The Built Ocean

EAHN Thematic Conference
Faculty of Architecture of the University of Porto
September 10–13, 2025

BOOK OF ABSTRACTS

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EAHN Thematic Conference

European Architectural History Network
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EDITORIAL

Architects require solid ground on which to base their practice, yet oceans have always been a key element shaping the history of architecture and the built environment.

This themed conference aimed to shift the focus of architectural history from the land to the sea. It addressed the planet's bodies of salt water either as areas of increasing urbanization (through the building of structures such as underwater cables, oil rigs, windmills, etc.), as connectors between space and cultures (navigation routes for people and resources, transported in the form of knowledge, labour, and materials), or as an ecosystem functioning, in connection with the land, as an essential life-support system (defining climatic patterns, providing resources from food to raw materials, and securing services from carbon sequestration to large-scale habitats).

The conference aimed to bring together scholars representing a wide range of interdisciplinary knowledge and set out to cover a broad chronological scope, from deep history and archaeological sources to more recent accounts of ecological decline and potential futures. Where is the architecture of the sea? To what extent does the built environment impact saltwater landscapes? What reciprocal impacts do seascapes have on the built environment?

Keynote

Ten Myths of Critical Ocean Studies

Kimberley Peters
Philip Steinberg

For decades now, critical environmental scholars (including geographers, historians, anthropologists, and those working in fields of literature, science and technology studies, architecture and beyond) have been turning to the ocean (and other non-solid, non-landed, spaces) to develop alternative modes of understanding that are not "fixed" but rather build from the ocean's spatial and temporal fluidity.

And yet, strangely, some of the ways of knowing in what is part of this "oceanic turn" often reproduce the very epistemologies and ontologies that the turn to the ocean had sought to undermine. In this keynote address ten myths that are prevalent in much of the ocean studies literature are identified and unpacked in order to think critically about what our assumptions of ocean do and mean, and where they may limit work, including that of architecture historians. Like most myths, the myths explored are not objectively "wrong;" in many instances, in fact, they provocatively suggest truths that are less clear when viewing things "from the land." However, in their simplified explanations, and in the narratives that emerge around those explanations, these myths typically foreclose other ways of thinking that might go further in realising the ocean's potential as a means for understanding planetary relations, and destabilising Western norms of viewing the world.

Kimberley Peters leads a research group of interdisciplinary scholars, exploring Marine Governance at the Helmholtz Institute for Functional Marine Biodiversity, part of the Alfred Wegener Institute and University of Oldenburg. As a human geographer, her research focuses on space in the context of the sea, with particular interest on how power operates in the marine environment and how governance works (and fails). She is the author of books, including Rebel Radio: Sound, Space and Society (Springer Nature, 2018) and co-editor of Living with the Seas: Knowledge, Awareness, Action (Routledge, 2019) and The Routledge Handbook of Ocean Space (2022) and most recent the open access text Ocean Governance (Beyond) Borders (Palgrave, 2025).

Philip Steinberg leads the UArctic chair in Political Geography at Durham University. He taught at Florida State University between 1997 and 2013, with interludes in California, New York and London. His research focuses on the historical, ongoing, and, at times, imaginary projection of social power onto spaces whose geophysical and geographic characteristics make them resistant to state territorialisation. He is the author of many books, including The Social Construction of the Ocean (Cambridge University Press, 2001) and co-editor of The Routledge Handbook of Ocean Space (2022).

Resources

Session chair, Paul Bouet
Ecole nationale supérieure d'architecture Paris-Est, Université Gustave Eiffel

Marine resources have been claimed and extracted by a variety of actors, triggering a variety of spatial practices and architectural operations. Traversing oceans and centuries, this panel moves through the luminous grandeur of European theatres lit by marine mammal oil; the monumental infrastructures of Norway's offshore oil industry; the forced sedentarisation of sampan communities in China; the socio-ecological frictions surrounding wind energy in Massachusetts; and the enduring imperial legacies of failed energy experiments in the Pacific. Through these perspectives, contributors examine the entangled relationship between the built environment and the pursuit of energy, inquiring on how architecture and planning have not only shaped, but also been shaped by, evolving regimes of resource extraction and environmental governance.

A Whale a Day
Global Whaling, Architectural Innovation and Oceanic Energy Frontiers in the Long Eighteenth Century

Andrew Toland
University of Technology Sydney

By the middle of the eighteenth century, public street lighting in London was calculated to consume oil extracted from whales at the rate of one whale per day. Whilst scholarship has explored the history of whale oil in urban illumination and industrialisation, there has been less consideration of architecture and urbanism's intersections with whale oil as a pre-fossil fuel energy resource driving the expansion of imperial energy frontiers. Understanding global oceanic and energy histories demands a more integrated understanding of the ways that bodies of whales, theatre chandeliers, street and factory lighting, plantation slave-labour, and the lands and waters of First Peoples were all bound together by technical, cultural and political-economic practices centred around whale oil as the premium source of European and North American illuminant energy from the mid-eighteenth to early-nineteenth centuries.

This paper explores the ways in which architecture's entanglements with whaling and whale oil prefigured the networks and systems of fossil fuel extraction, production and consumption in the nineteenth and twentieth centuries. European cities and architecture were the stage—often literally—on which this early energy transition was played out. In architectural experiments in the design of new theatres and opera houses, in the street lighting of London and Paris, in the illumination of façades and grand interior spaces, and in the elaborate lantern decorations of urban pleasure gardens, architecture and urbanism transformed networks of environmental and labour exploitation and contributed to the pushing out of imperial projects to new corners of the globe across the late-eighteenth and nineteenth centuries.

This paper will focus on three singular architectural instances that illustrate both ends of this global system: on the one hand, in London, the illuminated excess of Vauxhall Pleasure Gardens (lit with upwards of 37,000 whale oil lanterns), as well as the technical lighting innovations of the renovated Theatre Royal (as redesigned by the architects Robert and James Adam); on the other hand, across the other side of the world, the speculative settlement of Boydtown on the southeastern coast of Australia, intended as a regional centre for Pacific sperm whale fisheries. The paper examines the overlooked ways in which built form encoded not just how colonial accumulation practices redistributed capital, but also the bodies of animals, in ways that allow architecture to serve as a lens into socio-ecological transformations of oceanic territories.

Andrew Toland is a senior lecturer in landscape architecture at the University of Technology Sydney. A transdisciplinary scholar of the natural and built environment, his research is focused on the capacity of architecture to change how we view, understand and change our environmental realities. Andrew's work explores the cultural dimension of technological practices of environmental modification and their normalisation in our everyday urban and natural surroundings.

His research publications have investigated the relationships between cultural landscape categories and legal and technical governance structures, as well as the role of infrastructure in defining and altering marine territories, especially in Asian cities. Relevant research has focused on the ways in which East Asian states used the literal (and littoral) construction of land in the form of artificial islands to reorder political-economic systems: see A. Toland, "Geosocial Formations and the Petroleumscaping of Singapore: Underground Landscapes and Infrastructural Territories," in M. Hirsh and T. Mostowlansky (eds.), *Infrastructure and the Remaking of Asia* (University of Hawai'i Press, 2022); A. Toland, "Hong Kong's Artificial Anti-Archipelago and the Unnaturing of the Natural," in K. Sivaramakrishnan and A. Rademacher (eds.), *Places of Nature in Ecologies of Urbanism* (Hong Kong University Press, 2017).

Oil Ecologies
Mega-Projects of Norwegian Contractors

Maryia Rusak
Karlsruhe Institute of Technology

"Imagine ten million people. This is as many as live in London. Together, they weigh less than the concrete structure of the Statfjord B platform,"—enthusiastically noted the 1979 *Statoil* magazine feature dedicated to the new Norwegian oil mega-venture. Indeed, not only was the structure, which weighed 680,000 tons, the largest oil production platform in the world, but its construction was to become the "largest and the heaviest tow" the world has ever seen. Norwegian Contractors designed the enormous concrete project, and the company was also responsible for towing the structure through the Yrkjefjorden and mating it with a steel deck on-site. With a surface of more than 18,000 square meters and shafts towering 110 meters above the water's surface, the structure was exposed to the impact of the elements and sea currents.

Despite its mega-scale, the project was only the tip of the iceberg of the Norwegian "oil adventure," which, since 1969, has dramatically transformed the Norwegian coastline and the natural environment of the North Sea. From the first discovery of the Ekofisk field, the petroleum industry expanded far into the sea and the seabed of the Norwegian continental shelf, with foreign and Norwegian business interests navigating the salty waters. Norwegian Contractors, an agglomeration of three engineering firms, Thor Furuholmen, Høyer Ellefsen and Engineer F. Selmer, established in 1973, was to physically mark the Norwegian conquest of the sea, developing and building concrete structures for the offshore industry. The company was responsible not only for the majority of concrete mega-projects for the oil industry from 1975 to 1995 but also for new concrete housing developments across the ocean—in Abidjan, Ivory Coast, indirectly fuelled by the oil-delivered profits.

Through several case studies of projects by Norwegian Contractors, this contribution is particularly interested in the complex material, natural and business histories of these concrete mega-structures, populating the Norwegian continental shelf and extending far across the ocean. Based on a close reading of primary archival sources, newspaper and magazine discussions in *Statoil* magazine, the paper aims to reconstruct the complex global network of human and non-human actors engaged in Norwegian oil operations of the 1970s. The paper complicates the dualistic juxtaposition between the natural and man-made structures, instead considering them part of a global oil ecosystem that persists until today. By doing so, the contribution begins to shed light on the entirely under-researched history of Norwegian oil architecture and its place within ecological discourse.

Maryia Rusak is an architect and architectural historian who works with transnational histories. She is currently a junior research fellow at Karlsruhe Institute of Technology. Recently, she has been an ETH postdoctoral fellow (2022-2024) at the chair of the History and Theory of Urban Design, ETH Zurich. Her postdoctoral project investigates the Nordic architecture of foreign aid in post-colonial Africa, focusing on the pragmatic and economic rationale behind its production. In 2022, Maryia completed her PhD at the Oslo School of Architecture and Design (AHO).

Her doctoral dissertation examined the prolific building output of Moelven Brug—a Norwegian timber prefabrication company that, between 1955 and 1973, built schools, large housing developments and public buildings across the country. As a researcher, Maryia is particularly interested in the histories of everyday objects, networks of bureaucratic institutions, obscure intricacies of architectural production and, in general, how buildings are made. Her current work explores post-colonial narratives across cultural and geographic divides. Maryia holds an Master's in Sustainable Urban Planning and Design from KTH, Stockholm, and a Bachelor's in Architecture from Princeton University, US. Her writings appeared, among others, in *Architectural Theory Review* (2022), *The Journal of Architecture* (2024), OASE (2024), *Footprint* (2025) and J*ournal of Architectural Design and History* (2025).

Fluid Boundaries
Boat People, Socialist Fisheries Communes, and Everyday Resistance in the Lingding Sea, 1952–1982

Qingyun Lin
University of Toronto

The South China maritime border has historically been home to a significant water-bound population, derogatorily known as the Dan or Tanka, who have lived afloat and engaged in fishing and oyster farming since at least the 10th century. These communities made a living by constantly adapting to the region's climate, water salinity, fish migration patterns, and complex shoreline geography. Their distinctive way of life long marked them as culturally and politically marginal. On one hand, this subjected them to social stigmatization as prostitutes, smugglers, and pirates; on the other hand, it prompted them to operate largely at the margins of the state's purview. However, the Cold War greatly reshaped this landscape, transforming the South China Sea from a peripheral area of the central authority into a militarized, ideological and territorial frontier between the Communist mainland, colonial enclaves, and the neighbouring Southeast Asian countries.

This paper focuses on the Lingding Sea—the bay between mainland China, British Hong Kong, and Portuguese Macau—and draws on gazetteers, oral histories, atlases, and interviews. It centers on the ongoing negotiation between the state, water-bound communities and the nonhuman sea during the Cold War. Between the early 1950s and the mid-1980s, Maoist China implemented two major spatial interventions to assert control over the sea and its maritime border: the creation of Water Zones and the establishment of Fisherfolk's New Villages (or Fisheries Communes). These initiatives sought to reorganize and sedentarize the highly specialized maritime communities in fixed, land-modelled settlements and to mobilize them as both militia and a critical labour force in socialist fish production. The establishment of zones and communes was also intended to collectivize and mechanize production, and to render the sea a politically safe and economically calculable resource through labour.

Nevertheless, as this paper shows, the state's spatial and ideological visions were continually challenged by the nature of fishing, people's embodied knowledge, and the sea itself—the tides, the fish, the clams, the oysters, and the salinity. The state's Cold War ambitions were never fully realized but were instead constantly negotiated and compromised on the ground. Illegal trade, cross-border movement, and unanticipated fishing activities continued to flourish along the maritime border as vital means of sustenance for water-bound communities—often diverging from the state's imagination of a socialist sea.

Qingyun Lin is a PhD candidate in Architecture, Landscape, and Design at the Daniels Faculty. Lin's research explores informal urbanism and the history of urban waterfronts in post-1950s China, with a specific focus on how the boat people (Tanka)—the floating community historically recognized as an ethnic minority residing in the rivers, estuaries, and coastal areas in South China and Hong Kong—resisted, circumvented, or challenged top-down planning, regulations, and laws through their spontaneous spatial interventions and everyday practices across scales. Lin received a Bachelor's in Landscape Architecture from Tongji University in China, and a Master's in Landscape Architecture from the Delft University of Technology, the Netherlands. Prior to pursuing doctoral studies, she worked for AECOM and UNESCO World Heritage Institute of Training and Research for the Asia and Pacific Region.

Ordering the Invisible
Offshore Wind Structures, Deployed

Pari Riahi
University of Massachusetts Amherst

From the notorious Don Quixote and Sancho Panza's battle with the windmill to large offshore windfarms on coastal towns, we have a long and complex story of harnessing wind power. Considered a source of renewable energy in their current configuration, offshore windmills are both highly effective and controversial. They yield significant energy and thus scientific research to render them more efficient is ongoing. Yet they disrupt wildlife and enter new factors into ecological considerations that affect the ocean and natural environments. Offshore windfarms, whether situated in the middle of the ocean or close to the coast also influence economic, political and social vectors on shore and therefore have effects on the built environment.

This paper takes the case of the Vineyard Wind project, now in its first phase of operation off the coast of Cape Cod in Massachusetts, which will be comprised of over 60 turbines each a mile apart. This project, which comes after attempts to develop offshore wind since early 2000 in Massachusetts, has been halted, debated, reviewed and reactivated several times, with supporters and detractors who object to a host of possible effects, from visual and real-estate values to energy transition and sustainability, to concerns about endangering the eco-system of the region.

The paper argues that like any such project of its kind, while the techno-positive tone and narrative have championed the case and finally enabled the project to be deployed, a more complex and expanded story/history is tied to the ocean and to those who live on the shore. Using this project, and its similar counterparts in other geographies (such as Copenhagen) the paper expands on the role of design practices, in defining new and complex relationships with the ocean. By looking at questions of site and ecology, but also telling the tale of the different inhabitants of the region: affluent seasonal residents, local fishermen, migrants and others who have selected the area as their temporary or long term abode, the paper traces tentative lines, from the ocean to the shore and back, arguing for an intertwined texture of connections and interdependencies that determine one's relationship to the ocean.

Pari Riahi is an architect, associate professor of architecture, associate dean of research and engagement at the College of Humanities and Fine Arts, at the University of Massachusetts Amherst. Riahi's first book, *Ars et Ingenium: The Embodiment of Imagination in Francesco di Giorgio Martini's Drawings* (Routledge, 2015), concerns the systematic inclusion of drawing as a component of architectural design and investigates the treatises of Francesco di Giorgio Martini, the Renaissance architect and artist. She is the instigator, co-chair and co-editor of a series of symposia and their accompanying edited volumes on contemporary architecture. *Exactitude: On Precision and Play in Contemporary Architecture* (University of Massachusetts Press, 2022). *Multiplicity: On Constraint and Agency in Contemporary Architecture is forthcoming* (University of Massachusetts Press, 2024) and lastly, *Quickness: On the Rhythms of Time in Contemporary Architecture* (UMass Press, projected for 2026).

Riahi is currently working on two book projects: *Architectural Drawing in the Post Digital Era: Disjointed Continuity* considers the digital turn in drawing in architecture. Her second project, provisionally titled *Architectures of Collectivity: A Study of Urban Form and Public Grounds*, is a comparative analysis of public housing projects in the suburbs of Paris, which fuses historical research with visual analytical modes through photographs, drawings, and collages. Riahi's work has been published in *Journal of Architecture*, *Journal of Architectural Education*, *Journal of Interior Architecture and Adaptive Reuse*, and *Architecture Boston*. She served as a member of the advisory committee to the *Journal of Society of Architectural Historians* and an international editor of the *Journal of Architecture*.

Tapping the Ocean's Thermal Battery
On the Histories of Ocean Thermal Energy Conversion's Futures

Jonathan Galka
Harvard University, Department of History of Science

Ocean historians have often emphasized the fluid opacity of oceanic matter, processes, and geographies. Yet, counternarratives have rigorously asserted the thorough and situated historicity of ocean places, and further, the potential of ocean histories to usefully resituate and reframe staid interpretations of migration, technological exchange, and development. This paper intervenes in this conversation within the history of ocean science and technology, outlining a history of ocean thermal energy conversion (OTEC). OTEC is a process for generating usable energy by exploiting a thermal gradient between surface and deep seawater. Because of its reliance on steep thermal gradients, scientists and politicians have often pointed to islands with narrow littoral zones as sites for its potential implementation. These include Cuba, St. Croix, Bonaire, and Puerto Rico in the Caribbean, and Nauru, Hawai'i, Kwajalein, Tarawa, and Kumejima in the Pacific.

OTEC's history is bound up with histories of American, Japanese and other empires, as well as with other mid-20th century extractive frontiers including deep-sea mining and distant-water fishing. The technologies and political imaginaries attending these practices developed alongside and through one another, and in the case of OTEC, so-called "free" energy stored by the ocean in the form of heat promised grid-connected electricity production, seawater air-conditioning, and augmented agricultural and aquacultural practices. Yet despite hopes (ranging in commitment from the neo-colonial to the post-colonial emancipatory) that OTEC might generate the power for myriad projects within and beyond islands, OTEC has to-date largely failed to scale. Instead, OTEC pilot projects have cultivated new attachments and anxieties.

This paper combines a transoceanic history of OTEC development with ethnographic encounters at the Natural Energy Laboratory of Hawaii (2023 and 2025) and at the Ocean Thermal Energy Conversion Demonstration Test Facility in Kumejima, Okinawa (2025) to address the question, what have OTEC projects, in the absence of generating power, meant for their boosters, clients, and host sites? And, given that today the shifting landscapes of global capital and of renewable supply chains make it possible to speak of an emerging "tropical market" for OTEC designs, what consequences might this account of attempts to harness seawater's thermal energetic abundance have for a re-encounter with older thermal promises? Altogether, this account argues that deep-sea currents and topographies have subtended political economic projects of networking island sites for extractive aims, and that historicizing OTEC holds the potential to reframe the relationship between empire, science as development, and environmental futures.

Jonathan Galka is a postdoctoral fellow in the Science, Technology and Society Cluster of the Asia Research Institute at the National University of Singapore. He earned his PhD in the History of Science department at Harvard University in 2025. In 2024-2025, he was a visiting scholar at the NUS Asia Research Institute and with the NTU Centre for Contemporary Art on its Climate Change and Cultural Loss project. Beginning in 2025, he will be a postdoctoral fellow in Science, Technology, and Society at ARI. His dissertation and book project examines the 20th-century identification of deep-sea manganese nodules as scientific, political, and economic resources. It queries how the construction of nodules as a mineral resource frontier imbricated the biological and geological sciences with Cold War and post-colonial ocean law and politics and argues that nodules fundamentally shaped modern ocean governance in the process.

Jonathan continues this work in Singapore, as deep-sea nodules take on renewed significance in new energy transitions, as he also begins a second project on the history and future of ocean thermal energy conversion (OTEC). His historical and ethnographic work on oceanic resource frontiers appears or is forthcoming in *Historical Studies of the Natural Sciences*, *Social Studies of Science*, and *History & Philosophy of the Life Sciences*. Prior to beginning his doctoral research, he completed a Bachelor's in the History of Science, Medicine, and Public Health, and in Ecology and Evolutionary Biology, at Yale University.

Cultures

Session chair, Panayotis Tournikiotis
National Technical University of Athens

Moving across Galicia, Rio de Janeiro, the Venetian Lagoon, the Adriatic, and the Black Sea, this panel addresses bodies of water as layered cultural landscapes. Contributions engage with vernacular architectures rooted in Galician fishing traditions; the cultural reappropriation of a military-era pier in Ipanema; the revival of submerged heritage through land reclamation techniques in Venice; the Austro-Hungarian lighthouse network projecting imperial authority across the Adriatic; and the shifting meanings of the Black Sea between memories of war and leisure. Together, they trace how coastal and offshore environments become both stages and archives for the construction of collective meaning.

Galician Ocean and Architecture
Landscape, Production, Heritage and Sustainability

Carmen Fabregat-Nodar, Óscar Fuertes Dópico,
Iago Fernández Penedo
University of A Coruña, Fuertes Penedo Arquitectos

The Galician coast is directly connected to the vast Atlantic Ocean on one side and the more intimate Cantabrian Sea on the other. In some areas, however, the coastline is folded, transforming this direct contact between ocean and land into the protection of the region's characteristic *rías* (coastal inlets or estuaries), which provide calm, nutrient-rich waters that have historically supported a wide range of productive activities. The interdependence between coastal Galician communities and the sea has led to a continuous and subtle architectural transformation of the marine environment and its nexus with the land, adapting it to the needs of each period. Galician vernacular architecture has evolved within the dynamic boundary between land and sea.

Tidal mills, for instance, take advantage of the difference in water levels between high and low tide to generate energy. Shellfish farms (*cetáreas*) and marine nurseries (*viveros*) represent traditional adaptations to intertidal areas, allowing efficient use of these spaces for food production. Mussell rafts (*bateas*) extend beyond the intertidal zone, exemplifying how traditional architectures develop specific strategies to adapt to oceanic conditions, using floating wooden structures to demarcate aquatic plots and transforming the sea into a cultivated space.

These constructions preserve the collective memory of the communities that inhabit the coastline, and can therefore be considered to form an integral part of Galicia's maritime cultural heritage. It can thus be argued that Galician traditional maritime architecture serves as a unifying element, bridging the gap between place and memory, and that this provides a basis for its consideration as a cultural landscape emblematic of the identity of its respective community. This study examines the spatial and constructive strategies adopted by Galician vernacular coastal architectures of tidal mills, shellfish farms and marine nurseries for productive ends, highlighting the importance of cultural traditions in promoting the relationship between productive activities and ecosystems and in ensuring sustainable use of marine habitats by striking a balance between human needs and environmental preservation. The analysis of historical precedents within a specific territory, such as the Galician coast, can provide insights into the development of systematic and adaptable strategies for the sustainable utilisation of oceanic resources for food and energy production.

Carmen Fabregat-Nodar graduated in Architecture from the University School of Architecture of A Coruña in 2009, with an exchange at the Polytechnic University of Turin. In 2015, she graduated in Sociology from the Spanish National University of Distance Learning. She has taken part in research projects on maritime heritage, such as "A study of the coastline from Broña to Barquiña" in 2018 and Traslatio, from 2020 to 2021. Since 2023 she has been a research assistant at the University of A Coruña, taking part in the national Renatur Outes project (2023-2025), and in the European SEALabHaus (2024-2026).

Óscar Fuertes Dópico, PhD in Architecture, trained at the University School of Architecture of A Coruña and the Accademia di Architettura di Mendrisio. His thesis was published by the Regional Government of Galicia and awarded at the 14th Spanish Architecture and Urban Planning Biennial. Since 2019, he has been an associate professor at the University of A Coruña and a partner at the Fuertespenedo Architects, recipient of awards such as the XIV BEAU 2023 Prize, the XV BEAU 2021 Prize, and the Young European Architects 2020 Prize. His research focuses on maritime heritage, currently as principal investigator of SEALabHaus (2024-2026) and director of the Galician Maritime Culture Plan (2021-2026).

Iago Fernández Penedo graduated in Architecture from the Higher Technical School of Architecture of Madrid (2009), with postgraduate studies in the Design and Technology of Industrial Housing from the same institution (2010). In 2013, he enrolled in the International Wood Program, at Aalto University, and in 2014 completed a Master's degree in Structural Engineering in Wood at the University of Santiago de Compostela. Since 2015, he has been part of Fuertespenedo Architects. He has received awards including the XVI and XV Spanish Architecture Biennial Awards (2023, 2021), the Young European Architects Award (2020), the XIX COAG Renovation Prize (2021), and was a finalist in the VIII Enor (2020) and FAD2019 Awards.

Making Waves
Infrastructure and Counterculture in Ipanema

Ciro Miguel
ETH Zurich

In 1971 started the construction of a temporary pier at Ipanema Beach in Rio de Janeiro to support the installation of a pipeline to discharge the city's sewage into the Atlantic Ocean. It was one of the many large-scale infrastructure projects by the Brazilian military regime. Beyond its purpose, it reshaped the physical and cultural landscape of the beach during a critical moment in Brazilian history.

During the pier's construction, the ocean floor was reconfigured, generating powerful waves and transforming the area into a prime destination for surfers. Simultaneously, all the sand removed from the ocean formed artificial dunes along the beach. Because these dunes concealed the constant surveillance at the height of the regime's repression, this artificial landscape became an informal gathering space for surfers, musicians, intellectuals, poets, and artists. There, the tanga was invented, new slang appeared, bands were formed, and one of the pier surfers inspired the hit song "Menino do Rio" composed by a regular of the dunes, the singer Caetano Veloso. In 1975, the dunes were dismantled with the inauguration of the pipeline. Since then, it has discharged 6,000 litres of raw sewage per second, 3.6 km from the beach, affecting the water quality and the fish diversity of the Cagarras Islands.

Drawing on illustrated magazines' photo essays, music, and film, this paper examines how a state-sponsored infrastructure facilitated, transformed, and inadvertently forged the emergence of a new cultural identity in Brazil in just three years. This case study offers critical insights into the interplay of infrastructure, cultural resistance, and ecology, revealing the dynamic and often unpredictable ways engineered landscapes intersect with social, cultural, and marine life.

Ciro Miguel is an architect, photographer, and doctoral fellow at the Institute for History and Theory of Architecture at ETH Zurich (GTA). His research focuses on exploring alternative narratives of the built environment through photography. He obtained a professional diploma from the University of São Paulo (FAU USP) and a Master's degree from Columbia University (GSAPP). At GTA, Ciro has taught architectural design under the guidance of Angelo Bucci (2013) and Marc Angélil (2014-2019). As a practitioner, he was a partner of SPBR Arquitetos for many years and continues to collaborate with the office. Ciro also worked as a design architect at Bernard Tschumi Architects New York (2008-2010). Ciro's work has been exhibited at Biennials in Venice and São Paulo, as well as in museums such as Architekturmuseum der TU München, S AM Basel, Centre for Architecture New York, Pavillon de l'Arsenal, the Het Nieuwe Instituut, and Casa da Arquitectura.

Islands of Void
Excavation and Memory in Offshore Steel Sheet Reclamation Projects—A Case Study of San Marco in Boccalama

Jared Fantasia, Nicola D'Addario
Faculty of Architecture of the University of Porto

This proposal investigates offshore steel sheet reclamation projects, reframing submerged environments as "Islands of Void" and exploring their role in the interplay between architecture and marine landscapes. It highlights the transformative potential of the Larssen sheet piling technique, an innovation introduced by Tryggve Larssen in 1897, which addressed challenges such as watertightness, structural stability, and pressure resistance. By enabling the stabilization of submerged environments and facilitating reclamation and access to submerged terrain for the construction of engineering structures, archaeological excavations, and the retrieval of cultural artifacts, this solution embodies a confluence of engineering, history, and design, enriching the dialogue between built structures and submerged aquatic landscapes.

Using the San Marco in Boccalama archaeological reclamation project (45°23'19.6"N 12°16'53.3"E) in the Venetian Lagoon as a case study, this proposal examines how such interventions stabilize excavations and reveal submerged archaeological treasures, such as ancient ships and structures. These reclamation projects bridge the divide between past and present, offering insights into human ingenuity, technological sublimity, and the enduring influence of underwater environments on cultural heritage. By transforming submerged areas into functional spaces, these interventions reimagine sites as platforms for public interaction, reflection, and storytelling.

Drawing inspiration from land artist Robert Smithson's concept of the "Museum of the Void," this study argues that these unique reclamation methods can create vibrant "islands" of memory, transforming underwater landscapes into spaces of cultural and architectural potential. By preserving and interpreting submerged heritage, these efforts elevate utilitarian engineering into opportunities for architectural discourse, resonating with the long history of oceanic construction.

This research aligns with the conference theme, addressing the ocean as a dynamic site of urbanization and cultural transformation. It highlights the role of reclamation projects in shaping intertidal areas and underwater spaces, proposing a reimagined relationship between architecture and the sea. Through the lens of the San Marco in Boccalama archaeological reclamation project, it showcases how construction in marine environments can inspire architectural discourse and redefine the connectivity between land and sea.

By focusing on the material and spatial transformations facilitated by reclamation techniques, this proposal contributes to an interdisciplinary discussion on the impacts of building practices on submerged aquatic landscapes. It advances a deeper understanding of how architecture can interact with and reshape marine environments, offering new perspectives on the "built ocean."

Jared Fantasia is an architect and PhD candidate at the Faculty of Architecture of the University of Porto. He holds a Master's degree in Architecture from the University of Évora, where his dissertation explored the intersections of land art and architecture in the reclamation of post-industrial mining landscapes—uncovering hidden histories of forced labour, resource extraction, and the negotiation of heritage in dialogue with sustainability and environmental consciousness. His research employs architecture, alongside conceptual and interdisciplinary artistic interventions, as both lens and medium to interrogate and provoke dialogue around complex, layered histories of memory and power across multiple spatial and temporal scales.

Nicola D'Addario is an architect and PhD candidate in Architectural Heritage at the Faculty of Architecture of the University of Porto, where he currently researches digital media as a tool for reinterpreting architectural history. His work bridges historiography, design, and technology. Previously, he was a fellow in the PASAP_MED doctoral programme (UniBA), participating in initiatives such as "Dialoghi sul Patrimonio" and the EU-funded CoVHer project. His recent work includes "Redesigning Bramante's Rounded Perspective" (*Virtual Archaeology Review*, 2025) and a videogame prototype of Terragni's Danteum. He was a tutor at PoliBa and has organised workshops on digital representation in architecture, reflecting a critical, interdisciplinary approach to heritage.

The Sea of Civilizations
Borderlines of the Mediterranean

Sasha Zanko
IIT College of Architecture

The Adriatic Sea, a vital sub-region of the Mediterranean, has historically been shaped by its role as a connector between cultures, economies, and empires. Situated at the crossroads of civilizations, the Adriatic exemplifies the fluidity of sea boundaries, oscillating between solitude and connectivity, mythology and pragmatism. This paper examines the interplay between infrastructure, cultural landscapes, and political power, focusing on the Austro-Hungarian Empire's lighthouse network constructed between the 1830s and 1918.

The Adriatic lighthouses, constructed during a period of industrial expansion and the rise of steamship trade, demonstrate how maritime infrastructure projects can reconfigure and shape cultural landscapes, linking built environments to the cultural and historical dynamics of their surroundings. Strategically positioned on islands such as Sušac and Palagruža, these lighthouses transformed isolated maritime areas into interconnected nodes within a broader Mediterranean network. They functioned not only as navigational aids but also as symbols of imperial authority, asserting Austro-Hungarian control over the contested maritime borderlines of the Adriatic. Simultaneously, the lighthouses acted as social connectors, bridging the sea and the shore and establishing navigation routes that both unified and defined the Mediterranean.

The analysis extends to architects like Zagreb-born Ernest Weissmann and Vienna's Otto Wagner, shaped by the Austro-Hungarian architectural and cultural ethos that emphasised technological innovation and regional connectivity. While neither directly contributed to the lighthouse network, their shared commitment to functional, technologically integrated, and socially aware architecture aligns with the principles reflected in these maritime structures.

By framing the Adriatic as a connector, this paper situates it within the broader Mediterranean narrative of exchange—a region historically animated by the movement of goods, ideas, and power, from Hellenic markets and Roman roads to trade routes of salt, spices, and knowledge. The paper reflects on the Adriatic's dual identity as a realm of solitude and contemplation. Its mythical associations, coupled with its infrastructural transformations, create a complex landscape where cultural identity, imperial ambition, and modernist architecture intersect. Through the lenses of connectivity, solitude, and built infrastructure, this paper reveals how maritime landscapes mirror and shape historical power dynamics, highlighting the blurred boundaries between the natural and the cultural, the solitary and the connected.

Sasha Zanko is a PhD candidate at the Illinois Institute of Technology (IIT) College of Architecture in Chicago, specializing in the architecture of leisure. She manages the Mies Crown Hall Americas Prize (MCHAP) program at IIT, an esteemed award recognizing the best-built work of architecture in the Americas. Sasha holds an architecture degree from the University of Zagreb, Faculty of Architecture, and a postgraduate degree in Environmental Studies from the University of Amsterdam (EPCEM). She also teaches the course "Coastal Futures and Tourism" at IIT, focusing on the interplay between architecture and sustainable tourism development. Her professional experience includes leading research and development initiatives funded by public and private entities. These projects, developed in collaboration with academic, governmental, and cultural institutions across the Netherlands, Croatia, the United States, and Latin America, reflect her interdisciplinary approach to architecture and environmental studies.

The Black Sea
An Archive in the Making

Galena Sardamova
Harvard University Graduate School of Design

This paper studies the geopolitics and poetics of the Black Sea. Bounded by Turkey, Bulgaria, Romania, Ukraine, Russia, and Georgia, this landlocked sea serves as a bridge between Eastern Europe and West Asia, simultaneously separating and bringing together a multitude of territories and shores. Throughout the years, the Black Sea has witnessed human activities such as migration, trade, and extraction, while also serving as a site of non-human processes associated with aquatic life and climate change. These on-/off-shore ecosystems are intrinsically intertwined, and this paper centres water as the binding agent in its various material, mythological, and socio-cultural dimensions—rather than the dominat narrative of land.

Historically called the (In)Hospitable Sea (first known as the "inhospitable sea" which then turned into Pontus Euxinus, Latin for the "hospitable sea" and a euphemism for the earlier name), the Black Sea is a water body of paradoxes. Due to the sea's high levels of minerals and salt, objects tend to float on its seemingly calm surface. On the other hand, the Black Sea's deep waters are highly anoxic, or lacking in oxygen—which makes it possible for marine life to exist only in its oxygen-rich surface waters. This quality also slows down decomposition processes, leading to the remains of shipwrecks in the depths of the sea and turning it into an ever-growing archive of itself.

The Black Sea's materially incongruous waters are currently witness to a global war; somewhat comically, in addition to being a conflict zone, the seashore is still strongly associated with the idea of the resort in the collective imagination of the everyday. The paper looks at maps, personal/public archives, news media, and artworks to trace this multifaceted perception throughout time. By focusing on the dichotomy of active crisis/passive leisure on a macro/micro level, the paper investigates the role of the Black Sea as a site of coexisting nostalgic romanticism, transnational violence, and an uncertain future both in a geopolitical and environmental plan.

Galena Sardamova's artistic, curatorial, and research practice investigates the cross-linguistic and cross-cultural nuances of memory, nostalgia, displacement, and belonging. She is particularly interested in examining spaces of exhibition-making as responsive to the surrounding social, historical, and environmental reality, with the potential to offer a viable alternative to current modes of being.

Originally from Sofia, Bulgaria, Galena graduated in Spring 2024 from the Harvard University Graduate School of Design with a Master's in Design Studies (Domain of Narratives). She received her Bachelor's degree from the University of Pennsylvania in 2020 with a major in Architecture and minors in Fine Arts, Art History, and English. Galena has worked at a number of international artistic and cultural institutions, among which the Slought Foundation, the Barnes Foundation, the Fabric Workshop and Museum, and the ICA (Philadelphia, PA); the Carpenter Centre for the Visual Arts, ArtLab, and Kirkland Gallery (Cambridge, MA); and Swimming Pool Art Space (Sofia, Bulgaria). Galena is currently a guest researcher at the Institute for East European Studies at Freie Universität Berlin, Department of Cultural Studies, with the support of the Davis Centre for Russian and Eurasian Studies at Harvard University.

Habitats

Session chair, Helen Rozwadowski
University of Connecticut

How has the ocean inspired visions of habitation that challenge terrestrial norms and expand the boundaries of architecture? The contributions of this panel examine how humans have sought to inhabit the sea both materially and symbolically, through defensive concrete towers reconfigured as micronations; experimental undersea habitats navigating geopolitical tensions; the displacement of fishing communities in Penang; corporate projections of oceanic urbanism in response to environmental collapse; and the tightening regulation of marine territories in the Gulf of Maine. Together, these perspectives ask what it means to dwell in and with the ocean, offering insights into architectures of survival, control, and resistance that have emerged at sea.

Floating Concrete

Mark Crinson
University of London

Still standing off the north Kent coast and in the Thames Estuary are a number of forts built during the Second World War to provide defence against aircraft, flying bombs, submarines and ships. Named after their engineer, Guy Maunsell, and the product of imperial engineering experience, the distinctive shapes of these forts are firmly lodged in the popular and architectural imagination. Maunsell himself recognised at their inception that they already spoke to science fiction forebears like H. G. Wells's mobile alien machines, while the Archigram group based the moving megastructures of their Walking City on them. Their position beyond territorial waters led to the squatting of one of them by a pirate radio station; another was declared the sovereign nation of "Sealand". Recently, they were the focus of a short lived scheme to redevelop them as a luxury hotel linked by airborne tubules and served by helipad. They bespeak mobility, non-sitedness, and dreams of independence from state controls.

And yet, contrary to this cultural history, my paper will explore maritime sitedness through the Maunsell forts—a material history. This might be understood as a series of sites working out from the forts themselves. First there is the ocean floor on which the sunken concrete structure stands after it has been floated out from the mainland. This floor has to have certain characteristics—depth, solidity, flatness. Then there is the relation between the group of forts as a complex and their tactical location to ensure fields of fire across key shipping and aerial routes—siting according to a set of military and navigational criteria. Next, they are—far more than most land equivalents—utterly dependent in their operational life on being serviced by boat from the land; their penumbra of supply, maintenance, and military command structures aspires by necessity to be utterly rigid and repetitive, and is best understood as an expanded site.

Finally, the site depends upon an infrastructure to procure and construct the forts, bringing to bear expertise (including technical experience from previous wars), materials and materiel through a hinterland that includes the highly expanded defence and industrial estates of wartime Britain, as well as the continuing supply routes of the empire. Taken together, the material and cultural histories of these maritime forts are revealingly contradictory.

Mark Crinson is an emeritus professor of architectural history at Birkbeck, University of London, and a panel member of the Swiss National Science Foundation. He was vice-president then president of the European Architectural History Network from 2016 to 2020. Recent books include *Shock City: Image and Architecture in Industrial Manchester* (2022, winner of the 2024 Historians of British Art Prize), *The Architecture of Art History—A Historiography* (2019, co-authored with Richard J. Williams), and *Rebuilding Babel: Modern Architecture and Internationalism* (2017).

His co-edited book (with Luisa Lorenza Corna) *Struggles in the Concrete: Architecture and the Marxist Tradition* will appear in June 2025. He established his name with two groundbreaking books on colonial and post-colonial issues in architecture—*Empire Building: Orientalism and Victorian Architecture* (1996) and *Modern Architecture and the End of Empire* (2003)—and this area continues to interest him. His current book is titled *Heathrow's Genius Loci* and as part of its research he spent time in New Haven in early 2024 as a residential scholar at the Yale Center for British Art. He was elected Fellow of the British Academy in 2023.

Continental Shelf Life
The Submarine Habitats of the Transatlantic Sixties

Janno Martens
KU Leuven, Flemish Architecture Institute

The 1960s are known for sociopolitical shifts marked by environmentalism, counterculture and Cold War geopolitics. Architectural history has extensively studied the spatial practices of what Kosc called "Transatlantic Sixties" as they unfolded on both sides of the Atlantic. But the extent to which these practices reached beyond the shoreline remains largely uncharted, even though submarine working and living environments witnessed a veritable surge in those years. This paper situates these developments in their socio- and geopolitical context by comparing two examples of submarine architecture:

The first is the Conshelf habitat (1962-1965) of Jacques-Yves Cousteau, a former Navy captain who invented the aqualung and subsequently became a world-famous naturalist. Equal parts research laboratory, living space and media tool, the habitat featured prominently in publications like *National Geographic*. Although he was known as an environmental advocate, Cousteau was backed by the French oil industry, and one of the Conshelf iterations was strategically located in the Red Sea. Were these habitats epitomes of preservation and ecology, or tools of post-colonial petrochemical prospecting?

The second is the Helgoland submarine laboratory (1968-1981). During the 1960s and 1970s, many such labs were established across the Northern Hemisphere (Miller & Koblick 1984). With the involvement of the US Navy, NASA and the General Electric Space Division in the US, and the Leningrad Hydrometereological Institute and Soviet Academy of Science in the USSR, these labs were clearly caught up in Cold War geopolitics. As an aspect of this "submarine space race," the case of Helgoland takes up an interesting position: built in Lübeck, right on the border between West and East Germany, it was operated by the atomic research institute GKKS in Geesthacht, near Hamburg, before travelling to various other North Atlantic allies. Did the fluid, borderless submarine territory permit a less strict separation between East and West? Both habitats researched more than submarine geology, technology and biology. They also explored the limits of psychology and physiology: people had to live under extreme environmental and socio-psychological circumstances. The Conshelf programme believed only well-trained male saturation divers were eligible, whilst scientific enterprises sought to stress-test their researchers regardless of experience or gender. The habitats also facilitated decidedly post-human aspirations: Cousteau saw his "aquanauts" as precursors to a future of gilled "men-fish" who would be able to breathe and live underwater.

This paper is based on a larger research project which focuses on the oceanic architecture of the 1960s and 1970s. Building on recent insights from the blue humanities, it recognises the ocean as a place where reality and imagination interact. I approach oceanic architecture accordingly both as literal *topoi* (as actual, physical places) and as literary *topoi* (as mythical, literary motifs). To signify this double modality, I refer to oceanic architecture as thalassotopias. How did these thalassotopias contest the terrestrial hierarchies of states, landscapes, and bodies?

Janno Martens is a doctoral candidate at KU Leuven and a researcher at the Flanders Architecture Institute. His dissertation deals with the psychological and technological roots of environmental approaches to architecture in the United States between 1964 and 1984, and understands environment primarily as related to matters of perception, behaviour and representation. His new project, Thalassotopias, deals with the significance of oceanic architecture. Martens has published in international peer-reviewed journals including the *Journal of Art Historiography* and *Phenomenology and the Cognitive Sciences*. He is co-editor of *Habitat: Ecology Thinking in Architecture* (nai010, 2022, together with D. van den Heuvel and V. Muñoz Sanz) and *The Architectural Laboratory: Performing Design Research* (Routledge forthcoming, together with R. Heynickx, F. Mattens and S. Symons).

Future City, Sea City

Pollyanna Rhee
University of Illinois

In the middle of the twentieth century a prophecy of doom began to spread and gain popularity among scientists, politicians, economists, and social scientists. The planet, after a period of increasing affluence, was becoming over-populated, over polluted, and running out of resources, particularly energy resources. Ideas such as Garrett Hardin's Tragedy of the Commons from 1968 took hold as a warning. But others saw new opportunities. From the early-1970s the Pilkington Glass Company based in England was one such entity. Designers and executives for the company envisioned plans for cities placed in oceans throughout the world including off Martha's Vineyard, the Yellow and East China Seas, the Persian Gulf, and just off the English coast in the North Sea., The so-called Sea City would have industry to provide resources for the mainland, but also provide housing, education, and jobs for 30,000 people.

By 1980 Sea City was more than a speculation, but involved individuals including Hal Moggridge, an architect and landscape architect, climate engineer Ken Anthony, and civil engineer John Martin. Provisions for energy, included plans to site it near a natural gas field, engineers considered sound proofing, congestion issues, and possible amenities. Nevertheless, Sea City was considered less of a place of leisure, but of work and industry. Despite being based in ocean waters, Sea City's work of ship building, sand dredging, mineral extraction, and food production was meant to also sustain life on earth.

Why do oceans seem to offer a future that land does not? This paper uses Sea City and the Pilkington Glass Company's interest in building on the sea as a case study to lift out the political and economic motivations that led oceans to become a compelling place for continuing life on earth when it seemed that land-based society was reaching its material limits. The seeming lack of national borders and sovereignty, the vastness of the oceans compared to land on earth, and a dream of untethering from the political and material limitations of land all play a part here. The idea of floating cities combined a deep technological optimism and confidence with pessimism regarding humanity's future on land, a tension that continues in the present.

Pollyanna Rhee is an assistant professor of landscape architecture at the University of Illinois. Her research focuses on environmental and landscape history of the twentieth century with a particular interest in the shaping of environmental attitudes. Her first book, Natural Attachments: *The Domestication of American Environmentalism, 1920-1970*, will be published by the University of Chicago Press in May 2025.

Before Ocean Urbanization
Behavioral Frontiers and the Gulf of Maine's Long Pioneering Moment, 1600–1994

Matthew McKenzie
University of Connecticut

The environmental historian Richard Judd has argued that the distant passing of New England's pioneering moment—the moment when the North American landscape came to be divided, cleared, and used according to European practices—set the stage for New England's "re-wilding." This process, which includes the regrowth of regional forests and the return of much previously displaced wildlife, represents not a recovery, but a new and unique relationship between New England people and their local places.

The same, however, cannot be said for the region's waters. Fished since before European settlements, New England fishing grounds have continued to degrade over at least the past century and a half. Driven by legal cases, and in particular the landmark 1994 CLF case, New England fisheries management has only since then been taken seriously. Still, despite court orders, enhanced public processes, and increased regulatory enforcement, New England cod stocks—once the backbone of the fishery—have fallen to near commercial extinction.

This paper argues that, unlike on land, the pioneering moment—the moment when an area transitions from a trans-frontier free-for-all to one where lines, boundaries, laws, and monitored behaviour—has passed only recently in the Gulf of Maine. Legal mandates, GPS, vessel monitoring systems, fisheries observers, and formal data collection have forced the New England fishing industry to shed behaviours that shirk regulatory requirements and accountability only in the past three decades. Those same regulatory and monitoring processes, however, have also laid the foundation for other industries to challenge fishermen's previously exclusive rights to the continental shelf. Thus, as we discuss urbanized oceans, we must also consider how those spaces came to be urbanized, the ecological and social costs of such measures, and what those foundations suggest for future ocean uses.

Matthew McKenzie is a professor of history and maritime studies at the University of Connecticut. His is the author of two books exploring New Englanders' relationships to their marine resources, *Clearing the Coastline* (2010) and *Breaking the Banks* (2018), and served nine years as a federal fisheries manager on the New England Fishery Management Council (2012-2021).

From the Valley to the Island

Angus Taylor
University of Brighton

Islands captivate our imagination, and our imagination conjures islands. From Plato's *Atlantis* to Thomas More's *Utopia*, they have long served as psychogeographical spaces for staging alternative realities. As literary critic Marc Shell posits, "We think by *means* of islands"—the island is a verb, not a noun. Today, this truism manifests in the global tech industry's expansion from the valley to the island. A phenomenon that began figuratively with the fiscal and administrative enclavism of the Free Economic Zone cum Science Park, tech islanding has evolved into a literal process of reclaiming land from the sea in pursuit of new economic and political havens unmoored from inconvenient continental conditions.

This paper explores the motives, contradictions, and consequences of tech islanding, arguing that while the construction of artificial islands is hardly new, this particular strand offers a unique vantage point from which to analyse their significance as ideational devices for exclusionary urban future-making. Consequently, artificial islands are explored here not simply as outgrowths of coastal urbanisation or ostensible tools for economic rationalisation, but as instruments for societal reimagination and transformation. In turn, the paper discusses how this evolving relationship between sand and silicon is shaping contested coastal futures in which ecological and social collapse intersect.

The paper centres on the case of Silicon Island, a 2,500-acre land reclamation project under construction off the southern coast of Penang, Malaysia, and designed by Bjarke Ingels Group as a semiconductor manufacturing hub and luxury enclave for expatriate tech professionals. While Silicon Island promises to revive Penang's historical global prominence as an entrepôt city-state, it also threatens to extinguish the traditional lifeworlds of its fisherfolk, devastating not only the environment but also communities uniquely positioned to help preserve it.

Drawing on ethnographic research, the paper shows how Penang's fishing community's opposition to Silicon Island articulates an alternative vision for island futures, prioritising Indigenous island knowledge over abstracted island imaginaries, and centring seaborne perspectives over land-based ones. The paper also combines literature from Island Studies with Southeast Asian anthropologies of value to demonstrate how the divergent value systems of the tech industry and fisherfolk produce these competing notions of what it means to island, the former mobilising imaginaries of boundedness, fixity, and isolation while the latter reflecting lived dynamics of connectivity, flux, and fluidity. As such, the paper reveals how territorial contestations over islands and their surrounding water bodies are shaped by the conflicting meanings attributed to them.

Angus Taylor is an architectural designer, researcher, and writer based in London, with experience working in South and Southeast Asia. His interests include the territorial dynamics of neoliberal urban development and its impact on subaltern communities. He draws on ethnographic research methods and anthropological bodies of knowledge to understand how people excluded from planning policies articulate their right to the city.

His current research focuses on the politics of tech-oriented development in Malaysia, as well as related issues around spatial and environmental justice. In addition to practicing architecture, Angus is currently a research assistant within the Architectural Association's Archive Department and a writer within the New Architecture Writers program. He has previously been published in the Architects' Journal and exhibited research at the Royal Academy of Arts Summer Show. Angus holds a Master's in Architecture and Urban Design from the University of Cambridge.

Spaces

Session chair, Christy Anderson
John H. Daniels Faculty of Architecture, Landscape, and Design, University of Toronto

This panel explores how architecture mediates, produces, and is transformed by maritime and coastal spaces. The panel follows a wide geographic arc, from the scientific outposts of Canadian cold colonialism; the colonial façades of Portuguese waterfronts, the infrastructural modernisation of postwar Iceland under the Marshall Plan; the oil-slicked Soviet Neft Daşları; and the shifting maritime borders off the Canary Islands, where migration traffic and mortality rates are sharply concentrated. The contributions examine the spatial logics and architectural forms that have emerged through engagements with sea, are shaped by imperial ambition, environmental uncertainty, and geopolitical tension.

Ice Islands and the Architecture of Cold Colonialism

Michael Faciejew
Dalhousie University

As the Cold War expanded the scale of oceanographic research beginning in the 1950s, a new object of scientific inquiry—sea ice—was consolidated as a medium for shaping the history and future of the planet. This paper examines two interlinked built environments as architectural indices of this period of immense geopolitical and environmental uncertainty, which transformed the Arctic Ocean into a scientific priority for the Canadian settler state. The first architecture is the Bedford Institute of Oceanography (BIO), Canada's leading marine research facility, constructed in 1962 in Dartmouth, Nova Scotia, which helped to shape a modern, international, and interdisciplinary discipline of marine research.

Encompassing laboratories, computing facilities, a marine sciences library, and a fleet of scientific exploration vessels, the building's utilitarian modernist design collected multiple federal agencies into a new kind of machine linking national security, environmental management, and energy prospection. The second architecture consists of the BIO's satellite camps and lightweight deployable structures designed for research in the last unexplored marine frontiers of the Canadian Arctic. Leading up to the Ice Island Program (1984-1989), which transformed a giant tabular glacier into a mobile platform for studying the Canadian Polar Margin, huge areas of the Arctic were progressively and discretely staged as a vacant frontier for colonization and resource extraction (especially petroleum). These built environments participated in a broader settler project of Indigenous land dispossession, but their functions also reframed Arctic sea ice as an ancient archive whose data could be mined to evaluate anthropogenic climate change and global patterns of toxification, which were noted by scientists already in the 1960s.

Building on new interdisciplinary approaches to the study of cold environments, particularly Tina Adcock's framing of "cold colonialism," this paper centres architecture to tell a material history of the ocean as an evolving technoscientific construct. In the continuum between Cold War paranoia, settler colonial economic interests, and the investigation of anthropogenic carbon dioxide, these pragmatic spaces of science forged new questions about humanity's relationship to the planet, and to history itself. The paper considers how the BIO's architecture prescribed a material and organizational framework for the systematic gathering of new kinds of facts that fundamentally recast the marine environment as a fragile and unstable system. In its fluvial and glacial states, the ocean was the source for a new veil of uncertainty and anxiety that would cement what today is referred to as the Anthropocene.

Michael Faciejew is a historian and theorist of the global built environment. An assistant professor at Dalhousie University in Canada, he studies the intersecting histories of architecture, media, technology, and colonialism since 1800. He is developing several projects that explore these themes, including a book manuscript which examines the architectural and imperial transformations that forged a modern European culture of information between 1890 and 1960; a special themed issue of *ABE Journal* (Architecture Beyond Europe), which looks at the larger extractive systems shaped by "transactional spaces"—spaces where money changes hands; and an interdisciplinary edited volume on the history and future of reinforced concrete, which offers a new framework for understanding concrete as a global building and energy system (Birkhäuser, forthcoming 2025).

His research has been supported by the Social Sciences and Humanities Research Council of Canada, the Graham Foundation, and the Canadian Centre for Architecture, among other organizations. He is a former associate editor, reviews, of the *Journal of Architectural Education* (JAE). His writing has been published in *Grey Room*, *Thresholds*, *Architectural Theory Review*, and elsewhere. He completed his PhD at Princeton University and was previously a postdoctoral associate at Yale University.

Building an Empire upon the Ocean
The Portuguese Waterfront Avenue as a Metaphor and Method

Antonieta Reis Leite
Centro de Estudos Sociais, University of Coimbra

This paper examines the management of connectivity between land and sea over time within the Portuguese colonial empire. It explores how colonial and imperial urbanization regulations and architectural practices were utilized as tools to assert dominion not only over foreign territories but also the sea itself, which represented Portugal's first and foremost occupied domain. Building on emerging research on the origins and development of the Portuguese Aquatic Lands Act, the central argument posits that these regulations and architectural frameworks were initially conceived as waterscapes, rather than landscapes. As such, they did not emerge from traditional inland urban development but were designed as façades for Portugal's seaborne empire, as articulated by C. Boxer. Therefore, Portuguese waterfronts, or *marginais*, must be analysed from a perspective that prioritizes their relationship with the ocean.

This paper will present a diachronic analysis of the intertwined history of legal frameworks and urbanization processes of waterfronts constructed under Portuguese rule, and will explore how these regulatory practices traversed oceans to impose a Portuguese waterscape that continues to endure as a colonial legacy across numerous islands and coastal regions. Furthermore, land-use regulations of Portuguese origin or influence, which historically preserved waterfronts as public spaces while shaping urban environments, dwellings, and communal areas, also reinforced urban divides and socio-economic inequalities. Consequently, it is essential to understand and describe how such regulations sought to control populations, urban centres, and further urban expansion, often disregarding pre-existing land-based traditions. This strategy contributed to the construction of a colonial maritime urban imaginary through the architecture and urbanization of these spaces, often in ways that marginalized subaltern cultures and voices.

This broader approach challenges Eurocentric historiographies, deconstructing their homogeneous narratives, and aims to restore historical agency to local populations. Additionally, it seeks to uncover hidden narratives embedded in the daily interactions between people, space, and built environments, contributing to the decolonization of knowledge. While the paper's primary focus is on the maritime colonial nature of the regulations and architecture of waterfronts, it will specifically highlight case studies from various regions, including Funchal, Rio de Janeiro, Maputo, and Macau, analysed diachronically.

Antonieta Reis Leite is an assistant researcher at the Centre for Social Sciences at the University of Coimbra and an invited professor of the history of architecture at the Department of Architecture at the same university. She currently serves as the vice-director of CES. She received her architectural training at the University of Coimbra, where she earned her degree in 2000, and later pursued studies in art history at the University Pablo de Olavide (Seville). She completed her PhD at the University of Coimbra in 2012, with a dissertation focused on the settlement process and built environment history of the Azores Islands.

Her research examines the construction of the Portuguese Atlantic World, with a particular emphasis on the colonization of the Early Modern Atlantic islands and coastal areas. Her work advocates for an interdisciplinary approach that integrates architectural and urban history with memory and heritage studies. Drawing on both local and colonial historical sources, her research aims to contribute to the informed management of heritage in post-colonial contexts. She is the author of a book, scientific papers, and book chapters. She actively participates in funded research projects within her field of expertise.

A Marshall Plan for the Ocean

Óskar Arnórsson
Columbia University

That Iceland should be among the countries to receive Marshall Plan aid was ironic. Before WWII, it was one of the poorest countries in Europe. After it, it was one of the richest. Iceland did not experience casualties. Property, plant, and equipment had not been damaged; indeed, it had industrialized its fishing fleet during the war and become a European fishing powerhouse. This industrialization accelerated after WWII through the Marshall Plan, with a little-known fact being that Iceland received the first loan, of $2,300,000, on July 16, 1948, to "build up its fishing industry."

Before the participant countries travelled to the meeting that would form the OEEC in Paris in June of 1948, Icelandic authorities, like other participants, put together a Long-Term Program, which was effectively a wish list of projects the Icelandic government planned to undertake with Marshall Aid. Included on the list were nine trawlers from Britain, a herring oil refining and hardening plant, five new refrigerating plants and thirteen new fishmeal factories around the country, an expansion of the merchant marine fleet, as well as two dry docks to service merchant vessels and the purchase of agricultural machinery. All the above were logical extensions of fisheries and agricultural production. What was new on the program was the expansion of the capacities for electricity generation to power new enterprises, explicitly tied in the program to this electricity generation: the expansion of Laxá and Sogið hydroelectric power stations, as well as a state-owned fertilizer plant, a cement plant, and a flour mill.

One way of framing the Marshall Plan in Iceland is thus as a two-pronged intensification of agriculture and fishing through the introduction of American capital and expertise in combination with homegrown sources of energy, to produce something out of what otherwise would have gone to "waste." It was an apparatus of capture, capturing the biodiversity of the island and channelling it into new consumption patterns that the war initiated. For example, the new British fishing trawlers purchased with Marshall funds, through introducing modest fishermen to imported machine-age technology, transforming their ideas about interior comfort, ideas that they brought with them into their homes. This paper will follow the Long-Term program, both out to sea and into the fishermen's houses.

Óskar Örn Arnórsson is a New York/Reykjavik based architect and architectural historian. He is a recent graduate of the doctoral candidate at Columbia University's Graduate School of Architecture, Planning and Preservation (GSAPP), where he successfully defended a dissertation titled "Architectures of the Marshall Plan in Europe, 1948–1952," in spring 2025. In the dissertation, Óskar looks at how the US governed Western Europe through the built environment in the years after WWII, through an analysis of case studies in West-Germany, France, and Greece. Óskar's topics of interest include architectures of global governance; architectures of development; and architecture and environment. In Summer 2022, he directed the Architectural Association visiting school "AAVS Iceland: Fish, Football, a Political Ecology," on the relationship between fishing and Icelandic "Football Halls," a topic he has also published on in the *Avery Review*. In 2023, he co-chaired the European Architectural History Network's Thematic Conference on the Third Ecology, which took place in Reykjavík, Iceland, from October 11–13, 2023, as a collaboration between the Emilio Ambasz Institute for the Joint Study of the Built and Natural Environment at MoMA and the Iceland University of the Arts (IUA).

Bridges of Power and Play
Geopolitics of Oil Rock and New Babylonian Futures

Solmaz Sadeghi
Royal Danish Academy

While Constant Nieuwenhuys envisioned *New Babylon* as a creative utopia free from labour, Stalin's giant spider, sprawling across the Caspian Sea, symbolised a different vision: one of labour, industry, and state control. Constructed in 1949 off the coast of Baku, Neft Dashlari (Oil Rock), the first offshore oil platform, became a vast, self-sustaining industrial city built on stilts. Housing 5,000 workers, this 300-kilometre network of industrial bridges expanded during the Cold War to include 256 oil wells and 2,000 drilling platforms, underpinning Soviet energy security and geopolitical strategy.

This paper explores the construction and operation of Neft Dashlari as a tool of state control, revealing its industrial, social, and geopolitical significance. For the Soviet Union, oil was not only an economic asset but a strategic resource to outpace the capitalist West. Neft Dashlari became both a symbol of Soviet power and a key fuel source for the Red Army. Designed to tap into the Caspian Sea's vast reserves, the platform was an innovative solution to underwater oil extraction, built on sunken boats and employing cluster drilling mechanisms.

The paper delves into the social and environmental dynamics of Neft Dashlari within the broader context of Cold War geopolitics. It highlights the industrial workforce that sustained it, the harsh living conditions of workers, and the environmental threats posed by oil extraction in the Caspian Sea. The drilling operations led to spills, pollution, and habitat destruction, particularly endangering the Caspian sturgeon, the primary source of caviar. The platform's architecture and infrastructure transformed the sea, intensifying human impact and ecological manipulation.

By examining Neft Dashlari through the lens of technological innovation and state power, this paper explores how industrial infrastructures like oil platforms shape, and are shaped by, the political and ecological landscapes in which they operate. In contrast to the fluidity and creative joys imagined by Nieuwenhuys' *New Babylon*, Neft Dashlari embodies a world of industrial labour, resource extraction, and state control, marked by rigid structures and geopolitical competition. Ultimately, the paper argues that Neft Dashlari represents a critical intersection of labour, technology, and environment, highlighting the tension between human agency, ecological impact, and Cold War geopolitics.

Solmaz Sadeghi is a Marie Curie fellow at the Royal Danish Academy and ETH Zürich (GTA), holding an Master's in Architecture and a PhD in History, Theory, and Criticism of Architecture from Politecnico di Milano. She has been a visiting scholar at the Centre for Privacy Studies at the University of Copenhagen, UCL's Institute of Advanced Studies, and History, Theory + Criticism (MIT Architecture).

Solmaz has taught in the Master's programmes in Complex Construction of Architecture at Politecnico di Milano and currently teaches Spatial Design at the Royal Danish Academy. As an architect and urbanist, she is a co-founder of Inter-Esse Studio and has collaborated with international design studios. Her work has been presented at the Milan Triennale and the Oslo Triennale. Solmaz's research interests include architectural elements, domestic landscapes and infrastructure, public and private territories, gendered spatiality, care, architectural politics, and criticism. She is the Principal Investigator of the IBridge project, funded by the European Research Council (ERC) under the EU's Horizon 2020 programme (Project ID 101032933).

The Border as the Last Maritime Infrastructure
An Analysis of the Spatial Matrix of European Borders on the Atlantic Coast (1995–2025)

Antonio Giráldez López
Universidade de Santiago de Compostela
CISPAC-HISTAGRA

According to different organisations, between 3,500 and 10,000 people have lost their lives trying to reach Spanish shores in 2024 alone. This figure has been growing for the last three decades, making the maritime space one of the deadliest borders. Of the different possible routes, the Atlantic route—the portion of ocean between the other countries of northwest Africa and the Canary Islands in Spain—which is more exposed than the Mediterranean, concentrates a high rate of traffic and mortality. What is the spatial matrix that makes this situation possible?

When attempting to answer this question, we can see how border infrastructures, built by assemblages of architectures, human and non-human agents and lawscapes, have also colonised the maritime surface. Thus, if urbanisation is inextricably linked to the creation and expansion of infrastructures, the border becomes another one that has shifted its radius of action from solid ground to mobile coordinates at sea. However, this displacement acts in a double sense, providing feedback to the network of terrestrial architectures of control, security and refuge under new logics based on operability. In other words, they transfer the spatial logic of the maritime border to land-based architectures: easy relocation, economy of resources and close articulation between agents of different natures.

This paper examines the components that make up this highly automated and deterritorialised territorial infrastructure to make visible the relationships between them, their functions and their operational matrix, focusing on the area of the Atlantic coast and the western Mediterranean. To this end, a framework was established around the last three decades (1995-2025) to analyse which active spatial forms have enabled both their dematerialisation and increasing operability. It pays attention to the different regulatory movements and established political projects as well as to the different resistances and tensions of migrants who, situated in a physical space that is politically denied to them, activate a whole series of spatial mechanisms for their control and monitoring. All of this makes it possible to make visible the spatial matrix where an intense choreography of actions, architectures and assembled bodies dispute the contemporary border and how it is constructed.

Antonio Giráldez López is an architect by the Universidade da Coruña and holds a Master's degree in Advanced Architectural Projects (UPM, 2015). He is currently a postdoctoral researcher at the Universidade de Santiago de Compostela (HISTAGRA-CISPAC). He holds a PhD (with distinction, *cum laude*, 2020) in Advanced Architectural Projects from the Universidad Politécnica de Madrid with the thesis entitled "El dispositivo frontera: la construcción espacial desde la norma y el cuerpo migrante" (The border apparatus: spatial construction from the norm and the migrant body). He is doing a research stay at the Ecole Polytechnique Fédérale de Lausanne (ALICE-ENAC) and has done previous stays at the University of Westminster (Law&Theory Lab).

He is currently working on the intersection between power, memory and built landscape both in postdoctoral research on Galician colonisation and at the Universidad Politénica de Madrid linked to the project Arquitectura y memoria. Monumentalities in Conflict. He has collaborated with Border Forensic (2022-2024) as an external expert. He is a lecturer at the Andrés Bello University (Chile) and the Universidad Antonio de Nebrija, as well as a guest lecturer at UDELAR, UPM, UC3M, Escuela Sur and Elisava BCN. In parallel, he combines his academic work with his publishing practice through Bartlebooth, a publishing and research platform for which he has received national and international awards.

Animals

Session chair, Diego Inglez de Souza
Faculty of Architecture of the University of Porto

Oceans are spaces co-constructed between human and nonhuman life. From cod and sardines to whales and seals, the contributions of this panel explore how marine species have shaped and been shaped by architectural, economic, and cultural practices. They trace the evolving status of Newfoundland's fishing stages following the cod collapse; the colonial exploitation of African brown fur seals; the material afterlives of whales embedded in the walls of Portuguese villages; the deep entanglements between industrial fisheries and ecosystem transformations in Delaware Bay; and finally, the sardine fisheries in the Brazilian Guanabara Bay. More than passive resources, animals are positioned as active participants in the making of ocean histories.

Split, Salted, and Staged

L. Sasha Gora
University of Augsburg

The first night I spent on Fogo Island I learned that buildings move. On the largest offshore island in what is now the Canadian province of Newfoundland and Labrador—one that locals call "an island off of an island"—architecture does not stay still. Houses sway, letting the North Atlantic wind rock them back and forth, and outbuildings—the likes of sheds and stages—once migrated with the seasons, taking their cue from the landwash and shadowing the tide. But more importantly, these examples of the province's so-called vernacular architecture all followed fish. There may be other species in the sea, but to say "fish" in Newfoundland is to mean cod, and Fogo Island's architecture—like other outports across the province—was built to follow cod. That is when there was still cod to follow.

After the 1992 Cod Moratorium and the collapse of Newfoundland's nearly five-hundred-year-old fishery, stages stood still. They stopped moving. But already a few decades earlier, the transition from salt fish to frozen and the development of industrial processing plants relegated outbuildings to memorials of a life and industry that once was. What is a fishing stage without fish? Reflecting on this transition and building off of Robert Mellin's 2003 book *Tilting: House Launching, Slide Hauling, Potato Trenching, and Other Tales from a Newfoundland Fishing Village* I propose to present a paper at "The Built Ocean" Conference that blends environmental and architectural history in tandem with food and cultural studies to spotlight the Newfoundland fishing stage as an example of liminal and amphibious material, cultural, and environmental heritage.

My paper contributes to a material history of the oceans by examining the fishing stage as both an example of a tool for resource extraction and an intertidal intervention, one that straddles land and water, fish and food, industrial history and cultural heritage. Furthering my study of global codscapes as part of my Off the Menu: Appetites, Culture, and Environment research group, my paper will share and reflect on research I gleaned from my 2024 residency at Fogo Island Arts.

L. Sasha Gora is a writer and cultural historian with a focus on food studies, contemporary art, and the environmental humanities. She earned a PhD from Ludwig Maximilian University of Munich and the Rachel Carson Center for Environment and Society, and has held postdoctoral fellowships at Ca' Foscari University of Venice and the Institute for Advanced Study in the Humanities, Essen. In 2023 she joined the University of Augsburg where she is the project director of the Off the Menu: Appetites, Culture, and Environment research group. Her research focuses on restaurant politics and cultural representation, the connections between cuisine and ecology, and all things watery (and often salty). Her first book, titled *Culinary Claims: Indigenous Restaurant Politics in Canada*, was published in March 2025 by the University of Toronto Press.

Exploring Historical Perspectives on Ocean Narratives

Bodies of Water, Agents, Interests, and Impacts Through Brown Fur Seals Stories

Ana Roque, André Carvalho, Diogo Falcato
University of Lisbon, Nova University of Lisbon

Historical narratives of the oceans are shaped by diverse agents, their interests, and objectives, as well as the consequences of their actions. Using the southern African Brown Fur Seal as a case study, we explore how diverse agents shaped marine ecosystems and human societies. The study emphasizes the oceans' dual role as ecological systems and pathways for exchanging resources, knowledge, and labour, illustrating the interconnectedness of ecological and socio-cultural processes across boundaries. The research highlights the multidisciplinary approach required to study oceanic histories, drawing on environmental history, maritime studies, and cultural analysis while addressing the challenges of engaging with diverse and geographically dispersed historical sources in multiple languages and spread across continents. By advocating for collaborative research networks, digital tools, and comparative methodologies, it seeks to overcome these barriers and reconstruct a differentiated history of marine interactions.

Focusing on the profound impact of colonial exploitation, this study uses Brown Fur Seal hunting as a lens for broader analysis. Results provides a foundation for: (i) Mapping the species' distribution areas and colonies from southern Namibia to Mossel Bay; (ii) Documenting hunting practices, the scale of extraction and the conversion of seals into marketable products (pelts, fat, and oil); (iii) Identifying seal hunting structures and facilities; (iv) Analysing sealing techniques and processing methods of products for trade; (v) Tracing coastal landscapes changes related to extractive practices, including the establishment of facilities and overexploitation of natural resources (forest products, salt, freshwater); (vi) Identifying the social groups (colonial agents, local communities, enslaved people) and the transoceanic maritime networks that organized and managed the seal-derived trade.

In turn, the analysis of this documentation highlights the oceans' fundamental role in facilitating the movement of resources, knowledge, and technologies within the framework of European colonial empire-building. It demonstrates how the exploitation of marine environments disrupted ecosystems, triggered socio-environmental transformations, left lasting imprints on coastal landscapes, and deepened social inequalities. These findings deepen our understanding of the ecological and socio-economic consequences of colonial extractive practices, shedding light on the historical interplay between humans and marine environments. By addressing diverse sources and advocating for collaborative, multifaceted methodologies, the study reinforces the importance of understanding the oceans as both historical infrastructures and spaces of ecological and socio-cultural interaction.

Ana Cristina Roque, a researcher at CHUL—University of Lisbon, and member of the ERC Synergy Grant 4-Oceans team (CHAM-FCSH, NOVA University), holds a PhD and Master's degree in the History of Discoveries and Portuguese Expansion (NOVA University), a Bachelor's degree in History (University of Lisbon), and a degree in European Higher Studies (University of Nancy 2). With extensive professional experience, including work in Mozambique (1983–1985), research at the Instituto de Investigação Científica Tropical (1995–2015), and participation in international cooperation projects with CPLP countries, her academic focus encompasses Southeast African and Indian Ocean history, Environmental History, and African regional studies. Her contributions include teaching courses on African and Climate History, serving as principal investigator on two research projects, and publishing numerous scholarly articles.

André Carvalho holds a Master's degree in History from NOVA-FCSH, and a Bachelor's in European Studies from Lisbon University, School of Arts and Humanities, where he is currently enrolled in a second Master's program in Documentation and Information Sciences. He works as a research assistant in the ERC Synergy Grant 4-Oceans. His work in the project has sparked a special interest in the study of seals and sirenians.

Diogo Falcato holds a Bachelor's degree in History with NOVA-FCSH. Currently awaiting public defense on his Master's dissertation in Modern History. Research Assistant with the ERC Synergy Grant 4-OCEANS project, where his work and areas of interest mainly revolve around sealing history, data organization and systematization, as well as the intersection of natural and cultural history.

Another Bone in the Wall
In Atouguia da Baleia Whales Connect the Sea to the Land, and Nonhumans to Humans

Nina Vieira, Rui Venâncio, Joana Baço, Cristina Brito
CHAM, Peniche Municipality

Whales are connectors of spaces and cultures, of different times and multiple agencies. Whales have been killed to the brink of extinction, removed from their marine ecosystems, transformed and consumed, and are embedded in terrestrial human life. The extent to which whales were appreciated, valued and used by humans has shaped the conditions animals experienced life and death, how their body parts were manufactured and used for, and how they were given a significance in their afterlife.

Our paper addresses the connections between ocean and land through the interactions between a marine animal—whales (comprising several species)—and a terrestrial one—humans—at the light of the animal and material turns. By acknowledging animals, and whales in particular, as co-constructors of history and agents in shaping human life and culture, we argue that whales are builders of the urban landscape and identity of Atouguia da Baleia. We are focusing on a small village in the west coast of mainland Portugal where whales are preserved in the toponymy and where whales' bones are being found with an intriguing regularity on the walls of houses—what we are calling "whale walls."

Through the analysis of documentary and material evidence, we have been reconstructing the history of whaling practices of the mediaeval and early modern periods in Atouguia da Baleia and Peniche. We have located and mapped the occurrence of whales' bones in the village landscape; to inventory, measure, photograph and make 3D models of the bones; and to conduct sampling and lab analysis for dating and species identification. Our ongoing research already reveals a concentration of "whale walls" along one of the main axes of the village—Rua Dr. José Augusto Vaz/Rua Direita/Rua Grande—and its surroundings. This main street runs from the Pelourinho square, situated in front of the medieval Parish Church of S. Leonardo—where a 5-metre whale jaw stands for several decades—and proceeds towards the Nossa Senhora da Conceição square. These structures are built of limestone from the region and are composed by one whale bone, occasionally two, suggesting a symbolic meaning rather than a structural function.

We are opening new debates underlying motivations and significations of the incorporation of these materials in walls. This is a unique case in Portugal, with few parallels at global level, where whales stand as builders of the land and testify the ecological, emotional and patrimonial relevance of ocean-land, nonhuman-human entanglements.

Nina Vieira is an environmental and animal historian trained in Biology, Marine Ecology and History. She is a researcher at CHAM (NOVA FCSH), being a fellow of the ERC Synergy Grant 4-OCEANS: Human History of Marine Life, and the PI of the brand-new FCT funded project Animals of Lisbon: Tracking the presence and role of (non-human) animals in the history and landscape of the city.

Rui Venâncio has a degree in History, variant in Archaeology, and a Master's in Cultural Management. He is currently a PhD candidate in Medieval Studies at NOVA University of Lisbon and a senior technician at the Municipal Council of Peniche, being responsible for coordinating the Culture service.

Cristina Brito is an environmental historian of the early modern period, focusing on oceans and aquatic animals, the Blue Humanities and the Anthropocene. She is a PI of the ERC Syn Grant 4-OCEANS, senior researcher at CHAM, associate professor at NOVA FCSH, and associated researcher at the Trinity Centre for Environmental Humanities (TCD).

Joana Baço is a maritime archaeologist, researcher of the ERC Syn Grant 4-OCEANS at CHAM. She is responsible for management, science communication and for photogrammetry and 3D modelling. Joana sometimes writes songs and sings.

Building an Enclosed Coastal Sea
The Architectural Ecology of Delaware Bay Fisheries

Michael Chiarappa
Bayshore Centre

During the second half of the nineteenth century, and into the early twentieth century, the industrialization of fisheries on New Jersey's Delaware Bay—one of the largest enclosed coastal seas on the eastern coast of the United States—brought sweeping transformation to its maritime cultural landscape. The region's fisheries and supporting shoreside enterprises were intent on capitalizing on a rapidly developing American market economy demanding the bay's rich stocks of oysters, shad, and sturgeon (principally for caviar). They created a mixture of architecture and watercraft not only responsive to the physical environment (water depth, tidal action, surrounding salt marsh), but equally critical in structuring work experience attuned to the biology and wider ecology of each target species.

Placed within the historical and environmental context that shaped the Delaware Bay's modern oyster, shad, and sturgeon fisheries, this presentation explores the "architectural ecology" of each fishery. With this focus, it will examine the interaction of each fishery's buildings, watercraft, shipyards, and harvesting technology. All, by necessity, cumulatively served the environmental calibration that informed the gathering of marine resources from this enclosed coastal sea and their ultimate movement from waterborne to terrestrial settings. Owing to local conditions, this marine working landscape/waterscape upheld the efficacy of vernacular designs (both in watercraft and shoreside structures) derived from traditional use patterns and ecological knowledge. At the same time, given the volume demand of mass marketing and the ascendancy of railroad networks to meet this need, dramatic modern transshipment and processing structures were added to this mix.

Crafted to accommodate the biological and physical rhythms of the Delaware Bay's marine environment, the architectural ecology of these fisheries centred on coordinating knowledgeable harvesting technique, technological acumen, product preservation/freshness, sanitary handling, and dockside revenue. Each of these concerns coalesced in a working landscape designed to efficiently ensure the flow of living organisms (oysters) and processed fish (shad and sturgeon) into both American and international marketplaces.

Specifically, this topic will be examined through the following sites of fishery activity: the construction of large-scale oyster processing and transshipment facilities by the Pennsylvania and Jersey Central Railroads; the construction of the bay's oyster farming system; shipyards and the environmental fit of oyster vessel design; boatbuilding construction and use in the shad and sturgeon fisheries; shad and sturgeon processing sites; and temporary and permanent village settlements adjacent to the Delaware Bay's fishing grounds.

Michael J. Chiarappa's work focuses on American environmental history, the history of America's built environments and landscapes, public history, and local/regional history, always addressing both land and water. He received his PhD from the University of Pennsylvania and has taught at Western Michigan University, Quinnipiac University, and Washington College. He has conducted numerous field schools focusing on historic preservation, maritime preservation, museology, oral history, and local history in the Middle Atlantic, New England, Chesapeake, and Great Lakes regions and in the Pacific Islands.

A graduate of the Munson Institute of American Maritime Studies, he has worked on maritime and environmental programming with New Jersey's Bayshore Centre at Bivalve, the New Bedford Fishing Heritage Centre, the Smithsonian Institution, the National Park Service, the Michigan Department of Natural Resources, and the Michigan State University Museum. Currently, he is co-editor of *Buildings and Landscapes: The Journal of the Vernacular Architecture Forum* and serves as Historian-in-Residence at the Bayshore Centre. He is a recent recipient of the Nantucket Historical Association's E. Geoffrey and Elizabeth Thayer Verney Fellowship, focusing on Nantucket Sound's scallop fishery and its built environment. Dr. Chiarappa is co-author of *Fish for All: An Oral History of Multiple Claims and Divided Sentiment on Lake Michigan* and co-editor of *Nature's Entrepot: Philadelphia's Urban Sphere and Its Environmental Thresholds*.

Sardines and the History of Guanabara Bay

Eduardo Augusto Costa
University of São Paulo

Rio de Janeiro is the most famous city in Brazil. It was the country's capital from 1763 to 1960, from colony to independence. It is also known for its culture, with clear African and indigenous influences. But it is the extraordinary landscape of the hills that make up Guanabara Bay that it is best known for. A unique landscape, known all over the world as a postcard. A place with calm waters, essential to protect the territory from invasions by undesirable groups such as the French, Spanish and Dutch. It was also essential for the organisation of internal and external trade. A landscape that was also much discussed by Brazilian and foreign architects and urban planners during the country's modernisation process in the 20th century. But if the history of Brazil and of this city is intertwined with this landscape, it is also necessary to recognise the importance of one species in the fortunes of this territory: the sardine.

Found in abundance in the region, the sardine was the staple food of the population. During the colonial period, it was an essential part of the diet of the natives, Africans and Portuguese, each of whom was accustomed to it in their own way. In the modern era, with industrialised food, canned sardines were essential to maintain a minimum level of nutrition for a poor population. As a cheap and easily accessible food, canned sardines provided a minimum standard for the Brazilian population. Most of the canned sardines consumed in the country were fished and produced in Guanabara Bay.

This work seeks to recount the history of Guanabara Bay through the sardine. From the colonial period, with its artisanal fishing techniques, to the industrial fishing that has served a food industry since the mid-20th century, the impact of this fish on urban life in the cities of the region and throughout Brazil is discussed. In particular, in the modern period, the relationship between industrial fishing and the emergence of the steel industry in the country is observed. An industry that was established in Guanabara Bay, in the city of São Gonçalo. It was also responsible for the production of steel for bridges, buildings and sardine cans.

Eduardo Augusto Costa is a design historian and professor at the School of Architecture, Urbanism and Design, University of São Paulo. He is one of the directors of the Laboratory of Design, History, Matter and Memory (DHMM). His research interests include historiography, intellectual history, archives, visual culture and environmental history. In 2024, he began the research Environmental History of Design: Connecting archives, which seeks to rethink the history of Brazilian design through environmental history.

Images

Session chair, Mari Lending
The Oslo School of Architecture and Design

Across time, the ocean has been rendered knowable and controllable through distinct visual and symbolic frameworks. This panel asks how the ocean has been seen through scientific instruments and architectural tools, but also through geopolitical imaginaries and national mythologies. Contributions in this panel revisit the Spilhaus projection; examine the legacy of German imperial oceanography; trace the infrastructures of polar observation; unpack the image politics of the Indo-Pacific; and confront the ambiguous monumentality of petroleum ruins. In doing so, they consider how images have shaped, mediated, and contested our understanding of the sea.

To See the Oceans

Fiona Lim Tung
University of Waterloo

In November 1979, the oceanographer Athelstan Spilhaus published an article in the Smithsonian entitled "To see the oceans, slice up the land." In this article, Spilhaus describes using a cut across the land as the edge of a world ocean map. He argued that since water covers more than two-thirds of the earth's surface, a map of the oceans was a world map. From this thinking emerged the Spilhaus map projection, derived from the Hammer-Aithoff equal area and August conformal projections, which presents the world's oceans as a continuous body of water. The Spilhaus projection shifts the landcentric perspective of conventional cartography to one that privileges not only what Spilhaus called "the free interchange" of water and matter, but also the central position oceans play in ecological resiliency.

The Spilhaus projection was not the first drawing to take an oceanic perspective, but it prompts the question of how does the way we typically draw the oceans diminish and underestimate their importance, power, and behaviour? Through conventional projection, we have come to understand water at the service of land. The edge between water and land is represented as a hard line although water rises, retreats, and flows, is suspended in the air, and exists in its range of states—and rarely is it pure water, but entangled with minerals, garbage, pollutants, and frozen—for now—within glaciers, thousands of years of archaeological evidence.

This paper shares research on the history of representing oceans, analysing purpose, methodology, context, graphic techniques, and projection type, to speculate on how we move forward. These include relational wayfinding maps and artifacts of the Inuit and of Polynesian transoceanic mariners, to ocean-centred projections such as Spilhaus and the Cameron Aquatic Projection.

In the age of climate crisis, of rapid glacial melt, floods, and politically contested waters, to continue drawing the world's oceans as static surfaces demarcated from each other, and delineated from land by hard, fixed lines will prevent the necessary and literal shift of perspective needed to work as one with, and not against water.

Fiona Lim Tung is a designer, researcher, and educator. Fiona holds positions as assistant professor, teaching stream at the University of Waterloo School of Architecture in Cambridge, Ontario, and at the John H. Daniels Faculty of Architecture, Landscape, and Design at the University of Toronto. She was previously a visiting scholar at Carleton University's Azrieli School of Architecture and Urbanism.

Fiona's research focuses on new agendas in architectural representation, design pedagogy, and the potential of architecture to contribute to more equitable futures. Her work exploring the role of drawing as a tool for research and spatial observation has been presented at conferences internationally. Her design practice focuses on the potentials that exist in the overlap between high and low-tech fabrication methods in contemporary craft. Her work has been widely published in magazines, in books, and exhibited in galleries nationwide.

Wave Architectures
Conservation Techniques and Oceanic Deconstruction on the S.M.S. Planet

Clemens Finkelstein
Käte Hamburger Research Centre global dis:connect, Ludwig Maximilian University of Munich

This paper examines the unexpected intersection between architectural surveying techniques and oceanographic research in the early twentieth century, particularly focusing on the stereophotographic efforts to categorize ocean waves aboard the imperial German marine research vessel S.M.S. Planet. Originally devised by architects like Albrecht Meydenbauer to produce accurate three-dimensional records of architectural heritage, the stereophotographic method underwent significant disciplinary evolution when applied to oceanography. Scientists sought to convert the ocean's surface into a quantifiable space by utilizing these techniques in the fluid dynamics of the sea, effectively constructing the ocean as a scientific subject.

The paper situates these efforts within the broader context of architectural technologies and their interdisciplinary applications, emphasizing the conversion of oceanic space into data. Initially designed to document the permanence of architectural structures, the stereophotographic technique encountered new challenges while attempting to capture the ephemeral and fluctuating nature of ocean waves. This study uncovers an overlooked intersection between built and natural environments by examining the necessary technical adjustments and conceptual shifts required to adapt architectural survey methods for oceanography.

Furthermore, this paper argues that the stereophotographic work aboard the S.M.S. Planet exemplifies a broader early twentieth-century scientific trend of treating dynamic natural systems as fixed, measurable entities. This epistemic drive aligns with contemporary architectural history's exploration of how technologies influence human-environment interactions. Traditionally perceived as limitless and amorphous, the ocean was reinterpreted through stereophotography as a surface made up of distinct, analysable units, linking it to architectural interpretations of spatiality. By tracing the evolution of stereophotography from the preservation of historical buildings to the analysis of ocean waves, this paper highlights the shifting boundaries of architectural technologies and their impact on scientific explorations of the natural environment. It thus advocates for reevaluating architectural history's connection with the "built" beyond land-based contexts, expanding its focus to encompass the ocean as a constructed epistemic domain.

Clemens Finkelstein is a historian of the built environment who explores the entanglements of architecture, technoscientific networks, and planetary media. He holds a PhD in the History and Theory of Architecture from Princeton University, receiving Graduate Certificates in the History of Science and Media + Modernity. As a Fulbright scholar at Harvard University GSD, he graduated with a Commendation for Outstanding Achievement.

He held various fellowships, including at the Princeton Institute for International and Regional Studies, FU Berlin, and the University of Hamburg. His work has been supported by numerous grants, including from the History of Science Society, the Andlinger Centre for Energy and Environment, and the Princeton-Mellon Initiative in Architecture, Urbanism & the Humanities. His transdisciplinary practice encompasses curation, publishing, teaching, and experimental art-science collaborations exhibited internationally. The book *Planetary Forest* (DISTANZ, 2024) documents one such project with bio/geoscientists.

His writing has appeared in several journals and edited volumes, including *Sick Architecture* (MIT Press, 2025), *The Sound of Architecture* (Leuven UP, 2022), and *Architectural Theory Review*. He is currently preparing three major book projects: a monograph, *Architectures of Vibration: A History of Planetary Forces*, based on his doctoral dissertation; a co-authored volume, *Our Planetary Condition: Foundations for a Politics with the Earth*; and a co-edited compendium, *Roots to Skylines: Hybrid Labor and Planetary Building*.

Environing the Polar Oceans
Architectures of Measurement and Control

Aniella Sophie Goldinger
Technische Universität Berlin

This paper explores the material and spatial dimensions of environing technologies in polar oceans, emphasizing their role in measuring, monitoring, and controlling environmental processes. Focusing on the Arctic and Antarctic as sites of geopolitical tension, environmental transformation, and data generation, the paper investigates how polar infrastructures have mediated the co-evolution of scientific research, global knowledge production, and geopolitical strategies. Case studies span from the end of the 19th century to contemporary practices, highlighting the transition from early whaling stations—key sites for both resource extraction and early environmental record-keeping—to modern infrastructures such as icebreakers, buoys, and meteorological outposts. Whaling stations, with their detailed logs of whale migrations and oceanic conditions, represent some of the first systematic attempts to record polar ocean environments. These archives offer a unique perspective on the historical entanglements between resource extraction and environmental knowledge production.

The paper also considers contemporary animal-borne observation systems (e.g., tagging seals or whales with data-collection instruments) as a continuation of this environing tradition, where marine species themselves are incorporated into monitoring networks. These animal-integrated technologies reflect a shift toward dynamic, distributed architectures of environmental observation, challenging traditional notions of infrastructural space and control. By tracing the material and spatial evolution of these infrastructures, the paper situates polar oceanic environments as critical to the development of modern environmental epistemologies and global information systems. Furthermore, it examines how the dual imperatives of scientific discovery and geopolitical strategy have shaped the design, deployment, and impact of these infrastructures, contributing to a broader understanding of the intersections between architecture, technology, and environment. This study positions the polar oceans not as remote voids but as operationalized enviro-technical landscapes, vital to the histories and futures of environmental knowledge production and global ecological governance.

Aniella Sophie Goldinger is an architect and transdisciplinary spatial researcher, based in Berlin. Her research is centred around oceanic hinterlands and the extended urban fabric of the polar territories, and works to render visible the interplay between structures of power, ecologies, and more-than-human stakeholders across critical mapping, environmental histories, and science and technology studies. She is a research and teaching associate at the Institute of Architecture, Technische Universität Berlin and a member of the Architectural Association's Terrain Lab.

Her current research includes an interdisciplinary curatorial project on the imaginaries and environmental controversies of the sub-Antarctic Bouvet Island, critical remote sensing, more-than-human mapping, and environing technologies. She participated in the Marine Research Institute's 2023 winter expedition to the Barents Sea and continues to be drawn towards the wet, cold, and viscous territories of the polar regions.

Kill Boxes, Vertical Worlds, Mare Nullius
Global Powers' Fight over the Hegemony of the Indo-Pacific Oceans' Representation

Urtzi Grau
University of Technology Sydney

In May 2013, the Australian Labor Government of Julia Gillard released the "Defence White Paper 2013," which included Australia's shift from the Pacific towards the Indo-Pacific region. After years of defining its position in the world in relation to the Pacific Ocean, Australia added the Indian Ocean, constructing its own planetary region: a mass of water that covers almost two-thirds of the world. The White Paper imposed the coherence of the region's name into an implausible geography connecting a coastline no country had ever considered—from the West coast of the Americas to the East coast of Africa—and merged two oceans with an island at its centre: Australia.

That year, Dr Hao Xiaoguang, a researcher at the Chinese Academy of Sciences, published the first version of "China's Vertical World Map," a depiction of the world in portrait orientation with the Indo-Pacific at its centre. Soon adopted by the People's Liberation Army, the map aligned with the *One Belt, One Road* initiative, presented the Earth's poles—and its untapped resources—without the distortion typical of cylindrical projections of the globe while symbolically displacing the projection glitches towards direct competitors like the US and regions away from China's area of interest.

Also in 2013, US Admiral J. Locklear, commander of the US Pacific Command, coined the term "liquid continuum" to describe the Indo-Pacific. The reference to a continuous maritime common implied complete unrestricted access to all areas, a flattening out of any discontinuities or limits in the region posing obstacles to US presence. The description was in line with the "Kill Box" protocol. This US army term refers to a three-dimensional target area coordinating joint weapons fire that can be legally deployed anywhere, lawfully defining an area of exception.

This paper explores the ongoing construction of the Indo-Pacific region—probably the most extensive design project in the world—using Australia's move, China's vertical map and the US kill boxes as case studies. Intersecting policy, cartography and military strategy, they fit the definition of *parafictions*, entities with a fictional status whose effects are heavily grounded in the real, as they illustrate the impact of global powers' fight over the hegemony of the region's representation, unveiling how imperial impulses behind historical colonial maps and the *Terra Nuliius* policy are being deployed in the two oceans.

Urtzi Grau is an architect, an academic in the School of Architecture at the University of Technology Sydney, and the founder of the office Urtzi Grau / Fake Industries. His research explores the role of architecture in responding to critical challenges impacting the Indo-Pacific region, including climate justice, immigration, land rights and extractive economics. His research has been published in *Interiority, Journal of Architectural Education*, *Journal of the Society of Architectural Historians*, *ARQ*, and *RA Revista de Arquitectura* and has authored the books *Analogue Images* (Perimeter, 2024), *Folk Costumes Indo Pacific Air* (APE, 2022), *Better Together, Stories of Contemporary Documents* (URO, 2022), and *Learning to Live Together: Humans, Cars, and Kerbs in Solidarity* (Bartlebooth, 2021).

His work has been exhibited at the Venice Biennale, the Lisbon Triennale, the Istanbul Design Biennial, and the Seoul Biennale, and it is part of the permanent collections of the Centre Pompidou and the Art Institute of Chicago. In his office, Grau uses replicas—literal reproductions of pre-existing works and, in a sense, denoted in Romance languages, responses to previous statements—to produce architecture. His projects include Biblioteca de Lorenteggio in Milan, Murrin Bridge Preschool and Bass Hill Community Centre in Sydney, and OE House in Tarragona.

Oceanic Monuments

Erik Langdalen
Oslo School of Architecture and Design

Chronicled in Norse mythology, Frigg was the wife of Odin, mother of Balder, named the goddess of love and fate, associated with prophecy, clairvoyance and motherhood, and considered the most beautiful of them all. The naming of a gas field after the Nordic edition of Aphrodite might not be obvious, but the fact that 50 of the 127 oil and gas fields on the Norwegian continental shelf have names derived from Norse mythology, may hint at the extent to which the extraction of natural resources and national mythology are intertwined.

The Frigg field was discovered in 1971, expanding across both British and Norwegian sectors, and at the time the largest gas reservoir ever found offshore, allowing for the extraction of 192 billion Sm3 of methane gas through its 27 years of operation (1977–2004). The field delivered exclusively to Britain, supplying at the most one third of the UK's demand for gas, as well as providing the only dry-shod and tax-free passage between the two countries. In 2012, the dismantling and recycling of the platforms was completed, except for three gigantic concrete legs from the process platform TCP2 that still protrude above the water surface. The 104 meters long concrete foundations, anchored in a cluster of 19 concrete cylinders on the seabed, are considered too risky and expensive to remove and will stand for centuries. The Condeep platform type, developed by the company Norwegian Contractors and constructed in 14 variants from 1975 to 1995, was recently coined "the pyramids of Norway" and proposed as UNESCO World Heritage. While this idea was rejected by The Directorate of Cultural Heritage, the remains of TCP2 are already behaving as a monument.

Research on the environmental impact of removing petroleum installations yields surprising results: their total removal will cause more damage to marine life than keeping them in place. Due to restrictions imposed on the fishing industry, a symbiosis of technology and nature has unexpectedly created a haven for marine life utilizing the petroleum structures for protection and growth. Moreover, removal would allow for re-entry of unsustainable fishing activities, mobilize buried pollution and cause massive CO2 emission.

With this ambiguous oceanic monument as a point of departure, this paper contemplates the intertwining of fossil fuel extraction, national myth-making, heritage practices, technological innovation, ecological systems and international politics, and provides a framework for rethinking how we can tackle the accelerating climate crisis more holistically.

Erik Langdalen is a practicing architect and a professor of architecture at the Oslo School of Architecture and Design. He runs an award-winning practice specialized on the preservation and transformation of historic buildings, including the Eero Saarinen designed US Embassy in Oslo (2023), the Magnus Poulsson designed Dombås Church (2024), and PoMo Museum of Contemporary and Modern Art in Trondheim (2025), as well as a number of buildings and heritage sites across Norway. His teaching and research focus on the recent past, specializing on concrete architecture, buildings systems and components.

Erik is the Deputy Project Leader of the research project Provenance Projected. Architecture Past and Present in the Age of Circularity (2023-2027). He is in charge of the Re-Store course portfolio, investigating how architectural education needs to respond to the climate crises through the reuse, preservation and transformation of what is already built. His books include *Hamsun, Holl, Hamarøy* (2010), *Experimental Preservation* (2016), *Concrete Oslo* (2018) and *Sverre Fehn, Nordic Pavilion, Venice*. Voices from the Archive (2021). He is the owner of the cultural centre Budsjord Historic Farm at Dovre. Erik holds a Diploma of Architecture from AHO (1994) and a M.ARCH AAD from Columbia University GSAPP (1997).

Ecosystems

Session chair, Carson Chan

This panel examines ecosystems as entangled terrains of architecture, infrastructure, and environmental change. Whether examining the unexpected biodiversity flourishing around decommissioned nuclear reactors; 19th-century whaling stations transformed Arctic landscapes; the communal infrastructures that sustain Malaysian fishing villages; visionary experiments of mineral accretion techniques as regenerative design strategies; and the long-term environmental consequences of Cold War-era development in the Bay of Bengal; contributions foreground the material and political entanglements of ecosystems and the built environment.

Nuclear Power and Birdwatching
A Coastal Ecosystem

Natália Petková
ENSA Paris Malaquais

The intervention considers the interplay between energy production, marine flora and fauna, and wildlife tourism on the edge of the Atlantic Ocean at Dungeness, in south-east England, since the construction of two nuclear power stations in 1965 and 1985 respectively. Purposely built on Britain's Kentish coast, the Dungeness A and B nuclear power stations used seawater for cooling whilst in operation. According to the International Atomic Energy Agency, 45% of nuclear power stations are cooled in this way. At Dungeness, the release of heat into the sea through two outfall pipes encouraged the proliferation of aquatic plants, which in turn attracted a variety of fish.

These provided a new feeding ground for a number of seabird species, often seen circling above what is locally known as "the patch" or "the boil" of warm water, several metres from the shingle beach. As a result, the site has been attracting an increasing number of birdwatchers, with thousands flocking there annually. To mitigate disturbance to the birds, a series of timber hides were built along the shore by the Central Electricity Generating Board that previously managed the power plants.

Although the last turbines were turned off and disconnected from the national electricity grid in 2021, the long process of dismantling the nuclear power stations—which sit on top of some 400 uranium-filled assemblies—requires the hot fuel to be stored under the sea for 90 days before it is deemed safe enough to be placed in steel flasks and transported to a nuclear waste facility in Cumbria, more than 600km to the north. The built and natural components of the environment thus continue to interact at Dungeness through the medium of waste heat. This nascent case study combines a photographic essay with a preliminary reading of the local press and archival records as well as exploratory in-situ interviews. By highlighting an example of energy infrastructure that seemingly enriches the diversity of coastal wildlife, it offers a counterpoint to one-sided accounts of man-made environmental destruction.

Natália Petková is a Zurich-based architect and affiliate researcher at ENSA Paris-Malaquais (Laboratoire ACS). She graduated from the University of Cambridge (2015) and the École des Hautes Études en Sciences Sociales (2018), and holds a doctorate from ENSA Paris-Malaquais—Université Paris Est (2023). Set out as nine short stories that follow a series of projects-in-the-making in Spain, Switzerland and Britain, her thesis explores what the choice of stone in structure is doing to contemporary architecture. More broadly, her research associates an interest in material culture and its environmental repercussions with ethnographic methods and photography.

Before joining Caruso St John Architects in Zurich, where she focuses on the reuse and transformation of existing buildings, Natália collaborated with architectural practices in London and Paris. In 2018, she notably co-produced the exhibition *Pierre* at the Pavillion de l'Arsenal in Paris with Barrault Pressacco. Her independent work has been presented at the Het Nieuwe Instituut in Rotterdam and most recently at the Biennale svizzera del territorio in Lugano. She is a regular contributor to scientific and professional architecture journals and served as a jury member for the 10+1 Prix d'Architectures in France from 2022 to 2024. The book *Building in Stone Today*, based on her doctoral research, will be published with Birkhäuser Verlag in early 2026.

Whaling in Inuit Nunangat
The Architectural Legacy of 19th-Century in Arctic Canada

Samuel Dubois
Massachusetts Institute of Technology

Inuit Nunangat (meaning "the land, water, and ice of the [Inuit] people") is the Indigenous name for the Arctic homelands of the Inuit people in what is now known as Canada. Since the turn of the 19th century, this vast region—comprising 35% of the country's landmass and 50% of its coastline—has undergone profound architectural transformations that disrupted the building practices of its traditionally nomadic Indigenous population. These changes were driven by an unprecedented influx of Western materials, ideas, and people from overseas, primarily drawn to the Arctic Ocean to exploit animal-based resources such as whale baleen, walrus ivory, and narwhal tusks.

European and American whalers, who were key agents in this expanding water-based global economy, began wintering along the edges of the Arctic Archipelago as early as the 1850s. Over the following decades, they collectively established an informal network of Western-style whaling stations and wooden infrastructure across Inuit Nunangat, often built with Inuit labour. Alongside whaling ships—moored offshore or trapped in oceanic ice depending on the season—these land-based structures facilitated trade between Inuit communities and whaling companies, while also forming "architectural contact zones" where Western and Inuit architectural cultures intersected for the first time. Though architecturally modest, these sites of encounter and exchange profoundly reshaped the built environment of the Arctic, including structures designed and constructed by Inuit themselves.

Yet, despite its significant material and cultural impact, the architectural legacy of 19th-century whaling in Inuit Nunangat remains largely overlooked in architectural history scholarship. This paper seeks to fill this gap, arguing that naval architecture and land-based whaling stations served as the first Western architectural spaces experienced by many Inuit communities—who historically built their homes using locally available materials. While Western reliance on Inuit expertise for hunting and winter survival is well documented, the architectural implications of their interactions require more scholarly attention. Using a decolonial, place-based approach, this study draws on whaling logs, photographic records, and testimonies found in Inuit oral history projects to reveal how the built environment associated with whaling shaped the early contours of imperialism and colonization in North America's northernmost region. Beyond naval architecture, the paper also looks at the material and labour history of whaling stations in Inuit Nunangat, while challenging persistent myths that portray Inuit architectural history as being literally and figuratively "frozen in time."

Samuel Dubois is an architect, trained geographer, and academic researcher with several years of experience in award-winning architectural firms in the Netherlands, Switzerland, and Canada. He is currently pursuing a PhD in the History, Theory and Criticism of Architecture program at the Massachusetts Institute of Technology, under the supervision of Professor Mark Jarzombek. Samuel's research interests broadly encompass the relationship between architecture, land and cultural identities in the 19th and 20th centuries, with a focus on historically marginalized communities in Canada.

His work has been featured in various publications in French and English, including the *Journal of the Society for the Study of Canada*, *Pidgin* (Princeton University School of Architecture's journal), *Imprint*, and *Argus*, and his latest research is slated to appear in the peer-reviewed journal *Divergence in Architectural Research* as well as in an edited volume titled *Utopia and Hubris: Classicism in Canada, 1900-1950* (McGill-Queen's University Press). Moreover, he is the co-editor of *Thresholds 52: Disappearance* (MIT Press), an award-winning peer-reviewed journal on architecture and art. Throughout his studies, Samuel has received the generous support of the MIT Presidential Fellowship, the Canadian Centre for Architecture, and the Social Sciences and Humanities Research Council of Canada (for both his Master's and doctoral studies).

Architectural Commons in Fishing Villages
Socio-Spatial Practices in Sarawak, Malaysia

Azmah Arzmi
Universiti Malaysia Sarawak

This paper explores the socio-spatial practices that have shaped the built environment of Sarawak's fishing villages. Located along the coastlines of Sarawak's rivers and sea, these villages are a testament to how communities have adapted and developed resilience to the challenges of climate change, urbanisation and demographic shifts. With an emphasis on a methodological approach centred on decoloniality, there is a need to study the cultural and social practices of the villages and how they are materialised in the built environment.

Thus, this paper has chosen to focus on the fishing villages of Bako, Buntal, Telaga Air, and Goebilt, located in different geographical locations and water bodies in the city of Kuching, to explore how indigenous local knowledge shapes cultural landscapes and the built environment in a sustainable manner, without disrupting the environment and ecology of marine life. Employing a process-typological approach, empirical methods such as interviews and observations, this paper builds upon the concept of the architectural commons. The focus is not only on the shared natural resources and infrastructures, but also on the cultural behaviours and social practices that led to these contextually specific building forms and spaces.

From traditional fishing structures built in the waters, jetties, boardwalks and markets, these vernacular landscapes are emblematic of the symbiotic relationship between people and the marine environment. By analysing these villages, this paper aims to raise awareness of how these villages use their architectural commons and natural resources in ways that do not destroy the ecology, which also provides valuable lessons for urban design and architectural elements in other coastal contexts, particularly in the tropics. In addition, it promotes a better understanding of how these communities use water bodies as commons, contributing to the constant circulation of food, labour and resources that also play a role in their dialectical relationship with the city.

Azmah Arzmi is a lecturer at the Architecture Department, Faculty of Built Environment at the University Malaysia Sarawak in Malaysia. She holds a Bachelor's and Master's in Architecture from the University of Kent in Canterbury. After completing her architectural studies, she worked for architecture firms in Malaysia and Germany. She earned her double PhD in European Planning History from the Bauhaus-Universität Weimar in Germany and University of Pavol Jozef Šafárik in Slovakia, under the auspices of the Horizon 2020 urbanHIST European Joint Doctorate program. Her research interests include architectural history and comparative planning history.

Building with the Sea
Wolf Hilbertz's Vision in Marine Architecture and Ecological Regeneration

Teresa Serrano Aviles
University of East London

Imagine a world where buildings don't just sit on land but emerge and evolve directly from the sea, like coral reefs growing from the ocean floor. This was the visionary idea of Wolf Hilbertz, an architect and inventor who saw the ocean as a canvas for architectural innovation. Hilbertz pioneered a process called "mineral accretion," where an electric current, passed through seawater, causes minerals to deposit on metal structures, forming a rock-like material that strengthens over time.

His most ambitious project, "Autopia Ampere," envisioned self-sustaining island habitats growing and adapting within the ocean. While this concept remained unbuilt, the mineral accretion technology it inspired is now a key tool for coral reef regeneration, creating structures that corals can colonize and thrive upon. However, the architectural potential of Hilbertz's vision has been under-explored.

This study revisits Hilbertz's work, analysing its relevance in addressing contemporary ecological challenges. Through archival research and interviews with Tom Goreau, his closest collaborator during the last 20 years of his life, it explores how his techniques could contribute to marine urbanisation, resilient coastal infrastructure, and regenerative architectural design. By reinterpreting his vision, the research underscores the potential for architecture to not only coexist with natural systems but also actively support them. In a time of ecological crisis, Hilbertz's ideas prompt urgent questions: What if buildings could heal the planet? What if they could grow, adapt, and support ecosystems? This study seeks to position Hilbertz's mineral accretion technology as a prototype for regenerative design in marine and coastal environments, blending technology with the natural world to create a more sustainable future.

Teresa Serrano is an architect with over 15 years' experience in architectural projects and urban design. She is currently a senior lecturer in sustainability and environmental design at the University of East London (UEL), where her research focuses on climate change adaptation in architecture and the retrofit of existing urban environments. Previously, Teresa was a research fellow in the Master's in Collective Housing programme at the Polytechnic University of Madrid. She also serves as a link tutor for the Centre for Alternative Technologies in Wales and has been a visiting lecturer at universities such as Kingston, London Metropolitan, and Central Saint Martins. Teresa is coordinator of the education group for the UK-based Architects Climate Action Network (ACAN), organising events and workshops centred on climate action in the built environment.

Liquid Histories of Risk
Ecologies of Continental Shelf, Trawlers and Fishermen Towns in the Bengal Delta

Pritam Dey
University of California, Los Angeles

How can we write active geological processes into architecture history? What critical stakes emerge for architecture vis-à-vis infrastructure history when the long history of geological agency gets wired with the contingencies of political technologies? Between 1968 and 1971, UN-FAO conducted oceanic surveys to assess the "fishing potential yield of shelf waters" along the continental shelf of the Bengal delta, a 200-meter physical extension of the landmass in the seabed and subsoil of Bay of Bengal.

In 1980, based on the reports the "Bay of Bengal Program" was officially launched funded by cold war American aid to replace traditional fishing practices and extend offshore fisheries along the submerged shelf with motorized trawlers. FAO argued that extending fishing rights into the subaqueous terrain beyond the coastline would transform the littoral frontier as an axis of "blue economy." Under this program "fisherman towns" were established, drawing dispersed, traditional fishermen into an industrial labour force and resettling them within waterlocked polders—circular embankments constructed in the 1960s by the Pakistani regime with Dutch expertise. An assemblage of motor-fitted traditional boats, diesel trawlers and *behundi, funda*—the local nylon fishing nets—combined with the "landing centres," workshops, trawler yards, cold storage facilities, and fish pre-processing plants inscribed the southern edge of the delta with fishing infrastructure.

My paper argues that by resettling a vast population of fishermen along the poldered edge of the delta, the "Bay of Bengal Program" embedded a feedback loop of risk within their material and social ecologies.

The depletion of fish stocks driven by export economy and a contested claim of access to the continental shelf pushed fishermen toward shrimp aquaculture, capitalizing on the brackish conditions of the delta. By dismantling the polder's water-locking mechanisms, fishermen deliberately breached sluice gates to allow brackish water intrusion, transforming vast tracts of southern delta into shrimp *ghers* (tanks) a process that reconfigured the agrarian landscape into an aquaculture frontier.

Pesticide-laden runoff from shrimp ghers, intersecting with the geological processes of alluvion and sedimentation, fuelled plankton blooms along the continental shelf. This destabilized marine oxygen cycles creating pockets of hypoxic dead fish zones. Positioned at the strategic periphery of Cold War geopolitics, The "Bay of Bengal Project" became less a tool of post-colonial modernization than a frame for locking the fishermen into an unsustainable dependence on the extractive shrimp industry, perpetuating cycles of uncertainty and poverty.

Pritam Dey is a PhD candidate in History of Architecture at the University of California, Los Angeles. His research interests lie at the intersection of biological science, systems theory, and developmental discourses of mid-20th century South Asia. His dissertation examines ways the Bangladesh delta was engineered within a broader network of Cold War geopolitics, war, and national identity causing the "crisis of ideological hegemony" to clash with the "crisis of development."

The dissertation traces the genealogy of two coalesced ecologies: the hydraulic infrastructures (dams and polders); and the HYV rice infrastructure, which was mediated by three successive post-colonial bureaucratic regimes—authoritarian-Islamism (1950-1970), secular-socialist (1971-1976), and military-Islamist resurgence (1977-1990)—tasked with shoring the bio-territorial control in the Bengal delta.

His previous research paper titled: "Monument or Data? 'Science Statistics' and UNESCO's Cybernetic Fortification of the 1970s Bengal Delta" was presented at ETH Zurich 2024. At UCLA, Pritam is a Teaching Fellow for critical history courses. He also convened the Centre for India and South Asia annual conference at UCLA 2024. He was an Urban Humanities Initiative fellow at UCLA, the Centre for India and South Asia fellow (CISA), and a recipient of the Erasmus Mundus Scholarship in 2022.

Connectors

Session chair, Nancy Couling
Bergen School of Architecture, ETH Zurich

The ocean emerges as a dynamic infrastructure of connection, linking distant geographies, ecologies, and economies. From submarine cables weaving data along Chile's Pacific coast and across the Baltic Sea to the financial speculation embedded in nitrate shipping routes, from United Fruit's remaking of the Caribbean as a plantation sea to deep-ocean technologies that stretch the boundaries of human habitation, the panel inquiries how maritime infrastructure gives rise to new spatial and geopolitical realities. The following contributions reframe connection as a deeply historical, ecological, and architectural condition that continues to shape how we live with the ocean today.

Water and Collective Memory
The Pacific Ocean in Chile, Between Catastrophe and Digital Connection

Stefania Rasile
Independent Researcher

In Chilean mythology, the figure of *Caicai Vilu* embodies the immense power and destructive force of the Pacific Ocean. Rooted in Mapuche culture, the myth narrates the epic struggle between two great serpents, *Caicai Vilu* and *Trek-Trek Vilu*, who shape the creation and destruction of the world. While *Trek-Trek Vilu* symbolizes the earth, the mountains, fertility, and the protection of the land, *Caicai Vilu* represents the sea and water, manifesting as a destructive force. According to the myth, the wrath of *Caicai Vilu*, driven by human transgressions, brings devastating floods to the land. In response, *Trek-Trek Vilu* raises the earth, forming the Andes and providing humans with refuge. This myth encapsulates the tension between creation and destruction, water and land.

Throughout Chilean history, natural disasters such as tsunamis and earthquakes have shaped the collective memory, fostering the perception of Chile as a land of catastrophes. This perception influences both cultural identity and architecture, where the material expression of human settlement becomes a site of disaster, shaping how spaces are designed, rebuilt, and remembered. Catastrophe, linked to memory, history, and oblivion, exposes the fragility of communities and reveals social contradictions and vulnerabilities.

Chile's unique geographical position, nestled between the Pacific Ocean and the Andes Mountains, has historically fostered a sense of isolation from the rest of the world. However, Chile is today one of Latin America's most digitally connected countries, with undersea cables running along the ocean floor. The arrival of the Humboldt submarine cable, linking Valparaíso to Sydney, alongside existing cables such as Google and Curie, is transforming central Chile into an important digital communications hub. While this promises socio-technical progress, it also comes with environmental and social costs, as the infrastructure strains resources and raises concerns about its long-term impact on both land and its inhabitants. Furthermore, these oceanic cables trace the routes of imperial powers, perpetuating patterns of global domination established during colonialism.

This research will critically examine the Pacific Ocean's role in Chile's collective memory, exploring the intersections of destruction and preservation, fragility and resilience, in both architectural heritage and digital infrastructure. While digital memory may seem indestructible due to its immaterial nature, it causes environmental harm and reshapes the Chilean landscape in ways that mirror the historical cycles of catastrophe and reconstruction.

Stefania Rasile obtained a Master's degree with honours in Architecture from Politecnico di Milano in 2020, after completing a double degree programme with Pontificia Universidad Catolica de Chile, where she obtained the Master's in Architecture in 2019. Her research explores the intersections between collective memory, architecture, and virtual space. Through this focus, she has authored academic papers and contributed to international conferences. As an independent researcher, she has collaborated with academic and cultural institutions in Italy, Chile, Spain, and Switzerland. In 2024, Rasile was selected as a researcher for the Biennale College ASAC programme of the Venice Biennale. In parallel, she has worked at architecture studios in Milan, Santiago de Chile, and Madrid. She currently lives and develops her professional career and research in Zurich.

Connections for Uncertain Futures
Submarine Cables and Archaeologies
of the Recent Past

Jane Ruffino
Södertörns Högskola

The seabed is a busy place: pipelines, power cables, offshore windfarms, and submarine data cables all compete for space, and, until recently, were largely "out of sight, out of mind." But increasing demands for energy and data, along with the growing concerns about security, have meant that subsea infrastructures are increasingly in the public eye, even under public scrutiny. This means it's never been more urgent to be able to talk about the critical connections between land and sea in ways that don't only follow the contours of discussions that focus on the energy industry, intelligence, and defence.

This talk presents work from a contemporary archaeology project centred on some cable systems in the Baltic Sea region. It explores the assemblages and entanglements of the cable network, then traces some cable systems in the Stockholm region. From their assembly on land, to their installation at sea, and connection back on land again, it creates a picture of a network that blurs all kinds of boundaries: terrestrial and marine, old and new, material and social, local and global, and so on.

By starting with the things themselves—as archaeologists tend to do—I also explore what archaeology can offer research into resilience, as a narrative strand that isn't focused on defence and security, on grand narratives and "just so" stories that explain how certain technologies came to be. These under-documented histories matter, not just for posterity, but in order to understand the cable systems and all the infrastructures—both human and material—they rely on. Having a clearer picture of where these things derive from can enable more intentional, future-focused discussions and decisions around continuity, reuse, and all that goes into systems and networks that can remain resilient even in an uncertain future.

Jane Ruffino is a PhD candidate in Archaeology at Södertörns Högskola, working on a project that focuses on the material, social, and historical assemblages and entanglements of some of the submarine cable systems in the Baltic Sea region.

Suspension Zone
Valorising European Soil from the Water

Ella Neumaier
EPFL Lausanne

This paper investigates the threshold between sea and soil in German fertilizer trading, challenging canonical understandings of transatlantic markets in the late 19th and early 20th centuries. Rather than relegating the Atlantic Ocean to a transitory conduit between ports, this study reframes it as a calculated zone of valorisation—a critical space that shaped the economic and spatial formation of the saltpetre market and its associated asymmetrical capital accumulation.
For European nations like Germany, securing food supplies for rapidly growing populations became a matter of national interest in the late 19th century. The discovery of nitrate deposits in Chile's Atacama Desert catalysed European-led industrial extraction of the mineral fertilizer Chilean saltpetre, involving thousands of exploited workers under a harsh sun. These operations transformed desert dust into a commodity of unprecedented significance for Europe, fuelling the metabolic transformation of soils into fertile agricultural land. This process, however, hinged on a singular transatlantic crossing—one in which the ocean itself functioned as a space of economic speculation.
Fluctuating prices and extended transit times rendered the saltpetre trade a high-risk venture. Vessels departing Chilean ports carried nitrate without a determined value, its price calculable only when nearing Europe's markets. In this sense, the ocean became a site of suspension, ultimately transforming the value carried across it based on its proximity to the Global North. Upon reaching the English Channel, merchants assessed market conditions, often withholding the "white gold" from entry to maximize profits. German traders, for example, strategically delayed port selection—choosing Hamburg, Antwerp, or London based on last-minute calculations—turning the ocean into a dynamic global trading floor.

By framing the ocean as an active infrastructure rather than a passive void, this paper redefines its role in the nitrate trade as central to modernity's asymmetrical ecological and economic systems. Drawing on archival materials, it uncovers how capitalizing on the ocean's "neutrality" underpinned the economic configuration of European-owned saltpetre works in Chile and European port cities, while perpetuating capitalist control through a meticulously designed valorisation system. The ocean's suspension economy not only influenced nitrate's market value and the distribution of agricultural resources across Europe but also shaped urbanization patterns, industrial growth, labour exploitation, and ecological implications on both sides of the Atlantic. This study positions the ocean as a lens, probing it as a site of economic speculation and an active participant in global environmental histories..

Ella Neumaier is a doctoral candidate at the Laboratory of the History and Theories of Architecture, Media, and Technology (HITAM) at the École Polytechnique Fédérale de Lausanne. Her research focuses on the architectural history of nitrates and the modern construction of soil, specifically the entangled development of soil science and its associated ideologies with a global network of built artifacts for nitrogen production in the late 19th and early 20th centuries. Drawing lessons from the German context, her current focal point lies between the saltpetre extraction of the Chilean Atacama Desert and Germany's synthetic ammonia industry. Ella studied architecture at TU Munich and AAA Aarhus School of Architecture. She holds a Master's in Architecture—Cultural Heritage, History, and Criticism from TU Munich and is an editorial advisor to Berlin-based publishing house ArchiTangle. Before joining HITAM, she was an editorial assistant and curator to exhibition projects at the Architekturmuseum der TUM in der Pinakothek der Moderne.

Inbetweeners
Contrasting Designs for Habitation in the Deep Ocean to Discover the Limits of Human Architectures

T. Craig Sinclair
Syracuse University

Recent designs for Mars and Moon colonies by practices like Foster + Partners, SOM, and BIG are symptomatic of an emerging urge to find new habitats to settle beyond our own climate-changing world. While outer space receives the most attention, there is an equally foreign world within our world that is rapidly becoming urbanized—the deep ocean (depths below 1000m).

This paper critiques human habitation of inhuman spaces from an architectural perspective by contrasting two design interventions into the deep ocean: the remotely operated vehicles (ROVs) and landers designed by the world-leading ocean scientific community at the Norwegian University of Science and Technology (NTNU) and the OceanGate Titan submersible.

Through a research methodology of laboratory visits, interviews, and fieldwork observation within NTNU, I studied the design and spatial approach of their devices and then, to contrast the design intent of the Titan against those of scientists and engineers at NTNU, I analysed the reporting of several journalists who covered OceanGate. NTNU's crafts use finely engineered materials and construction strategies to operate within the high pressure, groundlessness, and absence of air in the deep ocean. The production and design of the Titan, conversely, prioritized human spatial accommodations over the spatial qualities of the deep ocean, tragically leading to its implosion during a 2023 tour of the *RMS Titanic*. Ultimately, where the researchers of NTNU design their apparatuses for robotic and electronic equipment survival in the deep ocean, Stockton Rush and his company OceanGate designed the Titan for human comfort.

From this comparison, I find that the design of ROVs and landers are better oriented to the spatial ecology of the deep ocean because technological other-than-human entities require less world-constructing infrastructure to survive in the deep ocean than humans. Drawing on philosopher Peter Sloterdijk's concept of "absolute islands," I further argue that, if space is integral to being, humans are bound to the thin sectional sliver of spatial world from which we evolved. New frontiers for human exploration, whether deep in the ocean or on other planets, must understand that not all space is for our species and that outer and inner worlds are better suited as the home for other-than-human entities.

T. Craig Sinclair is a New York-based architectural researcher and faculty at Syracuse University. His work studies sensory ecologies, fluid atmospheres, and their impact on the built environment, operating at the intersection of critical ecologies, science and technology studies, and architecture. His latest research project was on the relationship between remote sensing and the spatial affordances of the deep ocean, funded by a Fulbright in Norway.

His personal and collaborative design works have participated in exhibitions across the globe, with institutions like the Istanbul Biennale, HAU, Tactical Tech, and Mediamatic. His writings have been published in MIT's *Thresholds* journal, *CLOG*, and *ARCADE*, among others. He previously worked as a designer and researcher with artist Olafur Eliasson in Berlin, an architectural designer at Ennead Architects in New York, and an arts planner with 4Culture in Seattle. He holds a Master's in Architecture from Pratt Institute, and earned a Bachelor's in Philosophy with thesis honours at Linfield College.

Fishing Architecture

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