



**Royal College of Art**

Postgraduate Art & Design

# OCEAN & CITIES

**The Grand  
Challenge**  
2023/24

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THE GRAND CHALLENGE 2023/24

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## RCA GRAND CHALLENGE 2023/24

**The RCA Grand Challenge 2023/24: Ocean & Cities (GC), brings London closer to the ocean, exploring a wide range of design challenges at the interface of land and sea.**

The goal is to support behaviour change among citizens and organisations through the use of \*ocean science, co-design and place-based approaches to:

1. Address the impacts of cities on the ocean.
2. Increase city resilience to ocean-related impacts of climate change.

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## WHY CITIES?

Cities are crucial to understanding humanity's relationship to the ocean. Over half (55%) of the global population lives in cities, a number that is projected to rise to 68% by 2050 [UN, 2018], and approximately 40% of the global population lives within 100km of the ocean [UN, 2017]. Regardless of their proximity to the coast, cities have a direct impact on the ocean. Everyday actions of citizens and organisations contribute to issues such as marine pollution, destruction of ocean ecosystems and unsustainable aquaculture and resource extraction. Ocean impacts on cities can present extreme case scenarios when it comes to risks from rising sea levels and temperatures, severe storms, acidification and loss of biodiversity. **The health of cities and the health of the ocean are inseparable.**

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## LONDON & THE OCEAN

London represents unique ocean-city conditions. Located 80 km from the North Sea, the city has been shaped by the River Thames and the natural habitats and industries it supports. Flooding and water pollution pose significant challenges. At the same time, innovation and investment are seen in projects like the Thames Barrier and the current construction of a 25 km Super Sewer. The city's targets to become net zero-carbon and zero waste, along with plans for a New Green Deal, could have positive effects for the ocean. As a national capital and global financial centre, London bears significant responsibility in terms of sustainable marine development at local and international scales.

The 2023/24 GC examines London's relationship to the ocean, identifying design opportunities across the city's 32 boroughs and the City of London district. For example, challenges could include:

- Ocean literacy, including new ways of valuing, visualising and experiencing the ocean
- Building citizen resilience and self-sufficiency in the face of climate change
- Restoration and protection of natural habitats and marine ecosystems
- Flood mitigation, including impacts on citizens, infrastructure and emergency response services
- Elimination of water pollution, especially plastic and sewage
- Access to blue spaces for recreation, health and wellbeing
- Net zero shipping, trade and supply chain resilience, including secure food and water supply
- Sustainable and equitable consumption of ocean resources across industries such as fishing, aquaculture and mining
- Sustainable and equitable blue economy initiatives, such as the ocean as a source of clean energy and blue carbon storage

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## FRAMING QUESTIONS

How can increasing ocean literacy and awareness of ocean-city challenges trigger sustainable behaviour change and new value systems to create positive impact?

How can London communities engage with different forms of ocean science in order to increase participation and ownership of ocean-city initiatives?

How can cities design with and for nature to mitigate the impacts of climate change and improve the health of marine ecosystems?

How can cities create balanced and sustainable environmental, economic and behavioural models that support a healthy future for the ocean?

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## \* OCEAN SCIENCE

Ocean science refers here to a diversity of ocean knowledge, including natural and social sciences, community and culturally based knowledge, and knowledge represented in technology, policy, art and more [UNESCO, 2021]. This year's GC addresses the gap between the problems identified by ocean science and the awareness of and ability to act on that information to develop and implement solutions.

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## APPROACH

Students from across the School of Design will work in interdisciplinary teams to generate applied and strategic design solutions based on ocean science to change behaviours of people and organisations towards the ocean.

Teams should engage directly with their assigned borough and use the GC framing questions as a guide to identify opportunities for design interventions in the context of London. This could include, but is not limited to, products, materials, identities, experiences, systems, services, and simulations. This process will require thoroughly investigating local needs, a wide variety of stakeholders, and different forms of knowledge, focusing on how cities interface with the ocean.

To achieve this, we recommend a combination of co-design and place-based approaches. Co-design is important because it moves beyond research and consultation to inclusion and co-creation with stakeholders whose lives will be affected by design outcomes. A place-based approach recognises the unique relationships between local stakeholders and the ocean, and grounds design proposals in real locations.

## DELIVERABLES

### Term 1: Research presentation

Presentation: December 6, 2023 during tutorial

Slides: December 8, 2023 on Moodle

### Term 2: Video of design proposal and process

February 2, 2024 on Moodle

These are team projects. Please refer to Moodle for detailed requirements, the unit specification and assessment criteria.

## EXHIBITION

Exemplary projects will be displayed at the RCA in March 2024. Teams will be notified in February 2024 and may be asked to submit additional content for presentation to the jury and in the public exhibition.

## REFERENCES & RESOURCES

Please see Moodle for references and resources about the ocean and cities, London, UNESCO Ocean Decade Challenges, ocean science, co-design and place-based approaches.

## ABOUT THE GRAND CHALLENGE

The **RCA Grand Challenge** (GC) is the biggest single-institution postgraduate design project in the world. Tackling global challenges, such as climate change, requires knowledge and skills beyond any one discipline. The GC promotes interdisciplinary collaboration across School of Design programmes. It offers a unique opportunity for students to exchange knowledge and co-design new responses to complex and urgent problems of societal relevance. In 2023-24, the GC will involve 800 students from Design Products, Fashion, Innovation Design Engineering, Intelligent Mobility, Service Design and Textiles.

The United Nations' Sustainable Development Goal (SDG) 14 foregrounds this year's GC - "Life Below Water. Conserve and Sustainably Use the Oceans and Marine Resources for Sustainable Development." The topic aligns with RCA's initiatives as a UNESCO Ocean Decade Implementing Partner and is part of the School of Design multi-year project, New Economic Models for the Ocean (NEMO) [RCA, 2023]. The focus on cities in 2023-24 builds on previous GCs targeting ocean issues at global (2021-22) and coastal community scales (2022-23). A number of those projects have been further developed by graduates beyond the GC. This year's GC results will contribute to a larger body of design research inspiring audiences to rethink how we can address the sustainability of the ocean.