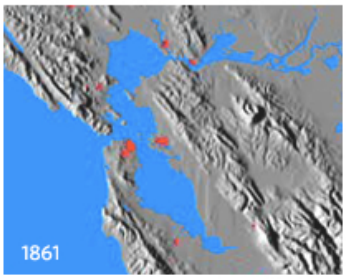
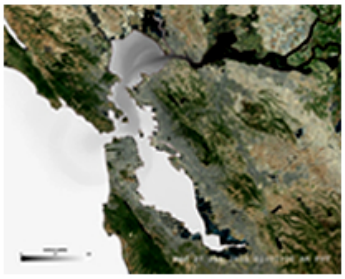
Exhibit 3: Bay Observatory and Public Promenade Exhibits

Observatory Bay Model





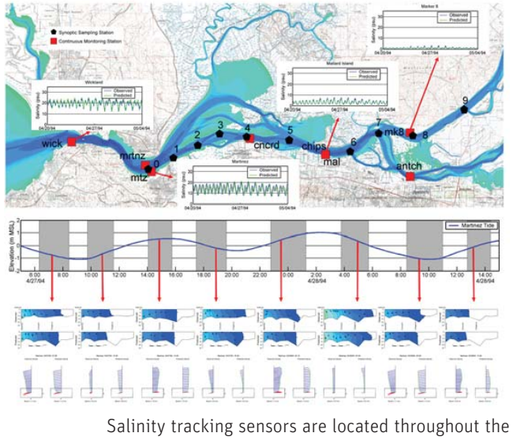
The Bay Model is a topographic relief map of the San Francisco Bay region upon which both physical and living systems of the bay estuary and ocean are projected. The model was carved in wood in the Exploratorium shop using a cnc rauter - a tool which reads geospatial information science, (GIS) data derived from maps to sculpt a three dimensional replica of the landscape. The model includes both topographic and bathymetric features of the regional landscape.

The model gives visitors a perspective on the Bay Area as a region and how one's own neighborhood or city is situated in a larger context. We use the model to present hydrology, weather, geography, geology, history as well as the relationships of the land forms to the bay and ocean. This exhibit "platform" invites art/science/educator collaborations to examine ecological change and to model various landscape predictions.

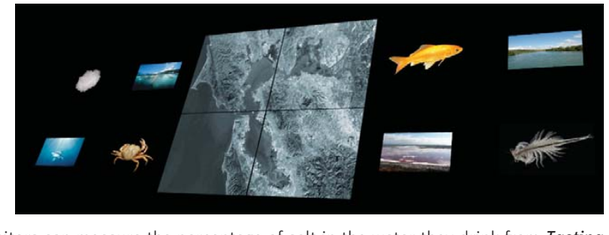
Partners; National Weather Service, NOAA; Romberg Tiburon Center, SF State University; Environmental and Fluid Mechanics, UC Berkeley; Hydrology and Ocean Modeling, Stanford University; Environmental Fisheries Service, NOAA; Historical Ecology Program, San Francisco Estuary Institute; USGS.

Faultlines
Population growth
Fog prediction
Salinity model

Historical tidal marsh 1850
Contemporary tidal marsh
Sea level rise inundation



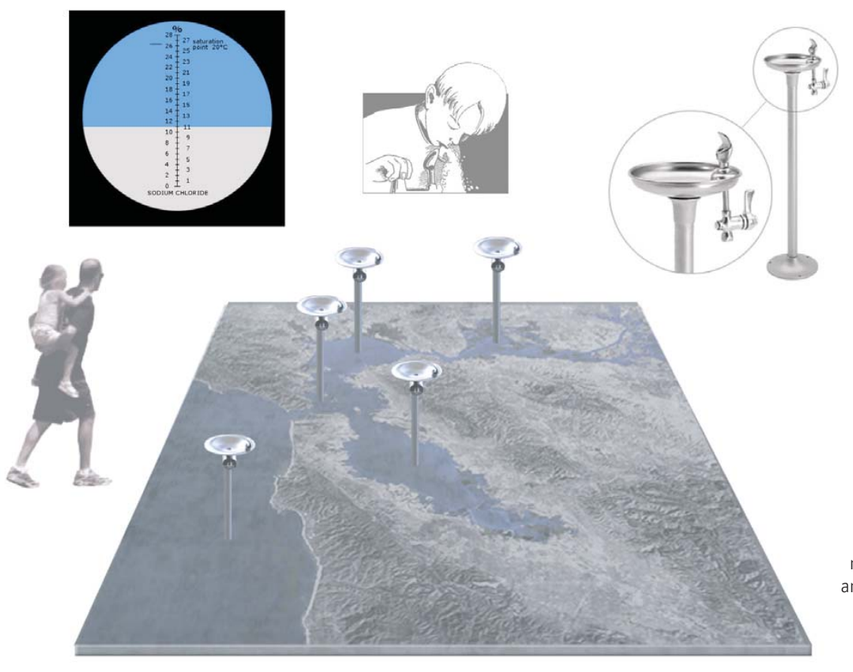
Salinity tracking sensors are located throughout the North Bay. Live data can be imported and used as a driver for exhibit interactions.



Visitors can measure the percentage of salt in the water they drink from ***Tasting the Tides.*** In this way, they can explore the range of salinities that different organisms in the San Francisco Bay are adapted to.

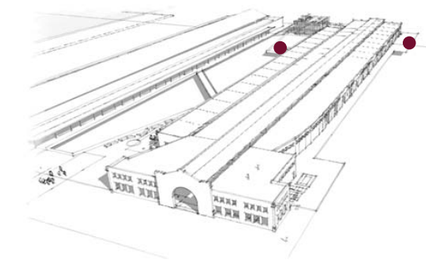
Salinity plays a critical role in both the human body and the San Francisco Bay estuary. Without the dissolved salts in our body fluids, our nerves could not conduct the electrochemical impulses that carry messages throughout the nervous system. In the estuary, salinity levels fluctuate dramatically with tides, currents, location, and season, playing a key role in defining the range and habitat of countless freshwater and marine organisms.

Using a special low-flow drinking fountain, *Tasting the Tides* allows visitors to taste a varied range of salt concentrations typical of water flowing from the Delta through the Bay estuary and into the Pacific Ocean.



One approach to this installation could be to have visitors physically navigate a map of the Bay and sample current salinity conditions.

The first version of this work is currently installed at Fort Mason, a National Park similarly located along the water's edge.



Public Promenade Exhibit Prototypes

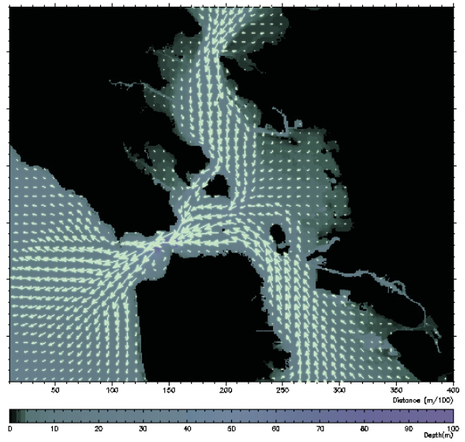
Disappearing Rings

Public Promenade Exhibit Prototypes

Bay Window

FLOW PATTERNS

STUDIO LEADS: SHAWN LANI POINT PERSON: JESSE MARSH STAGE: 1 2 3 4 5 PROTOTYPE

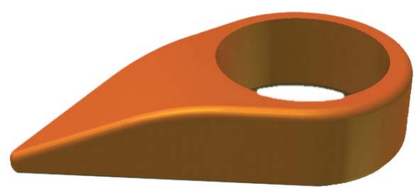


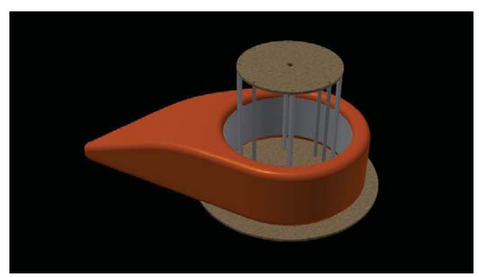
Feather boa kelp rely on bay tidal flows to bring nutrients. They are also excellent natural indicators of bay a dynamic bay flow pattern driven by twice daily tides, estuary outflows, and complex bathymetry.

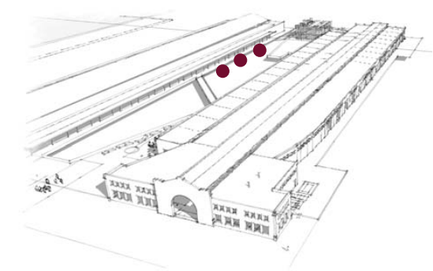
The Outdoor studio is experimenting with a variety of forms for Flow Patterns. The repetitive placement of pier pilings seems like a natural placement for flow sample devices. Transecting the end of the piers may reveal subtle variations in tidal flows as they react to the intruding piers. Tidal flows around the piers are quite pronounced with maximum flows peaking at around 1.5 knots. Site tests should determine final placement and design characteristics.

Bay flows along the waterfront are driven by twice-daily tides, bay bathymetry, and estuarine carved channels stretching through out the bay. Piers 15 and 17 are extensions of a highly engineered waterfront where pilings, sea walls, and dredged channels dominate bay flows. Our Flow Patterns investigation creates a series of large-scale sampling devices that respond to tidal flow patterns.

Early prototypes have taken inspiration from maritime forms created to guide, push, or cut through the water. Wooden oars, rudders, and even surfboard fins have been used as the beginnings of design explorations. The large scale repetition of this work explores the architectural possibilities taking advantage of vernacular structures and forms.







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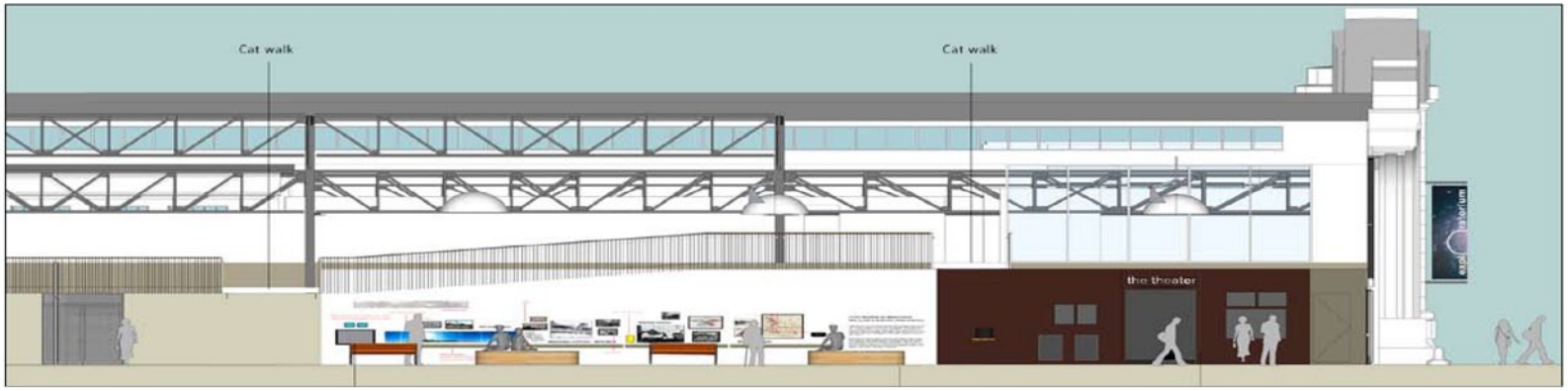

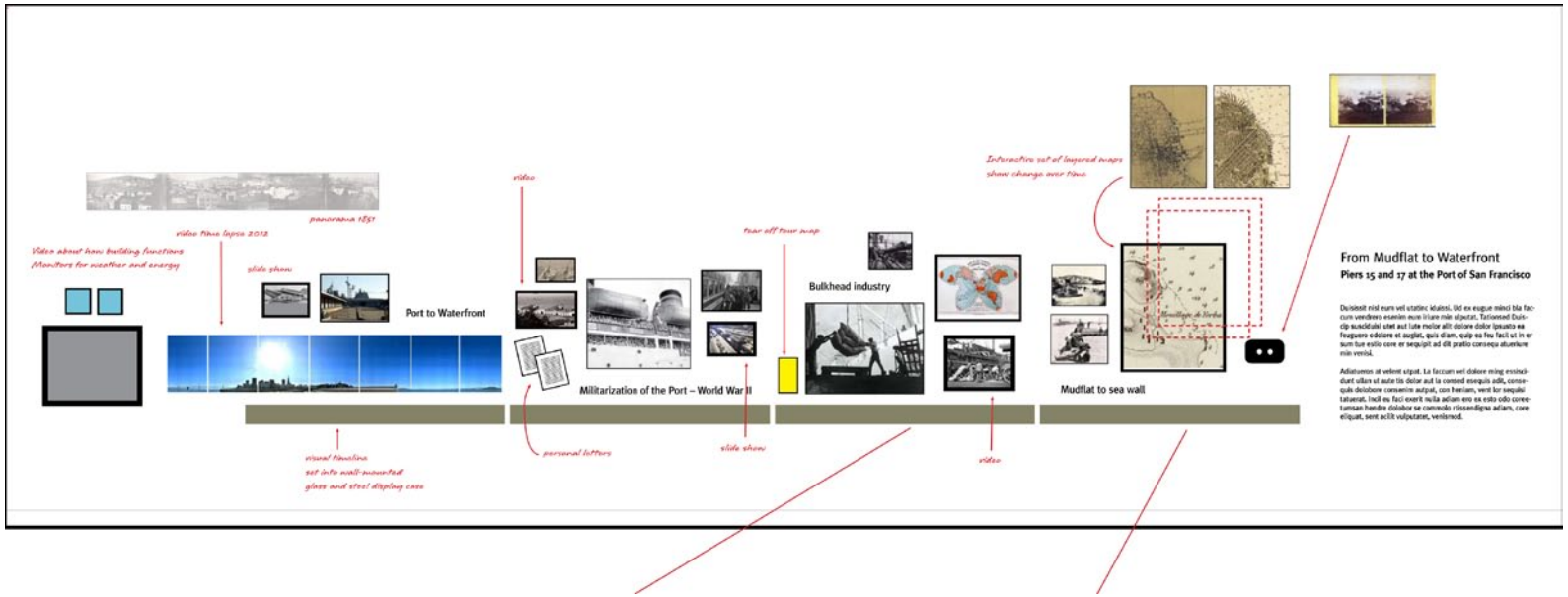

The Bay History Walk will be a 51-foot long exhibit located within the historic Pier 15 bulkhead.