a school that – much like HKT itself – is committed to sustainability and technological advancement. Attention to those issues are



The Massachusetts Maritime Academy's new Storer Building in Bourne contains not only elements that call to mind ships and the nearby ocean, it also has been designed to safely ride out the worst onslaught that raging seas can create in the storm-surge flood zone in which it is located.

evident throughout this building: from sunshades that prevent overheating in summer to high-mounted light shelves that gain sunlight in winter; from thickened classroom floors that can withstand the point-loads of 20-ton diesel engines to exposed and finely detailed structural and HVAC systems, all the better to learn from when you can see and touch them.

Lots to Sea

Nautical imagery abounds in the design of Storer: horizontal lines, metal railings, curved forms, bolted connections, rod-and-turnbuckle crossbracing – the sort of details pioneered by Swiss architect LeCorbusier when he began quoting from the design language of ships in the 1920s. But because of the building's specific shoreline location – next to a "storm-surge flood haz-

ard zone" – the building not only looks like a ship, it must function like one. The new Storer's waterproofed concrete foundation walls extend 4 feet above ground and are designed to withstand the flood pressure of rising seas. And special water-impervious aluminum floodgates have been designed for each opening in the building's ground floor. These gasketed barricades, stored throughout the building, can be manually attached to doorframes at the first warning of impending flood. And since there is no hinge set manufactured today that will keep swinging doors on their frames in the fierce wind that comes off Buzzards Bay, sliding doors are the rule on the exterior of the building.

Aaron Binkley's most important contribution to this project was its formal organ-

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ization. He made three seemingly simple moves to make the design of the new Storer Building work. First, he stretched – just slightly – the new addition beyond the old building to which it is attached, so it would have a new presence on both ends of the existing structure. Then, he skewed the plan of the new building at a very slight angle to gain prominence on the site and to redirect views toward Buzzards Bay. Finally, he executed a series of refined details to make the building's scale and program work.

One of the strongest of those details, and perhaps the single most interesting part of the project, has not so much to

do with engineering education, even though it is a highly technical element of the building. Rather it has to do with creating a sense of place. Designed and installed with the help of a special window consultant, a 3-story curved wall of glass admits spectacular views to the building's public space and reflects the image of the surrounding water. It was the suggestion of Commodore Gurnon to make this glass wall and bring the visual experience of Buzzards Bay right inside the building.

The result of all this is an engineering building for the Massachusetts Maritime Academy that lets you know where you are and why you are here. ■