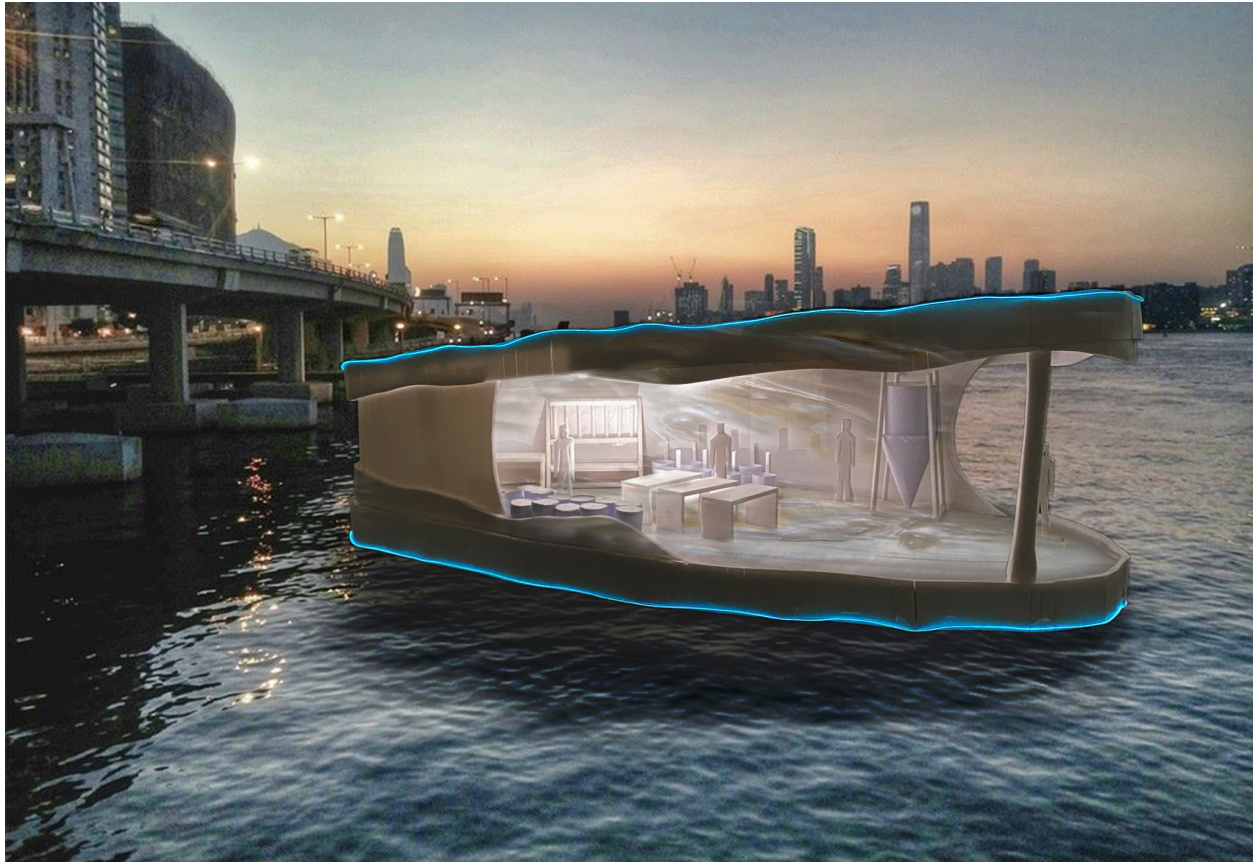


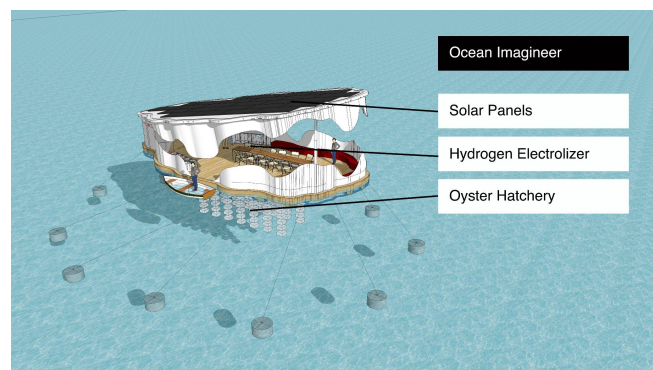
Press Release - For Immediate Release



Title: “Ocean Imagineer: Floating Art & Science Laboratory Produces Oysters and Green Hydrogen in North Point, Hong Kong”

The Ocean Imagineer is a floating art and science work. The outside appearance is an artwork that raises awareness about the fragility and importance of oyster reefs in Hong Kong. On the roof solar panels power a hydrogen generator that is the clean energy of the future; underwater, millions of oyster larvae are being produced to improve water quality.

More than half a century ago, North Point's waterfront was a popular destination for families to enjoy swimming. The water was clean and thriving with marine life. Once the area was reclaimed and industrialised, this changed. Today, however, the idea of diving into North Point's polluted waters for a swim may seem crazy to most people. If we ever want the water to be clean again, we need to restore biodiversity and learn to live with other species sustainably. As Hong Kong transitions into a post-industrial society, can we imagine ways to help recreate the conditions needed to sustain a vibrant marine ecosystem?





Imagine this: It's a sunny morning in September 2021; you are walking along the water of the North Point Promenade visiting the "Via North Point" art exhibition. You see an organic shape floating on the water, the "Ocean Imagineer". It looks like a giant oyster, the size of a small yacht! Its irregular shell contrasts with the delicate mother of pearl iridescent interior. You take a few steps down from the pier, get on a small boat and step on board. You discover a busy biological research and fabrication laboratory inside. Transparent tubes bubbling with thousands of oyster larvae destined to repopulate Hong Kong waters; electronic technology with flashing lights and busy wiring and young people in lab coats introducing young children and North Point residents to their marine microscopic neighbours. You learn that the platform is used to deploy marine robots, the rooftop is covered with solar panels and that part of

the electricity is dedicated to produce hydrogen: the clean energy of the future in stainless steel tanks. You are experiencing the timeless sensation of what the life of an oyster might feel like and the excitement of taking part in building the future: the creative integration of biology and advanced technology.

The "Ocean Imagineer" is a floating art and science educational installation exploring:

1. **Biodiversity & Water Quality:** Which marine species can best clean Hong Kong waters?
2. **Solar and Hydrogen Offshore Production:** How much solar and hydrogen energy can we produce?
3. **Design Research:** How can the Ocean Imagineer benefit the local community by leveraging innovative IoT, blockchain and AI technologies?

Activities

Visitors will be able to engage with the Ocean Imagineer from land with several activities such as:

- **Biodiversity & Water Quality:** conducting experiments and seeing demonstrations of "how marine animals help improve water quality" with the University of Hong Kong, The Swire Institute of Marine Science, The Nature Conservancy and archiREEF.
- **Solar and Hydrogen Offshore Production:** "building your own mini hydrogen generator" hands-on workshop with MakerBay Foundation team, supported by [Safecast](#) and Seed Studio.
- **Design Research:** exploring how to leverage IoT, blockchain and artificial intelligence to benefit the community with The National Conservatory of Arts and Crafts Paris and Scoutbots in partnership with Hong Kong Maritime Museum, Amber Initiative and Oasis Labs

Dates and locations of workshops and events will be posted on the Ocean Imagineer website (but may change subject to COVID19 and extreme weather/typhoon protocols).

Team & Partners

1. **The Artist Researcher Lead:** Cesar Jung-Harada. Project Coordinator: Jasimran Dhaliwal
2. **Design Research:** Conservatoire National des Arts et Métiers, Prof Gilles Garel, Prof Pierre Levy. Hong Kong Design Trust (for CoralBot on board). Thanks to Dr Etienne Gernez
3. **Funding:** The Urban Renewal Fund
4. **Curation:** Via North Point, Hong Kong Arts Centre
5. **Biology:** The Swire Institute of Marine Science, HKU (<https://www.swims.hku.hk/>), Prof Vengatesen Thiagarajan (Rajan), Prof Bayden Russell, The Nature Conservancy, archiREEF, Lau Fau Shan oyster farming community, Hong Kong Aquaculture (Sai Kung)
6. **IoT, Environmental Sensor, Citizen Science:** Seed Studio, Safecast, Airnote by Blues Wireless, HK City University, School of Creative Media (SCM) Prof Alvaro Cassineli, Prof Can Liu.
7. **Blockchain:** Amber Initiative, Oasis Labs
8. **Education & History:** Hong Kong Maritime Museum, MakerBay Foundation, The Looking Glass Factory
9. **Media:** The Green Queen
10. **Social & Environmental Impact:** Synergy Social Ventures, Youth Ocean Alliance

About Cesar Jung-Harada

Cesar Jung-Harada ("he", 1983) is a French-Japanese inventor, environmentalist, entrepreneur and educator living in Hong Kong since 2014. Cesar is active in ocean exploration and conservation technology, citizen science, design, art, inclusive education, social entrepreneurship. Cesar is the Director of MakerBay, Scoutbots, Senior Lecturer in Design and Architecture at the University of Hong Kong and Researcher at The Swire Institute of Marine Science. Cesar is multiple times TED speaker and TED Senior Fellow who used to work at MIT as a Researcher and Project Leader. He holds a Masters in Design Interactions from the Royal College of Arts (UK) and has sailed around the world.

www.cesarharada.com

About Hong Kong Arts Centre

Hong Kong Arts Centre (HKAC) is a multi-arts centre that fosters artistic exchanges locally and internationally, bringing the most forward creations to Hong Kong and showcasing homegrown talents abroad.

HKAC stimulates innovation and promotes creativity. Being Hong Kong's only independent non-profit multi-arts institution, HKAC offers exhibitions, screenings and performances, connecting the arts of Hong Kong to the rest of the world through programmes and collaborations. In the past four decades, HKAC has been dedicated to building the local art ecosystem as well as facilitating cultural exchange between Hong Kong and the rest of the world. Aiming to make art accessible to wide public audiences, HKAC has presented over 2,000 programmes covering performing arts, visual arts, film and video arts, public art projects, art conferences, art festivals and more.

www.hkac.org.hk

About Urban Renewal Fund

As part of the Urban Renewal Strategy promulgated in February 2011, one of the main objects of the Urban Renewal Trust Fund is to support heritage preservation and district revitalization initiatives in the urban renewal context. As the trustee of the Trust Fund, the Urban Renewal Fund (URF) operates the Urban Renewal Heritage Preservation and District Revitalization Funding Scheme to provide financial support to urban renewal preservation and revitalization projects proposed by the community.

About Via North Point

North Point is a fascinating location full of collective memories yet also undergoing rapid urban and socio-economic transformation, populated with diverse neighborhoods. The Project carries a key mission in empowering the community to envision a better future use of public space, and enhance the quality of living for North Point Residents. Together with the concerted efforts with the collaborators, Hong Kong Arts Centre design and engage the community with a series of participatory programmes and creative artistic structures to connect the new and the old areas in the district, building capacity on public space, celebrating the uniqueness of North Point and hence cultivating a sense of belonging and building the cultural citizenship through imaginations of urban spaces.

<https://www.via-northpoint.hk/en/>

Key Information

- **Dates:** Aug 30 - Dec 1, 2021
- **Location:** North Point Promenade, HK. 5 minutes walk from North Point MTR.
- **Ticket:** Free

Contact Artist Researcher: Cesar Jung-Harada | + 852 9610 7593 | contact@cesarharada.com

Contact Project Manager: Jasimran Dhaliwal | +852 5542 2040 | Jasimran@makerbay.org

Credits: "Cesar Jung-Harada, Scoutbots Ltd"

Social Media Tags: #OceanImagineer #Imagineer

Website, workshop and events details: www.OceanImagineer.org

Further Information



The Nature Conservancy



Prof Thiyagarajan, SWIMS, HKU with a local large oyster

Biodiversity & Water Quality

Oyster culture has been practiced in Hong Kong for around 200 years. But some research shows that it has been a part of Hong Kong culture for 700 years. But the industry is facing many challenges, one of them being that there are only about 100 oyster growers left in Lau Fau Shan, compared to the 700 oyster farmers during the 60s and 70s. [The Ocean Imagineer is Hong Kong's first oyster hatchery.](#)

"Hong Kong was once home to thriving shellfish reefs but due to a combination of factors including over-exploitation, coastal reclamation and pollution, shellfish populations have declined drastically. [...]"

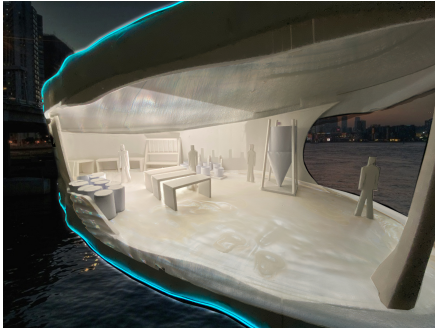
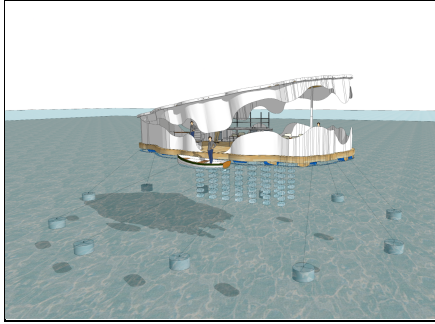
"Globally, we have lost 85% of shellfish reefs, making it the most endangered marine habitat on earth," said Marine Thomas, Conservation Project Manager, for TNC in Hong Kong. "Most people associate oysters with food, but less well-known is that oysters create reef habitats that support coastal marine life. Only by restoring these lost habitats can we start to bring back some of the associated environmental benefits." [...] Healthy oyster reefs contribute to coastal environments in their role as natural water purifiers: A new study found that just 7 m² of Hong Kong oyster reef can filter up to one Olympic sized swimming pool of water each day and a single Hong Kong oyster (*Crassostrea hongkongensis*) can filter up to 30 liters of water per hour at summer temperatures. This is among the highest filtration rates recorded of any oyster species. Even more importantly, oyster reefs provide a habitat and nursery grounds for many native species that are otherwise lost from our shores. Another recent SWIMS study with Dr. Bayden D Russell conducted in partnership with TNC found that these reefs house six times more species than bare muddy shores [...]" [Full article.](#)

"The oyster is named after Hong Kong, so we should take care of this business and we should provide a solution for the sustainable development of this (700 years old) industry for new generations of (oyster) farmers," said Dr. Thiyagarajan. "We slowly need to change the psychology of our local population towards the consumption of these oysters." [Full article.](#)

"Oysters are a friendly alternative if you want to eat protein and not contribute to the greenhouse gas footprint." [Dr. Robinson Fulweiler](#)

The Victoria Harbour's water quality has also been upgraded significantly through the implementation of the Harbour Area Treatment Scheme. However the *E. coli* level is around 300 counts per 100mL and the level of dissolved inorganic nitrogen is 0.35 per mL. In comparison, in Deep Bay where Hong Kong's oyster farms are located, the level of *E. coli* is 132 counts per 100mL and the level of dissolved inorganic nitrogen is 1.2 per mL. This shows that oysters help clean and add nutrients to the water in Deep Bay!

In the lab we will conduct research to help us better understand how oysters can help our shorelines from rising sea levels caused by global warming. We will also research hydrogen and test if it can power the plans of the future.



Design Research

The Ocean Imagineer is Hong Kong's first offshore solar hydrogen production plant pilot.

Hong Kong has vowed to become [carbon neutral by 2050](#) and so did [China by 2060](#). [CLP has plans to invest in offshore hydrogen within the next decade](#), and “China Carbonomics cost curve highlights three key interconnected scalable technologies for net zero with 1) Wind and solar power 2) Clean Hydrogen is the second most important technology, potentially driving 20% of the de-carbonization of China's Clean tech revolution. 3) Third, Carbon Capture technologies.” [Goldman Sachs Report](#).

Economic development and environmental protection are often put at odds, as if it is impossible to make money while protecting the environment. What if oyster farmers can contribute to cleaning Hong Kong's waters, help increase marine biodiversity and diversify their revenue streams with solar energy and green hydrogen carbon credits?

The Ocean Imagineer is an art and science installation that offers a glimpse of the integration of native species biologies, cutting-edge renewable energy research with the traditional sea farming community.

Educational workshops and tours will be announced on the website and via social media.

www.OceanImagineer.org