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Buoyant Ecologies Float Lab Launches in San Francisco Bay



CCA Buoyant Ecologies Float Lab deployed in the San Francisco Bay. Photo by Adam Marcus.

San Francisco, CA—September 8, 2019—On August 27, 2019, California College of the Arts (CCA) Architectural Ecologies Lab launched the [Buoyant Ecologies Float Lab](#) in San Francisco Bay for a three-year deployment as a research platform and environmental demonstration project. The Float Lab, a cutting-edge prototype for an ecologically productive floating breakwater, merges expertise from design, advanced digital manufacturing, and marine ecology to imagine a new kind of architecture for climate adaptation.

The Float Lab integrates an innovative, ecologically optimized fiber-reinforced polymer composite hull with variable topographies that perform both above and below the water. On the top, the topography is engineered to channel rainwater and produce watershed pools for intertidal or terrestrial habitats. Underwater, the hull's peaks and valleys vary in size to provide habitats for different types of invertebrates. Water flowing along this underwater landscape brings plankton and other nutrients into these "fish apartments," helping to promote ecological diversity. In large masses, this biological growth can help attenuate wave action and reduce coastal erosion, one of the primary impacts of climate change and sea level rise. Throughout its deployment, attachment fittings on the underside will suspend ecological habitat prototypes to further develop the wave attenuation potential of the optimized substrates.

The Float Lab is moored in the Port of Oakland's Middle Harbor Shoreline Park, where it serves as a floating research station and an environmental demonstration project that interfaces with public education and community engagement efforts sponsored by the Port of the Oakland. It is the first prototype of its kind to receive state and federal approval by regulators at the

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San Francisco Bay Conservation and Development Commission and the United States Army Corps of Engineers.

The Buoyant Ecologies project is directed by AEL directors Adam Marcus, Margaret Ikeda, and Evan Jones, who have led five research studios at the Architecture Division at California College of the Arts exploring related themes of floating architecture, material innovation, and climate adaptation. Collaborators include the [Benthic Lab at Moss Landing Marine Laboratories](#), [Kreysler & Associates](#), a global leader in composites manufacturing, [Tri-Coastal Marine](#) naval architects, and marine consultants [DC Marine](#).

Project sponsors include the Port of Oakland, which owns Middle Harbor Shoreline Park and whose engineering team supervised the launch; the Center for Impact at California College of the Arts; Ashland Reactive Polymers; and Miranda Leonard.

The project team will mark the launch of the Float Lab with a [public event on site at Middle Harbor Shoreline Park](#) on Saturday, September 21, which will feature food, music, children's activities, and remarks by distinguished guests, including **Oakland Mayor Libby Schaaf**.

About CCA Buoyant Ecologies Float Lab

CCA Architectural Ecologies Lab's (AEL) [Buoyant Ecologies Float Lab](#) project is an award-winning, innovative floating breakwater structure engineered to be a habitat for native marine life in order to increase marine biodiversity and reduce coastal erosion. This project builds upon five years of applied research at California College of the Arts and merges expertise from design, advanced digital fabrication manufacturers, and marine ecologists.

The Buoyant Ecologies Float Lab project has received the following recognition: Columbia University, [GSAPP Incubator Prize](#), 2019; Center for Impact at CCA, [Impact Award](#), 2019; *Architect Magazine*, [R+D Award](#), 2018; and Buckminster Fuller Institute, [Catalyst Program](#), 2017.

Project leaders: Adam Marcus (CCA), Margaret Ikeda (CCA), Evan Jones (CCA)

Design team: Taylor Metcalf, Georine Pierre, Jared Clifton

Marine ecology: [Benthic Lab](#), [Moss Landing Marine Laboratories](#) — John Oliver, Kamille Hammerstrom, Daniel Gossard

Fabrication: [Kreysler & Associates](#) — Bill Kreysler, Joshua Zabel

Maintenance and deployment consultant: [DC Marine](#) — Dean Christian

Naval architecture and engineering: [Tri-Coastal Marine](#) — Andrew Davis

Deployment team, Port of Oakland: Bill Morrison, Donald Ockrassa, Kevin Nekimken, Sean Wheels, Greg Skeen

Administrative support: Dustin Smith (CCA), Amanda Schwerin, Karina O'Neill, Laura Ng (CCA), Sarah Lowe (CCA), JD Beltran (CCA Center for Impact), Wes Miller (CCA Center for Impact), Tracy Tanner (CCA Center for Impact)

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Project sponsors: Miranda Leonard, Kreysler & Associates, Ashland Reactive Polymers, Autodesk Workshop at Pier 9, Port of Oakland, CCA Center for Impact

Photography: Architectural Ecologies Lab, Mike Campos (aerial photos), Wes Miller (event photos and video), JD Beltran (event photos), Scott Minneman (event photos)

About California College of the Arts

Founded in 1907, California College of the Arts (CCA) educates students to shape culture and society through the practice and critical study of art, architecture, design, and writing. Benefitting from its San Francisco Bay Area location, the college prepares students for lifelong creative work by cultivating innovation, community engagement, and social and environmental responsibility.

CCA offers a rich curriculum of 22 undergraduate and 11 graduate programs in art, architecture, design, and writing taught by a faculty of expert practitioners. Attracting promising students from across the nation and around the world, CCA is [one of the 10 most diverse colleges in the U.S.](#)

Graduates are highly sought-after by companies such as Pixar/Disney, Apple, Intel, Facebook, Gensler, Google, IDEO, Autodesk, Mattel, and Nike, and many have launched their own successful businesses. Alumni and faculty are often recognized with the highest honors in their fields, including Academy Awards, AIGA Medals, Fulbright Scholarships, Guggenheim Fellowships, MacArthur Fellowships, National Medal of Arts, and the Rome Prize, among others.

CCA is creating a new, expanded college campus at its current site in San Francisco, spearheaded by the architectural firm Studio Gang. The new campus design will be a model of [sustainable construction and practice](#); will unite the college's programs in art, architecture, design, and writing in one location to create new adjacencies and interactions; and will provide [more student housing](#) than ever before.

For more information, visit cca.edu.

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