



## ABSTRACTS

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**Wednesday June 20 - Representations, Narratives and Projections**

**Milica Topalovic** - Ass. Prof. Architecture of Territory, ETH Zurich (CH)

**Dirk Sijmons** - H+N+S Landscape Architects (NL)

**Medine Altiok** - HCU Hamburg & RWTH Aachen (DE)

### **Mittelmeerland**

The Mediterranean Sea is not only situated between continents, but simultaneously acts as a historical and contemporary centre and border zone. Mittelmeerland is a research project that explores the potential of this area as one territory of water through six distinct Mediterranean

metropolises: Dubrovnik, Tangier, Beirut, Algiers, Alexandria and Izmir.

How can the Mediterranean territory mapped as one unity and planned as such? The project studies the dynamics of the cities' coastlines, the mutual dependencies of land and water, the construction of new ports, which are often in conflict with sensitive sea ground and the transformation of society.

The project envisions removing cities at the coastline from their national context and shifting them into the liquid body of the Mediterranean. Port Cities could position themselves as entities and manage the sea without borders. The liquid Territory could become a Network of cities. The

environment, trading and politics is considered as uniting aspects.

Culture is a strong character to emphasize individuality as well as common ground. The Liquid body allows thinking of different concepts of States and Nationalities. There is opportunity to maximize

environmental efficiency by passive strategies and as well the exchange of research and technology. The wetlands are transforming and different processes of urbanization take place simultaneously. The sensitive Mediterranean landscape is neither urbanized nor extensively explored yet. The Constitution makes sense within the same Climatic Context.

Narrative Mapping is one method of research. The perspective- the birds-eye from the sea towards the land- was used in former times as a tool for orientation during strategic wars. This was pacified and simply used for narrative mapping. Narrative mapping contains many layers of information, many scales and many stories in one single drawing. It allows cross – and multiple readings. They represent the relations, the small things in-between- it is scientific and narrative at once

**Susan Dunne & François Bruneau** - Paris-Malaquais Architectural School (FR)

### **Mega ports and Globalism, on land and off shore: Conceptual Interactive Explorations.**

The paper aims to illustrate how explorative and conceptual workshops, in the framework of architectural teaching, can serve to inform and question the stakes at play in major infrastructure projects and in particular in maritime infrastructure territorialisation.

The particular workshop discussed in this paper is the Architectural Master's studio "Changing Cities" from ENSA Paris-Malaquais. During two semesters the students carried out comparative research on the ports of Rotterdam, Hong Kong and Singapore and their related maritime routes . Following a period of immersion in the port of Rotterdam, a number of emblematic situations were chosen for greater scrutiny. These areas or situations were re-imagined following dystopic, utopic or provocative narratives, under such headings as: "Inhabiting Industrial landscapes", "Off shore Citizen's radio", "Nature versus Industry", "Upside down Oil landscapes", "Abstract lands and Concrete futures".

The public exhibition which was the final outcome of the workshop was set up to inform and stimulate a debate on maritime infrastructures, their stakes and consequences, on land and off shore. The paper reviews a number of the student's narratives or exhibits, questioning the intentions and the effectiveness of the multi-disciplinary and multimedia tools used.

The paper also highlights how the exhibition format (mixing analytical and conceptual interactive installations) when built into the studio structure from the outset, can free up the architectural discourse from the onus of seeking formal solutions, and facilitate tackling creatively such complex and large shifting territories as the sea.

Finally the paper discusses on a more general level how spatial or transport networks are intrinsically related to digital networks and how, as a result, spatial networks have become more and more decontextualized.

**Jonathan Ledgard** – Writer

### **Everything has its depth**

A discussion on the deep ocean in contrast to the North Sea. Ledgard's work on the novel *Submergence*, which concerns a biomathematician who studies marine microbial life, led him to continue work on oceans. Ledgard believed that Eliasson's understanding of light, orientation in space, and ephemerality were suited for the deep ocean and he reached out to his friend to work together on an ambitious artwork which they will show together in 2020.

**Taneha Kuzniecowa Bacchin & Hamed Khosravi** – Research Coordinator, Delta Urbanism TU Delft (NL)

### **North Sea: Landscapes of Coexistence**

The Sea has been always home to nomadic forces, from humans and animals to flows of goods, capital and information; a multi-layered ecosystem of interactions and adaptations; a source of food, energy, life, and power – and thus a contested space. Like most ecosystems, North Sea contains many processes that escape direct observation. Although the seamless sea and its boundless territory deceive us as infinite spaces, they are submitted to multiple laws, as well as social, political, and economic protocols, along with the intrinsic laws of nature that rule them all.

Historically, North Sea has been a contested territory; while bordering the mainland Europe it has been often turned into a platform for geopolitical affairs with the UK as well as the Nordic countries. Such strategic role has manifested itself in various military, religious, economic, and social ties and divides, which has consequently made the North Sea a conflictual common ground. The ongoing refugee crises or the Brexit are only very recent examples of such a long history. *North Sea: Landscapes of Coexistence* would narrate some of these controversial aspects through the lens of a pedagogical project, wherein the method of research-by-design is employed to envision possible futures for the North Sea territory. Within this framework the sea is seen no longer as a periphery of Europe but rather, a central territory and a point of departure through which the idea of Europe would be defined, if not, challenged; an autonomous entity through which the political, environmental, economic and societal questions could be addressed. In this way any spatial proposition, whether landscape, urban or architectural, are challenged and revisited through the lens of the North Sea as a referenced territory for new spatial interventions, addressing the complex, yet not so visible, spatial, juridical, environmental and geopolitical natures of the North Sea for the future scenarios that are informed by climate adaptation and clean energy futures. Such scenarios dwell on micro- and macro-politics of such transitional spaces, exploring the ways in which any form of co-habitation is conditioning or conditioned by the interaction between human and nonhuman environments.

**Bram Vannieuwenhuize** – Historical Cartography, University of Amsterdam (NL)

### **The Conception of Port Infrastructure and Commercial Space in Sixteenth-Century City Maps**

Between the late thirteenth and late fifteenth centuries, the Flemish city of Bruges acted as the main commercial hub of North-Western Europe. In the course of the fifteenth century, however, Bruges lost much of its allure as a commercial metropolis. The local authorities did everything they could to improve the attractiveness of their city and lure merchants back. One of the most important problems they had to battle was the navigability of the waterways in and around Bruges. With the support of the prince, structural investments were made to improve the navigability of the city's connection to the sea and port infrastructure. Simultaneously, the urban authorities started to propagate a 'commercial ideology' in which the city's port infrastructure, its internal hydrography and external connections to the sea featured prominently.

In an earlier paper, we have argued that the sixteenth-century maps of the city and its immediate surroundings were informed by the same commercial ideology. Despite, or exactly because of, the city's decreasing maritime accessibility, mapmakers and engineers conceived Bruges as a place that could easily be reached by trading ships and where merchants could trade in the best possible circumstances. For Bruges, maritime accessibility and port infrastructure were the crux of what Geneviève Fournier-Antonini has called a city's 'graphic identity', an image emblematic of a particular place, which was not so much the result of stylistic or technical choices or the site's topography, but of its local political, economic and social context. In this paper, we want to compare the Bruges case with other late medieval and early modern port cities around the North Sea in order to understand to what extent port infrastructure and maritime accessibility were emphasized in city maps and were an inherent part of local '(carto)graphic identity'.

**Jacqueline Heerema & Lotte Bosman** – Artists collective Satellietgroep (NL)

### **Who is nature?**

The sea belongs to everyone and thus to no one - words that not only define the world's largest public space but also leave it unarticulated.

The Dutch have a long and deep relationship with the sea and tend to design, construct, reconstruct and deconstruct coastal landscapes to fit them to the needs. Masters in disguising a cultivated space as a natural one. But instead of being proud, the Dutch value the ideals of nature as something other than people or culture.

This essay argues that we need to critically investigate our perceptions of culture and nature. With global challenges of climate change we need to acknowledge the sea and coastal landscapes as cultural landscapes, as prime examples of mankind creating new conditions.

As nature is a force that responds to human actions, artists collective Satellietgroep (The Hague NL, 2006) poses the question 'Who is nature?'.

In his farewell lecture as Professor of Landscape Architecture at TU Delft, Dirk Sijmons wondered: "Perhaps not the city but the climate is our biggest artifact". Satellietgroep takes this statement a step further and states that climate is the largest artifact: an artificial man-made phenomenon.

We challenge artists, engineers, scientists and audiences to re-conceptualize our environment as a timely artifact and believe that it is essential to explore new visual narratives around our perception of sea and land from a cultural perspective.

Climate challenges are now strongly situated in domains of engineering and technology and still too little in social and humanities science. New collaborations can transform a destination normally marked by consumption and recreation into a platform for critical communication and serious reflection. This timely reflection on spatial transition processes may act as a strong catalyst in generating public and professional discussions and connect contemporary research and new narratives to historic and future narratives of the sea and coastal transitions. We aim at perspectives without judgment or preconceived views, curious about the opportunities that climate change can offer.

**Enrico Tommarchi** – Culture, Place and Policy Institute (CPPI), University of Hull (UK)

### **Port cities and cultural mega-events. Culture-led urban regeneration and port-city relationships across the North Sea**

Whether with goals of physical or social regeneration, repositioning, or diversifying the local economy, European port cities appear increasingly interested in the regenerative potential of culture and cultural mega events. While this phenomenon has been addressed, in particular in Northern port cities on the Atlantic and the North Sea, as a response to port migration and deindustrialisation, the mutual interconnection between this festivalisation and the maritime dimension of Northern port cities has seldom been explored as a component of the recent evolution in port-city relationships.

This study approaches the spatial, political and socio-cultural relationships between ports and cities on the North Sea from the perspective of cultural mega events, with the aim of exploring how such urban cultural policies impact on port-city relationships. How port development – as a process of urbanisation – and culture-led urban regeneration influence each other in shaping the port-city interface? How different – and potentially competing – imaginaries of ‘port’ and ‘cultural’ cities impact on the political relationships between ports and cities? How narratives of their maritime dimension frame – and are framed by – their accounts as cultural cities?

The UK City of Culture in Hull and the event policy in Rotterdam are analysed as pivotal features in the two cities’ trajectories between ocean urbanisation driven by port development and culture-led regeneration of waterfront areas and of the city as a whole. An understanding of cities as assemblages and the use of generative comparative tactics help to analyse a cross-cut section of the complexity of port-city relationships, in order to emphasise their mutual connections with urban cultural policies.

Different trajectories of port development, together with diverse experiences of mega event policies and waterfront redevelopment underline how cultural mega events play an indirect – yet considerable – role in the construction of the imaginaries of contemporary port cities on the North Sea.

**Rania Ghosn** - Ass. Prof. Architecture & Urbanism, MIT (USA)

### **An Aquarium for the Anthropocene**

In the opening chapter of *Ocean Gardens*, Among the many early handbooks on aquarium care, the British artist and naturalist Noel Humphreys admonishes his reader: “To appreciate Nature, the mind requires a special education, without which the eye and the ear perceive but little of the miracles passing before them.” He adds, “the wonders of the ocean floor do not reveal themselves to vulgar eyes.” The aquarium was born out of such desire to represent to the senses—or make sense of—the inaccessible, expansive, and mysterious deep sea. As the locus of an unprecedented form of knowledge-production, the aquarium made visible scientific, socio-economic, technological, and political forces, entailing new modes and aesthetics for the production of evidence.

What is the affective agency of a cabinet of natural history in a post-natural ocean and within this world of uncertainties? Today, Humphreys’ call to develop our “vulgar eyes” is pertinent as we make sense of the ocean at a moment in which humans themselves operate as “geographic leviathans.” Several barriers impede the ability of the broad public to think and feel the impacts of deep-sea mining and climate change on the ocean. Within such a complex web of environmental relationships between facts, uncertainties, emotions, and actions, the aquarium brings remote scales, uncertain futures, or intangible scientific concepts—such as climate change—to the personal realm.

The “Pacific Aquarium” project by DESIGN EARTH appropriates the object of the aquarium to take aim at the scalar distance between humans’ selfish economic concerns and the great scales of the Earth. The site is the Clarion-Clipperton Zone (CCZ) in the Pacific Ocean, with the world’s largest deposits of deep-seabed rare earth minerals. Since 2001, exploration licenses have been granted for minerals on the CCZ deep seabed. The purpose of this speculative project is not to predict the future, let alone to fix it, but to raise questions on present relations between humans and the Earth and reckon with the uncertainties of environmental and technological futures in the Ocean.

## Thursday June 21 - Infrastructure & Heritage

**Lennert Goemans** - Ministry of Economic Affairs & Climate Policy (NL)

**Serge van Gessel**, TNO (NL)

**Jan Matthijsen**, PBL (NL)

### ***Past, Present and Future Perspectives on North Sea Developments***

The Dutch ministry, TNO & PBL explore development perspectives, in particular relating to energy, on the Dutch continental shelf of the North Sea. The presentation also gives a historical overview of the depths of this space over geological time. We explore the possibilities in a technical, environmental, spatial and financial way. As well for electric alternatives (connecting to high-voltage grid substations) as for non-electric alternatives (like hydrogen). Preferably the offshore grid is connected to the onshore grid near industrial clusters.

**Nancy Couling** – Marie Curie Fellow, TU Delft (NL)

### ***Landing: extensions, cultivation and disjunction across the North Sea.***

The North Sea has a long tradition of facilitating interactions, building distinct forms of legislation and releasing valuable resources. Historically, this was an open, mobile realm of dynamic exchange and multiple, shifting relations. Today webs of infrastructure and logistics weave between temporary fixities and traverse valuable habitats. Routes are solidifying and spatial claims are multiplying. The sea is thick with activity which is also set to increase with EU Blue Growth incentives– it is becoming a viscous space.

*Landing* is the act of bringing something to land either from the air or from water. Taking the sea space as the origin, this paper discusses *landing* within the processes of extended urbanisation unfolding in the North Sea (Brenner & Schmid). The sea is treated as a coherent, fluid system and considered a historic cultural & ecological unit. Urbanisation processes interact with the sea's geo-physical properties in specific ways at distinct locations. Three of these locations are investigated as case studies; the fjord (NO), the estuary (UK) and the Wadden Sea (DE).

From offshore sites of resource harvesting, urban extensions facilitate transport & delivery back to land, hence extended urbanisation is a reciprocal process operating across the land-sea threshold and mobilising people, vessels, materials and legal frameworks. This process determines and reorganises vast tracts of sea space and dedicated coastal sites, yet has until recently, largely avoided urban or architectural scrutiny.

Research on the Oceanurb project has revealed that urban extensions in the North Sea form specialised and mutating trajectories according to changing conditions and resource depletion. The case of hydrocarbon extraction on the Norwegian continental shelf demonstrates how some of these extensions redirect traditional maritime sectors and therefore develop strong cultural dimensions.

However, forms of extended urbanisation in sea space are highly demanding; the economic environment is fiercely competitive and requires specialised technology and facilities, the physical environment exerts multiple forces on materials and construction systems and the human environment is characterised by extreme spatial and temporal compression. The result is frequent social, ecological and spatial disjunction.

**Anne-Mette Jørgensen** – Director & Co-founder North Sea Futures (DK)

### **The Energy Transition and the North Sea as a Self-healing Wilderness**

Over the next few decades, the energy transition implies the decommissioning of over 600 oil and gas installations and the construction and decommissioning of up to 25,000 offshore wind turbines in the North Sea alone. This process, while providing great business opportunities for offshore and renewable energy companies, will have a major impact on public spending, marine ecosystems, and other users of the sea. In handling landscape changes onshore, green NGOs, policy-makers, and the general public have learned to value and protect man-made landscapes, but offshore, the myth of a self-healing wilderness still seems to dominate. Indeed, current offshore regulations are based on the principle of a clean seabed, where economic activities are restricted to specific areas within specific time frames. After the permitted amount of time, all man-made elements have to be removed and the seabed (nature) 'returned to its original state'. However, research and learnings from various regions of the world have shown that offshore energy installations can develop into highly biodiverse, productive reefs over their lifetime. Over time they come to form an integral part of the marine ecosystem and cumulatively, their presence may lead to a fundamental change of that ecosystem. By the time the installations are no longer needed for economic purposes, the ecosystem may have changed to such an extent that it is highly uncertain what will happen if these installations are removed. In the North Sea, the perspective of first constructing thousands of wind turbines and then removing them every 20 years is that of a double, negative effect. Instead, learning from onshore landscape management, policy-makers and industry might achieve a double positive effect: using the energy transition to support nature restoration in the North Sea while also reducing costs.

**Dirk Schubert** – HafenCity University Hamburg (DE)

### **The Elbe Delta and the Port of Hamburg – Old Problems and Perspectives for a more sustainable future**

Since the medieval ages, Hamburg always had a fundamental interest in the condition of the river Elbe and the surrounding areas, located in Prussia until 1937 and later in two different German states. This interest was focused on the condition of the river, the depths of the river, but also on smaller regional port cities along the river Elbe. So Hamburg developed for example a special interest in a cityport at the mouth of the river, for Cuxhaven. While the argument from Hamburg (especially from the Hamburg Port Authority) was, that trade for Hamburg and the port of Hamburg were dominant for the economic growth region of the region, ecological problems of the banks, flood protection and ecological topics were not that relevant.

So Hamburg – as the most important actor in the region - developed strategical spatial and economical perspectives for the lower Elbe region. This growth perspective was created in period of deindustrialisation and unemployment in the region (shipbuilding industries) and included after 1960 infrastructure, nuclear power stations, cheap electricity and provision of industrial land in Hamburg, as well as in the region, for new companies.

This contribution will focus on a short historical analysis until 1945 (or more precisely 1937 the Greater Hamburg Law) and discuss in detail the development strategy for the region developed in the 1960s. The failure of this growth strategy based on new industries will be discussed and is interconnected with the dredging of river and the importance of the Port of Hamburg. Especially the fight for further dredging – important to accommodate the largest container vessels to remain a container hub – is related to ecological problems of the region.

**Martijn Manders** - Maritime Programme Cultural Heritage Agency (NL)

### **Connecting cities in maritime landscapes; looking outward into the world**

The Netherlands are often considered to be a maritime country. Quite rightly so. Major cities are situated next to the sea or at major river crossroads, the maritime trade since long has been enormously important for the national economy and our fishing community is (in)famous all over Europe and beyond.

Living next to the water can be a blessing but also a curse. Both have shaped the landscape. Seas and rivers have swallowed villages. Locations, outlines, demography and professions of cities, have all been influenced by it. Archaeological research can tell us much about the old maritime connection. The objective resource of things that have not been written down.

The study of the maritime landscapes connects all the archaeological data we gather with, for example, historical and geological research. It forms the template in which we tell the stories about our past. The level on which we do this can be local, national and international. The scale defines the details but also the overview we wish to create. This paper will focus on role this maritime landscape template and what role it can play in reconstructing the past and also in protection and management of the cultural heritage. It will place the maritime past and the role of cognitive landscapes in the centre of understanding our history and the development of the country as a whole.

**Everhard Korthals-Altes** – TU Delft (NL)

### **Cities of the North Sea: Antwerp, Amsterdam, London**

During the sixteenth, seventeenth, and eighteenth centuries, Antwerp, Amsterdam, and London became the leading trade centres in Northern Europe because of their position along rivers and their proximity to the North Sea.

Community pride and urban identity culminated in streets, squares, and monumental buildings. They acted as a dynamic billboard for citizens and visitors alike: they represented what the city (or powerful factions within the citizenry) aimed to represent. These representative qualities were greatly enhanced by the use of the visual arts, which depicted the city's most important public spaces and representative buildings. Similar illustrations often embellished maps of the city. The visual arts condensed the representative qualities of the cityscape, as well as providing it with a public not necessarily living within the city – as was obviously the case with artistic work which could be reproduced, such as prints.

The collection of prints and rare books of Delft Technical University offers the opportunity to visually compare the three leading trade centres around the North Sea in the early modern period. Do the illustrations show places with similar characteristics, or do they rather stress the particular identities of the cities?

**Eva Papaioannou & Vincent Onyango** – University of Dundee

**'Any port in a storm' or 'first port of call'? – The multi-use of ports and offshore renewable energy for a sustainable North Sea.**

Huge demand exists for onshore space from the energy sector during construction, operation and maintenance of Offshore Wind (OW) Farms. Ports usually serve as the operation and maintenance base of OW farms. However, with ever increasing energy demands, coupled with a stringent legislative context for shipping and maritime transport, especially relating to CO2 emissions reductions, Marine Renewable Energy (MRE) could be used to cover part of the energy demands of ports (e.g. shore-side electricity).

The study aims to investigate the potential for multi-use (MU) of ports with OW farms, namely the co-location of the two activities in space and time. We review examples of such an MU; the policy, regulatory and institutional framework for MUs; the drivers and barriers in establishing a dynamic link between the two sectors; and engage with key stakeholders (e.g. harbor authorities, policy makers) to explore their knowledge and perspectives on the MU concept. We focus our analysis on the North Sea UK seaboard, as the framework of harbor ownership and jurisdiction enables drawing key conclusions on the topic. Key drivers include shore-side (port) space and resource availability (e.g. offshore wind); and policy and institutional drivers, relating particularly with CO2 emissions reductions targets. Barriers include the type and size of accommodated vessels; universality of standards; the ownership status of ports (private vs public). Stakeholders recognize the added value of the MU but mention the lack of adequate push-pull factors (e.g. economic incentives) for more active MUs development. The absence of scaled-up demonstration of viable business cases is a main drawback.

Results from the analysis can aid the development of relevant action plans for promoting the MU of ports with OW Farms and thus contribute in achieving blue growth and MSP objectives. The study further highlights the importance of considering the perspectives and user knowledge of key stockholder categories.

**Elmira Jafari** – TU Delft (NL)

**The Onshore Impact of Offshore Operations: The Case of Aberdeen**

A long history of oil in Scotland has made the country an invaluable case study to investigate its evolving landscape and lasting spatial and non-spatial impacts; shifting from the Shale oil industry (1851-1962), to the importer of cheap oil from America and later on from the Middle East, to the oil producer and exporter (since the 1970s) has gradually involved different districts and shaped a specific landscape of oil throughout the country over time.

Discovery of shale oil in the central area of Scotland accelerated industrialization in this region. To fuel the booming industries, shale oil had to compete with cheaper oil imported from America by Standard Oil Company; the process which had a conspicuous impact on the west coastline through the emergence of enormous oil storage fields. The demise of shale oil industry in the early 1960s made the country entirely dependent on importing oil from all around the world. It did not take a long time that BP discovered oil in the North Sea in 1970; and the first oil flowed from Forties oil field to the tanker terminal of Firth of Forth in 1975. The flourishing oil industry in the North Sea coupled with the abandon of oil storages in the west coastline resulted in the expansion of oil facilities along the east coastline. Expansive off-shore oil facilities in the sea were strongly tied up to the land through a complex network of pipelines, from the nearest city of Aberdeen to farthest areas of Flotta and Sullom Voe.

The discovery of oil in the North Sea was a golden opportunity to rebuild the economy and modernize the whole country. Since then, oil is still playing a key role in changing the landscape and socio-economic life of people. By mapping the changing landscape of oil in Scotland over time, this paper aims to shed new light on key roles of oil in the regional dynamics. In this framework, the paper argues the significance of investigating reciprocity of energy and space in order to fully understand its past and therefore to conceive its sustainable future.

**Carola Hein** – TU Delft (NL)

Architectural and urban history have a unique opportunity to investigate the spatial impact of oil flows. To gain insights into the ways in which petroleum has shaped the built environment through its physical and financial flows as well as through its depiction in corporate, public and independent media in globally interconnected ways, I have proposed the concept of the *palimpsestic global petroleumscape*. The feedback loop between diverse spaces of oil, their selective representation and the ways in which these uses influence the minds of citizens in their everyday life, has links to Henri Lefebvre's theory of everyday life and his understanding of space as socially produced and then appropriated by the powerful as a tool.

This contribution will expand on the methodological approach of the petroleumscape and its implications for cross-cultural, networked and balanced research. To illustrate the concept and the feedback loops in the petroleumscape, the second part of the presentation uses the Rotterdam/Den Haag area, part of Amsterdam-Rotterdam-Antwerp (ARA) (the biggest petrochemical hub after Houston) as a case study. To better understand the ways in which the concept of the petroleumscape elucidates themes of power, class, and space relationship, the contribution finally discusses opportunities to engage the general public in visualizing the role of oil in creating our built environment through an open access webpage ([oilscapes.nl](http://oilscapes.nl)) and an interactive augmented reality tool (AR Black Gold). In conclusion, the contribution argues that only in appreciating the power and extent of oil in shaping the built environment can we engage with the complex challenges of sustainable architectural and urban design and policymaking, develop heritage concepts, and meaningfully imagine future built environments beyond oil.

## Friday June 22 - Legal & Theoretical Constructions

**Christian Schmid** - Titular Professor of Sociology, Department of Architecture, ETH Zürich & Future Cities Laboratory, Singapore

### **Territories of Extended Urbanization: Notes on a research project**

The concept of planetary urbanisation has recently become a widely debated topic. It starts from the observation that urbanisation has got a planetary reach in the last decades. The boundaries of the urban have been exploded to encompass vast territories far beyond the limits of even the largest mega-city regions. This process of extended urbanisation includes the progressive enclosure and operationalization of landscapes around the world to fuel the rapid intensification of metropolitan growth in recent decades. Meanwhile, novel patterns of urbanisation are crystallising in various environments, in agricultural areas, in the space of seeming wilderness and in the oceans, challenging inherited conceptions of the urban as a bounded zone and a dense settlement type. These observations suggest a radical rethinking of inherited cartographies of the urban, at all spatial scales. Adopting a planetary orientation means first of all decentering the focus of analysis, looking from an ex-centric position, one that looks from the periphery and asks where to find "the urban." Such an orientation enables a researcher to detect a wide variety of expressions of the urban that have traditionally been excluded from analytical consideration because they are located outside large agglomerations and metropolitan regions and their immediate hinterlands.

However, in evaluating existing instruments for the analysis of urbanisation, we are confronted with many difficulties and shortcomings. New concepts and terms are urgently required that would help us, both analytically and cartographically, to decipher the differentiated and rapidly mutating landscapes of urbanisation that are today being produced across the planet. This contribution presents first results of the research project "Territories of Extended Urbanization" (ETH Future Cities Laboratory Singapore) that explores and analyses a range of very different case studies across the globe. The core of the project is the development and application of an integrated theoretical and methodological framework that allows for the analysis of extended urbanization, and for the generation of new concepts and urban design proposals.

**Arjan van Binsbergen** – Executive Secretary of the TU Delft Transport Institute (NL)

**Hans Renes** - Professor of Heritage Studies at Vrije Universiteit Amsterdam

**'Societal developments and their impact on port-cities and the sea-land interface'**

Ongoing urbanisation, globalisation and the aims to transition towards circular economy, renewable energy, improved resilience and other social developments and urgencies have strong impacts on port-cities and the sea-land interface.

The ongoing trend of urbanisation results in ever growing freight flows, often channelled via port cities. Accommodating these flows results in claims for off-shore shipping lanes and on-shore ports, terminals, rail- and road infrastructures and all kinds of related activity places. In quite a lot of large port-cities world-wide, this need for space actually results in (re)claiming land from sea.

Transitions towards circular economy and the energy transition (incl. decarbonisation) significantly change the composition, volume and direction of global freight flows. Although port-cities will still channelling these flows, the needs for infrastructures and spatial claims change, as well as some primary hub-locations. Decarbonisation also induces a (partial) shift from the oil and gas extraction and process industry towards industries for creating and maintaining renewable energy infrastructures – again with a huge impact on space utilisation, both on-shore (ports, terminals, refineries, plants) and off-shore (from oil production platforms to wind farms).

The self-evident proximity of port-cities to seas makes them especially vulnerable for the effects for climate change. At the same time, their crucial role in global freight flows asks for a very high degree in resilience with respect to effects of climate change including rising sea levels and more extreme weather conditions. New land-use and 'sea-use' concepts might help to negotiate these challenges.

Other urgencies that put pressure on space utilisation and resources in coastal regions are the protection of life below water, the quest for sustainable food production (including producing sea vegetables and sea weed) and supplying recreational space.

These developments and challenges often result in conflicting interests, claims on available space (on-shore and off-shore) and resources. Solving these challenges asks for smart intersectoral and integrated solutions, for regional and international collaboration, and for public-private partnerships.

**Mike Elliott** – University of Hull (UK)

### **'Urbanisation' and 'Industrialisation' of the North Sea - An Integrated Approach to Marine Management**

This paper takes the audience through recent ideas and concepts on the management and governance of coastal and marine areas. Using real examples, it links the fundamental aspects of governance (thereby covering the policies, politics, legislation and administration) with the source of problems in the seas. This centres around a risk assessment and risk management approach which uses the typology of hazards and the DAPSI(W)R(M) framework whereby Drivers of basic human needs, require Activities to be undertaken which in turn cause Pressures. The latter are the mechanisms which lead to State changes on the natural system and then Impacts on human Welfare. In order to counter such adverse changes requires Responses using Measures. The measures in turn revolve around the so-called 10-tenets of sustainable and successful marine management of adverse effects of human activities in that our actions should be: Ecologically sustainable, Technologically feasible, Economically viable, Socially desirable/tolerable, Legally permissible, Administratively achievable, Politically expedient, Ethically defensible (morally correct), Culturally inclusive and Effectively communicable. Hence, the paper illustrates the main governance frameworks for the North Sea. Most importantly, the talk enables the audience to consider the only big idea in marine management – how to protect and maintain the ecological structure and functioning while at the same time ensure that the seas deliver ecosystem services from which society can acquire goods and benefits. Therefore, the presentation will hopefully be of relevance to both natural and social scientists.

**Stephen J. Ramos** – Assoc. Prof. College of Environment and Design, University of Georgia (USA)

### **North Sea Periplus: Thoughts on Strabo**

In 1999, Philip E. Steinberg observed, “If, indeed, there ever was a valid excuse for lack of geographic research in marine science, that time has certainly passed.” More recently, Steinberg updated the position by musing that perhaps part of the problem is the very nature of the sea, lending itself more to “literary essay or poem that reproduces difference even as it interrogates its foundation.” These observations echo contemporary research on ocean space and marine spatial planning, which simultaneously calls for action research for responsible stewardship of ocean resources, while also recognizing numerous theoretical and methodological differences from its traditional landside counterpart.

Geographer Strabo of Amasia served under Augustus during the Hellenistic period of the Roman Republic. Contemporary research asserts his ability to encompass broader understandings of geography within the Roman *oikoumene*, beyond the strictly cartographic or “mathematical,” and engaging more deeply into historic understandings of geography and place formation, which included philosophy and mythography. Strabo employed *periploi*, or coastal descriptions, as a model for ordering topographic and ethnographic observations, and from these derived political analysis to provide for what was to become empire maintenance. As Claude Nicolet points out, Strabo understood that “knowledge is needed for action, and no doubt understanding must precede obedience.”

In considering Strabo within the North Sea context, the paper seeks to explore issues of history, place, and myth, and how culture moves as currents and tides through them. What are the North Sea mythographies that can inform new spatial understandings, representation, and projection? If a work like *Waves of Knowing: A Seascape Epistemology* looks to Native Hawaiian knowledge of the sea to help create new theoretical categories and disciplines, what would a North Sea equivalent be? Finally, the paper will reflect on those issues of power and “obedience” that new North Sea framings call forth.

**Rob Zuidwijk** – Director: LDE Centre for Metropolis & Mainport, Leiden Delft Erasmus

### **Container Logistics and Urban Developments**

From the viewpoint of operations management, container logistics is moving from a “one size fits all” and efficiency-focused paradigm to one in which “stakeholder values” play a more dominant role. Container logistics may correspond more effectively to specific value propositions to customers and stakeholder needs and requirements. This has and will have impact on urban economy, use of urban space, and the sustainability of port operations. The presentation provides insights in the operations management perspectives and invites discussion on their multidisciplinary ramifications.

**Francesco Musco** – Assoc. Prof., Director Master Program in Planning and policies for the City, Territory and Environment, University Iuav, Venice (IT)

### **Land-Sea Interactions and planning in the Tuscany Region**

The land–sea interface is often considered as a “continuum” despite its many discontinuities. Understanding “what happens” is a challenge due to many issues especially regarding the spatial scale. Land-Sea Interactions (LSI) indeed go beyond locations where coastal defence, coastal ecology and coastal tourism/recreation insist. The logistical flow from sea to land and vice versa and the direct or indirect ecological connections further inland are important considerations to be done besides the number of designated uses, particularly shipping and fisheries, that have traditionally been connected to the land.

The Tuscany Region is usually associated to its country and inland pleasures without taking into account that it has around 250 miles of coastline and a deep maritime culture. A strong connection route between the Archipelago Toscano islands and the mainland ports is present in order to guarantee the insular needs. The area is characterised by an economy mainly based on the tertiary sector, with an important role played by the transports (logistics of goods and passengers) and the tourism sector. From a governance perspective, in the coastal area of the Region different international, national and regional relevant frameworks are present and insist. This variety of governance regimes is not easily integrated and can be conflictual with the planning framework on land. In this complicated context, an analysis of the LSI and planning framework was considered to be a useful tool to assess and address the main issues in the area. In this case study we tried to identify, localize and describe the main land-sea interactions, individuate hot spot areas and assess the planning regimes that insist in the area through a research by design approach. This exercise was useful to inform the current transformations in the spatial planning framework in the area and to harmonize the land and sea planning regimes.

Rose Sarkhosh & Amy Thomas – TU Delft (NL)

**London's petroleumscape; revealing city's unique oil-related architectural and urban characteristics.**

The contemporary global “petroleumscape”, as defined by Hein<sup>1</sup>, is the physical and representational dimension of the oil industry that is inscribed into the built environment and the social imaginary. This new analytical framework enables a novel tool for reinterpreting the urban and architectural history of places through the oil commodity network, whilst also present new ways to imagine a sustainable oil-free future for our global built environment. Using Hein's petroleum-scapes as an analytical tool, this article investigates how the political, economic, industrial and cultural dimensions of oil have impacted the historical process of architectural and urban development of London. Though Britain found oil far from its own lands (in the Middle East), the acquisition and trading of oil had both direct and indirect influences on its built environment throughout the nineteenth and twentieth century. The development of ports and docklands on the banks of the Thames, refineries, petro-chemical factories, research labs and headquarter buildings directly facilitated the logistics and financing of the oil industry. Yet simultaneously, less visible results within the city's urban fabric have emerged from the political and economic involvement of Britain as an investor, colonizer and trading partner of oil-rich countries, such as the financing of commercial, social and residential developments in London by petrodollars, and more directly by agents of the oil industry.

There is much literature on the development of London as an economic and trading centre, but until now, there has been very little investigation into the widespread and potent influence of oil on the physical and spatial transformation of the capital. This paper proposes a novel perspective on the historical development of London, focusing on the direct relationship between different architectural and urban typologies in the capital, and Britain's wider involvement in the geopolitical development of the oil industry.

Stephan Hauser – TU Delft (NL)

**Can a legal framework protect the coasts from the side effects of urban development pressure? The French North Sea Coast.**

Coast lines have long attracted industrial activities, services, housing and tourism. At select geographic locations harbours host port facilities and provide local economic growth opportunities. As such, these areas also concentrate populations around the world. In the north of France where the unemployment rate is high, port industries are still massive providers of work.

But in the last decades, the port development has become a major threat to the architectural heritage, the historical scenery and the unique biodiversity of these areas, both at sea and on land. The impact of the urban redevelopment is clearly visible since 1950. At this point, this paper arises the following question: Is it possible, in this context, to efficiently limit this urban sprawl through legal frameworks to protect land and sea, and their in-between environment, in spite of the economic interests? Or can the sustainable development guide new economic ways?

The northern coastline of France has gradually expanded since 1950. However, a fundamental act appeared between those two eras, the Shoreline Act “Loi Littoral” in 1986. This act allows us to analyse the last thirty years of the urbanisation and its binding force towards the protection of the environment. And yet, we also understand that it has a limited role. It doesn't forbid all kind of construction but just new buildings coming out of nowhere, when expansion in urbanised areas is allowed. After decades of existence, this frame has been integrated by both politicians and citizens, and its results judged. If the law is now seen as a guardian of the shore, inhabitants and environmental organisations often criticised its dimness, which favours interpretation.

This paper analyses the soft limitation that affects the ongoing space consumption since the 1950s through the aerial pictures provided by the IGN (Institut National de l'Information Géographique et Forestière), and if the rules were efficient enough in their protection.

**Claudia Bode and Lizzie Yarina** – MIT (USA)

### **The Sea is Not the Land: Alternative Representations for Marine Spatial Planning**

Marine or Maritime Spatial Planning (MSP) is the act of spatially organizing human activities on the sea in order to reduce conflicts in increasingly crowded waters, and a significant European Union policy priority. This paper will position contemporary MSP efforts in Northern Europe within the lineage of theoretical conceptualizations of the space of the sea (e.g. Grotius, Freitas, and Selden)<sup>2</sup> in order to examine MSP in the North Sea as an agent of what Neil Brenner has termed “reterritorialization”, with a particular emphasis on resulting territorial overlaps and contestations; it will also examine the significance of the resulting representations of this space (such as maps and drawings). The process of re-territorialization in this context will be traced firstly through MSP’s role as a tool in the EU’s push for increased territorial coherence<sup>4</sup> through the creation of integrated energy networks, especially internationally networked electrical grids that rely increasingly on large offshore wind farms<sup>5</sup>. Focusing more closely on the spatial planning of the North Sea and the Dutch EEZ in particular, the idea of the MSP as a neo-Seldenian territorial construct will be placed in tension with alternative and contested forms of (human and non-human) marine territoriality, in order to suggest that what is needed to create truly inclusive spatial plans is a broadening both of our understanding of marine ecologies, territories and territoriality, and of the tools with which they are represented.

**Andrew Barry** – UCL (UK)

### **Petrochemical Zones**

The North Sea presents us with a striking image of the carbon economy. On the one hand, it is space marked by the presence of pipelines, ports, and platforms; the off and onshore infrastructure of transportation and logistics. On the other hand, its cities are key ‘centres of calculation’ for the global carbon economy, providing expertise in law, finance, market analysis, corporate social responsibility, and offshore engineering. While economists, political scientists and anthropologists have provided us with a growing number of studies of oil producing regions, such studies tend have surprisingly little to say about either the infrastructure, architecture, and logistics of the carbon economy or the forms of expertise on which its operation relies.

In this paper, I take these arguments further, and consider how the North Sea can be understood as a set of technological or ‘petrochemical zones’. These zones include a myriad of physical connections and infrastructural assemblages, such as gas and oil pipelines. But they also involve connections established through the development of expertise and flows of information. It is important to emphasise two features of such petrochemical zones. One is that they are the historical formations. They contain traces and sediments of the past, multiple interventions and disputes in the present, and projections of possible futures. Petrochemical zones are not static infrastructures; but dynamic assemblages associated with shifting and contested landscapes, buffeted today by the conflicting demands of ‘energy security’ and ‘transition’. Secondly, the formation of petrochemical zones both entails new configurations of relations between disparate materials (including sand, concrete, steel, water, and gas) as well the production of new materials. Any analysis of petrochemical zones must be concerned not just with the shifting relations between states, corporations, engineers and workers, but also the relations between materials, their proximity, and their ongoing stability and transformation.

## **EXHIBITION:**

**Benjamin Kemper**, with H. Bier, S. Mostafavi, K. Vollers, F. Adema

Design-to-Robotic-Production & Operation for the Repurpose of Abandoned Drilling Rigs in the North Sea

This paper presents an investigation into the potential of computational design and robotic production and operation for the repurpose of abandoned drilling rigs in the North Sea. The proposed repurpose envisions a multi-functional building catering to living, working, and leisure activities. Its conceptualization relies on computational and robotic processes that influence not only the design and production of architectural spaces but also change user-space interaction.

In this context, virtual modelling and simulation interface the physical production and real-time operation of built environments thus establishing an unprecedented Design-to-Robotic-Production and Operation feedback loop. This feedback loop is linking design and production with smart operation of the built environment by advancing applications in performance optimization, robotic manufacturing, and user-driven building operation, which leads to a new approach in architecture.

Considering the 190 offshore structures from the Dutch part of the North Sea that already are or will become abandoned as soon as the oil and gas are exhausted, this paper proposes the expansion of habitats into the sea in order to address the expected raise of the sea level.