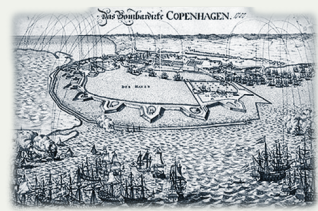



COPENHAGEN



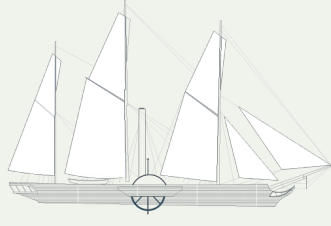
1700

QUEEN JULIANE MARIE



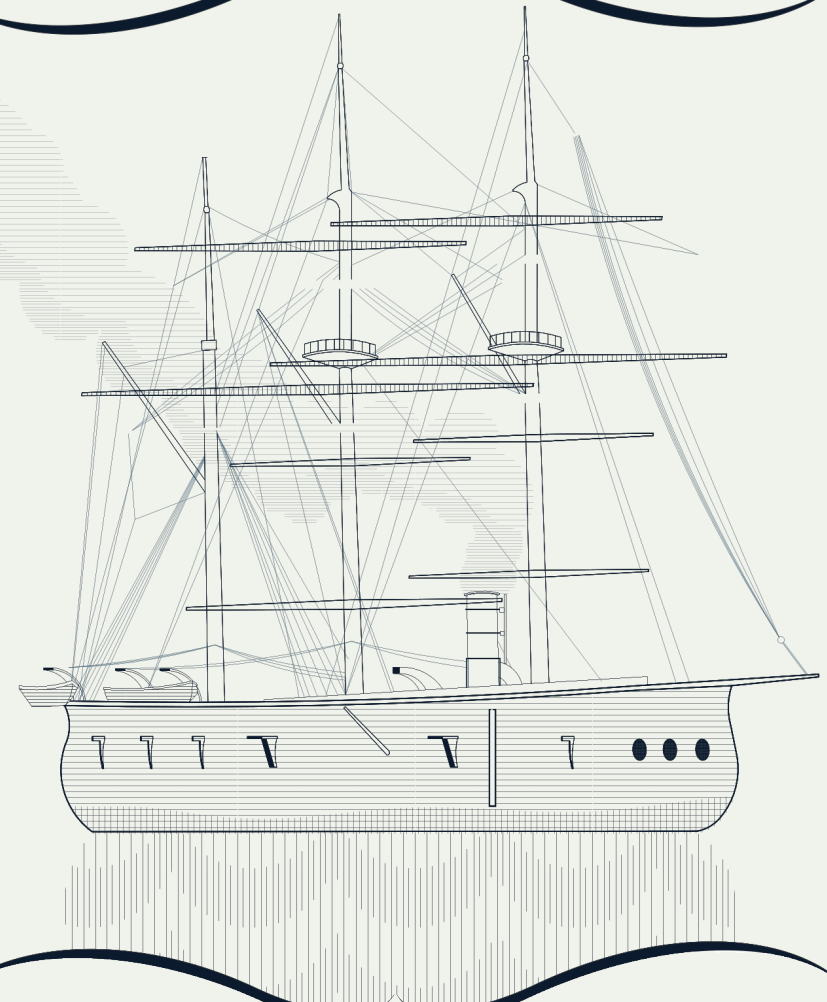
1772

JAMES WATT



1781

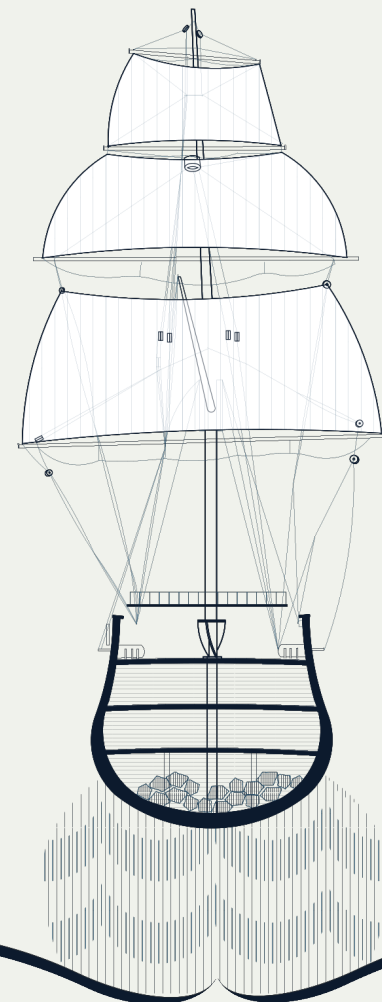
DANNEBROG I



1858

The iron-clad, steam-engine side paddle yacht was built on the Refshaleøen site and served the royal family until 1931 when it was replaced by a new yacht of the same name.


FRIGGATE JYLLAND



1860

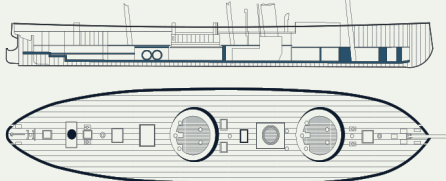
The most famous of Denmark's wooden-hulled warships was built at the Naval Shipyard. Its steam engines were the first domestically produced steam engines. She took part in the battle of Heligoland in 1864 which was the last combat between wooden ships. The damage was extensive and it was dry docked in 1984 and restored by 1994.

HJEJLEN




1861

ROFT KRAKE




1862

DANNEBROG II



1879


THE LITTLE MERMAID



1909


bronze statue by Edvard Eriksen Based on the fairy tale of the same name by Hans Christian Andersen, the small and unimposing statue is a Copenhagen icon and has been a major tourist attraction since 1913. The Little Mermaid is adjacent to the former Refshaleøen shipping yard.

KOBENHAVN



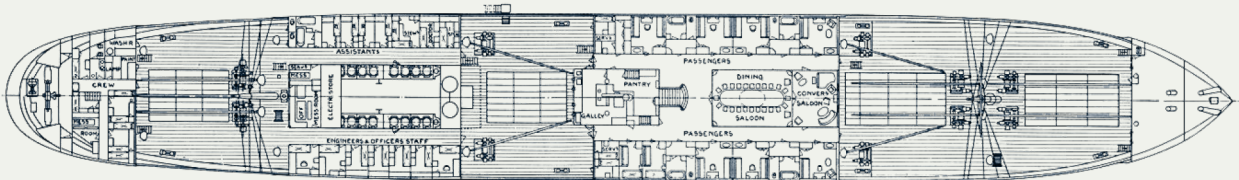
1921

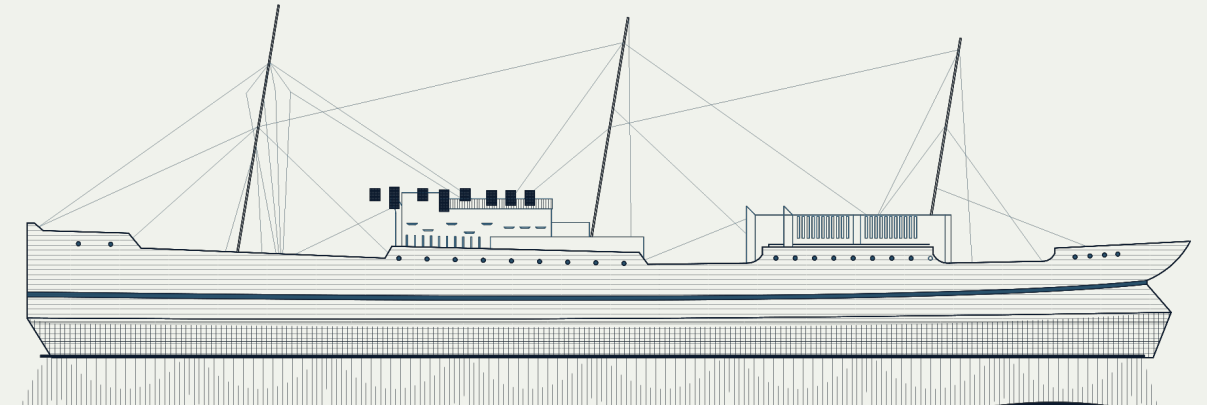
DANNEBROG III



1932

SS SELANDIA





1911

The world's first ocean going diesel powered ship. Built by Burmeister and Wain on site and outfitted with two four-stroke diesel engines, its maiden voyage was in 1911 from Copenhagen to Bangkok. It was sold to Panama in 1936 and renamed Norsemen and the later renamed again Tornator in 1940.

—Nautical Timeline of the Site's History—

# RE-RIGGING ATMOSPHERE

Refshaleøen stands both as an icon of industrial production as well as an emergent example of how new cultural uses can revitalize once private space into a public amenity. Our proposal seeks to *merge* tradition *with* technology to allow for informal uses to remain on the site while also creating a cultural complex that celebrates the site's heritage. We ask: how can sustainable energy production learn from Danish traditions and be sensitive to the past, present, and lead us to the future?

While its historic legacy is one of industrial pollution and contamination, the B&W shipyard, established on the island in 1871, is also a site of Danish innovation. At the height of its use, the shipyard employed 8,000 workers and created iconic ships such as the Dannebrog, Frigate Jylland, and SS Selandia. These three ships were emblematic of technological transformations in nautical transport and reveal three typologies of ships that were specifically fabricated on the site — steam-engine / paddle hybrid, steam engine, and hybrid diesel power. These ships marked a technological transformation from large ships powered by sails (wind) to ships powered by various fossil fuels. Yet, as emergent technologies, all three types still employed large masts and sails to ensure the functioning of the vessels under all conditions.

Our proposal employs the sails of these three ship typologies, which are unique to the site, as energy harvesters. Instead of using sails to capture wind and thrust a ship into motion, we dissociate the ship from the water and firmly fix it on land. By doing so, it consolidates the wind forces in the sails of the ship, which are re-rigged with a piezoelectric membrane to harvest this energy. Thus, these nautical icons of technological power are re-rigged to sail ships that harness the abundant wind forces through emergent material science. The result is a *performative museum* of the site's history, wherein visitors can tour these complex vessels and learn about their construction and technological innovations. With its adjacency to the historic nautical context of Copenhagen and the Little Mermaid statue, the site is well positioned to leverage its nautical legacy in a cultural and ecological manner. Further, by consolidating the energy capture into three objects in the landscape, it leaves large parts of the site open for the current soft-uses of the island — film screenings, flea markets, concerts and festivals, as well as community gardens. We view these contemporary uses of the site as critical to establishing a dynamically evolving complex that embraces the community's needs. Accordingly the site merges the cultural celebration of heritage with contemporary cultural needs and energy production — a living performative museum.

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