

Blankness

The Architectural Void of North Sea Energy Logistics

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Chapter 7

BLANKNESS: THE ARCHITECTURAL
VOID OF NORTH SEA ENERGY LOGISTICS*

Nancy Couling & Carola Hein

Energy logistics have contributed to the gradual transformation of the North Sea into an industrial void. Referring to the concept of blankness articulated by Roberto Mangabiera Unger and Jeffrey Kipnis, Nancy Couling and Carola Hein call for imaginative architectural interventions that respond to the potential of logistic spaces lodged within the volume of the sea.

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The North Sea is commonly viewed by the public as a void, but in fact it is a saturated space of logistics, the management of intangible flows for example of petroleum, gas, electricity, and of their physical counterparts, such as cables, pipelines and drilling platforms. This paradoxical spatial condition has been gradually constructed by corporations and governments over several centuries, but the process has accelerated due to industrialisation, low fuel prices, and increased availability after the Second World War. The diverse temporalities and fluctuating fortunes of energy logistics can be seen clearly in the development of refineries in ports around the North Sea and the emergence of offshore extraction.⁽¹⁾

In his comprehensive study of ocean space across historical phases and societies, Phil Steinberg discusses the evolution of a modern Western idealisation of the ocean surface as a “great void.”⁽²⁾ Compared to the view evident in narrative features incorporated in sixteenth-century maritime cartography by the seventeenth century, with the emerging dominance of scientific thought, the sea had become largely empty [Fig. 1, p. 88]. Then, in the eighteenth century, early industrial capitalism, rooted in landed *place*, conceptualised the ocean as non-developable void.⁽³⁾ This transformation reflects the growth of European sea-powers and their view of the sea as a place to exert and consolidate their political and economic strength, but did not mean territorial domination of the seas; rather, the mercantilist states, in particular the Netherlands and the United Kingdom, aimed to defend the unhindered sea-borne trade on which their economies were based.

The ocean void served nations and growing corporations at the time of industrialisation and changing energy consumption patterns. It was also a time when land masses were becoming more densely populated and scrutinised. The use of petroleum, first as lighting oil and then as engine fuel, at the end of the nineteenth and in the early twentieth century, encouraged investors to scale up industrial petroleum drilling and processing, creating a need to connect areas of production and consumption around the globe. Shipping was the cheapest solution for transportation from sites of production to sites of consumption. The perceived emptiness of the ocean disguised the rapid growth of petroleum shipping, first from the United States and later from around the world to the ports of the North Sea.

Scholars have recognised a correspondence between a nation's energy consumption and its material prosperity: since the use of coal to transform production methods in the industrial revolution in eighteenth-century Great Britain, energy consumption has continuously increased.⁽⁴⁾ This tendency has led to the transformation of ocean space, coastlines, ports, and cities through increased shipping of oil, logistical development, and offshore energy production.

Meanwhile, the ocean itself is not only home to a temporary layer of petroleum shipping, it has also long hosted the long-term physical structures of extraction. In 1949, after Soviet engineers discovered offshore oil in commercial quantities, they built the Neft Dashlari settlement, an extensive network of drilling platforms, housing, and leisure structures, around 100 km from Baku and 50 km offshore. This “town” heralded a new era of ocean urbanisation through oil. Twenty years later, the discovery of the Norwegian North Sea field of Ekofisk (1969) by the American oil company Phillips, brought the topographic and geological properties of the northern European continental shelf sharply into focus for national and corporate petroleum companies, inciting them to drill in deeper and rougher waters. The last fifty years have seen vast spatial transformations related to energy logistics both on- and offshore, and a new unfamiliar logistical architecture in the offshore energy sector has begun to emerge.

Oil has a ubiquitous, pervasive presence within our society. The oil industry has inserted physical artefacts in ocean space that are small in comparison to the vast scale of the sea itself, but their presence is underpinned by rigid ordering systems of territorial dimensions.⁽⁵⁾ These systems have been set up through legal devices, engineering, and world market logistics rather than integrated political/democratic planning processes. A variety of shields guard the border between the public and logistics spaces. Individuals require specialist knowledge, skills, and security clearances to enter these realms. For the public at large, who do not have passkeys, the ocean takes on an abstract, remote status that is home to select, highly specialised technical interventions.⁽⁶⁾ If a commodity is kept at a distance and its materiality negated, its cultural dimension becomes more challenging to excavate. The public imagination is steered by national and corporate advertisement campaigns. Carola Hein’s research, among others, unravels the representative imagery that cloaks the black and viscous oil and names the parties who dominate the production of oil narratives. Governments have issued celebratory visuals of oil infrastructure on official documents such as stamps and banknotes, whereas corporations glorify the positive impact of petroleum through advertising, information booklets, and even art. ⁽⁷⁾ This is a dangerous fiction and at the same time a sleight of hand, since corporations and nations control the spaces of oil and gas in secrecy and concealment, making it extremely difficult to *site* as well as *sight*.⁽⁸⁾

The oil and gas industry is a multinational giant without a face, both ostensibly liberated from and inextricably implicated in state operations. Energy companies with identifiable leaders, such as John D. Rockefeller (the founder of Standard Oil) or Pakhuismeesteren (the local company that first stored oil in the port of Rotterdam), have evolved into a set of corporations with anonymous leadership, which



Fig. 2
The North Sea
petroleum grid
(Couling)

is reflected in the industry's logistical spaces. Constantly “swapping assets” and reconfiguring ownership constellations, the industry is also made up of numerous operators delivering specific services and has therefore mostly been able to avoid public liability. The largest oil spill in the history of the offshore industry, the 2010 Deepwater Horizon disaster in the Gulf of Mexico, is a tragic illustration of this point.⁽⁹⁾ Given the previously mentioned relationship between energy consumption and material prosperity, it comes as no surprise that the objectives of this industry resonate with neoliberal practices in business and politics more generally, even though the UN led countries into the Paris Agreement concerning CO₂ emissions.

Journalists report a particularly contradictory relationship between the UK government's commitment to renewables and the important revenues gained from the oil and gas industry.⁽¹⁰⁾ US president Donald Trump has acted more directly in support of the country's oil industry and has withdrawn from the Paris Agreement.

The dominant presence of multinational energy corporations in ocean space has resulted in the erasure of a common non-industrial (non-oil-based) concept of the sea. The force and spatial reach of the industrial conception is demonstrated by the petroleum grid—an expansive, rigid, invisible ordering system within which offshore operations are embedded. Following significant onshore gas finds in Groningen (NL) in 1959, the petroleum industry, eager to explore the hydrocarbon potential of the continental shelf, pressured the UK and Norwegian governments to proceed with national legislation on sovereignty over the sea bed and natural resources. In March 1965, the Norwegian and UK governments jointly agreed to divide the North Sea into quadrants according to the median line principle of one degree latitude by one degree longitude. On the Norwegian continental shelf, quadrants were then subdivided into twelve blocks of 15' latitude × 20' longitude, corresponding to ca. 10 × 25 km, whereas the UK subdivision contained thirty smaller blocks. This continuous extraction grid formalised the offshore petroleum landscape. It has become the state's framework for issuing licences to exploration companies anywhere on the continental shelf [Fig. 2].

The homogeneous, infinitely extendable extraction grid of the North Sea, created by nations under pressure from corporations, exemplifies Henri Lefebvre's notion of abstract space.⁽¹¹⁾ Lefebvre argues that the political principle of unification (of legislation, culture, knowledge, and education) is imperative to the state project of accumulation, without which it cannot be realised. National interventions work hand in hand with the demands of global corporations in the field of energy logistics. This principle of unification explains the simultaneously abstract and concrete character of the state's institutional space. Passing for *absence*, abstract space in fact conceals the *presence* of operational procedures and their results, and it is intrinsically violent.⁽¹²⁾ The half-century of hydrocarbon extraction hinders any attempts to question petroleum narratives and practices.

NORTH SEA ENERGY LOGISTICS

Energy logistics dominates the space of the North Sea at the territorial scale, yet the material traces of this sector have been hard to decipher and pin down. The North Sea has historically formed the central logistical space of a highly active trading realm, which extended east to the Baltic Sea and the central European river system, west across the Atlantic and south to the Mediterranean. Traditionally a trading ground for the exchange of furs, grain,

timber, and luxury goods, today the North Sea is characterised by the generation and exchange of energy—an indispensable, shapeshifting, and often invisible commodity.

Since the mid-twentieth century, North Sea oil and gas production has made a vital contribution to global energy supplies, occupying second place in combined offshore oil/gas quantities in 2006 after the Persian Gulf.⁽¹³⁾ It is still the location of the most offshore rigs worldwide with a count of 184 in 2018.⁽¹⁴⁾ Yet despite North Sea oil and gas production, the EU as a whole is marked by a significant energy gap between supply and demand and is still 80 percent dependent on oil imports.⁽¹⁵⁾ Energy logistics therefore not only lace through and around the North Sea extraction sites, but also carry out the functions of transport, storage, and relocation of oil and gas from external sources. The sea surface and floor comprise the double “motherboard” of northern European energy transactions.

Energy logistics appears on the surface of the sea as a fleeting, yet continuous stream of shipping, which is becoming increasingly consolidated through electronic systems and dedicated deep-water routes. In Europe’s top port of Rotterdam, crude oil, mineral oil products, and LNG accounted for 40 percent of port throughput by weight in 2017 ⁽¹⁶⁾, therefore more tonnes of liquid bulk goods travel through North Sea ports than container goods.

The steady, periodic sea surface of shipping is mirrored on the sea-floor by an invisible template of cables and pipelines. As a liquid medium for systems of flow and exchange, the ocean itself is an environment of minimal friction, ease of transfer, and minimal boundaries. Here, legal structures are less solid than on land, where ownership principles have long legacies. Outside the twelve nautical mile territorial boundary, which in economic terms directly translates into tax advantages, the sea is an ambiguous space.⁽¹⁷⁾ The political neutrality of this space, its extra-territorial status endorsed by international law, and the relative technical ease of offshore operations make subsea pipelines more attractive than overland options: “Offshore lines minimize issues of land ownership and concerns of political instability.”⁽¹⁸⁾ All states are entitled to lay or maintain cables and pipelines on the continental shelf and coastal states cannot impede such activities.⁽¹⁹⁾ Oil and gas pipelines of differing sizes connect satellite platforms to each other as well as to the main facility on land, while fluids and “umbilicals”—a combined string of steel pipes—deliver additional fluids, controls, power, and communication from the landside. This ubiquitous, invisible underwater infrastructure will remain in place even when it is no longer used—unlike installations. According to decommissioning law, pipelines are not subject to a legal requirement of disposal after use.⁽²⁰⁾ Unseen from above, they remain as a logistic nervous system threaded through the sea-floor’s composite matter.

Not only a petroleum-based energy landscape, the North Sea is also coveted by the post-oil energy industry. Under current international objectives to reduce CO₂ emissions, the North Sea has been earmarked by the EU as a favourable site for the rapid expansion of offshore wind-energy production.⁽²¹⁾ Augmenting existing energy logistics, this sector's activities create additional logistical networks of component production (turbines, blades, transformers, monopoles, cables, foundations), assembly, servicing, and delivery routes. These uses compete for space with food production, transportation, military activities, sand and gravel extraction, fish and bird sanctuaries and other protected natural areas. Intensification of all activities has resulted in spatial competition, which all littoral nations must resolve through Maritime Spatial Plans by 31 March 2021.⁽²²⁾ The North Sea has become a crowded and contested realm.

THE POSSIBILITIES OF BLANKNESS

The space of energy logistics across seas and coastlines is continually reorganised by nations and corporations in what David Harvey and Neil Brenner discuss as a process of “creative destruction.”⁽²³⁾ This process produces differential, uneven spatial development in ongoing sequences that can destabilise established urban formats. Therefore, energy logistics play a vital role in the shaping of the built environment both on land and at sea—a role in urgent need of recognition by professionals. Architects, engineers, logistic planners and lawyers must take on expanded and intersecting roles in order to find new forms and expressions for this century's spatial challenges, in particular across the land- sea interface. We support architectural interventions that critically reflect on questions of access and visibility, develop new typologies and programmatic overlays, and find architectural expression for the intersection of natural and cultural ecosystems generated by energy logistics.

Infrastructural systems utilised by energy logistics have an important public dimension. Rather than being part of an extended public design brief, urban infrastructure has mostly been hidden underground, functionally restricted to strategic delivery tasks and taken entirely for granted. The question of its larger role in our relationship, for example with nature, has rarely been addressed. The architectural practice Lateral Office proposes that infrastructure could potentially catalyse new economies that are adaptive and responsive to environment and use.⁽²⁴⁾ Maria Kaika and Erik Swynghedouw draw attention to the things we have previously buried and forgotten, which are returning with urgent environmental questions that we are ill equipped to answer.⁽²⁵⁾ Understanding the apparent spatial and conceptual blankness of energy logistics is the first step towards a conscious, meaningful, and inclusive design for their extended terrain: tracts of land, sea, and the connecting thresholds. The cases discussed here illustrate the ways in which

energy logistics has refused architecture. However, interventions in this field should be fundamental to the field of architecture, and architecture should not refuse energy logistics.

In 1993, Jeffrey Kipnis and Alexander Maymind discussed *blankness* as one of five criteria for a new architecture alongside *vastness*, *pointing*, *incongruity*, and *incoherence/intensive coherence*.⁽²⁶⁾ At the time, he named this quality partly in relation to postmodern architecture, and blankness was a potential release from collage as the “prevailing paradigm of architectural heterogeneity.”⁽²⁷⁾ The five criteria had first been formulated and introduced by the neo-modern social theorist Roberto Mangabiera Unger in “The Better Futures of Architecture.”⁽²⁸⁾ Unger called for architects to insist on new expressions of collective life in physical form, and for proposals describing possible futures for a more democratic society and a more empowered individual. He urged them to create a greater range of narratives, resist societal norms, and foster conflict between alternatives.⁽²⁹⁾ According to Unger, architecture must embrace the ambivalence of both pragmatic, established systems and inspirational, transcendent spatial ideas. In his concept of radical-democratic politics, an architectural vision is needed.⁽³⁰⁾ But such a concept and such a vision are critically lacking in the field of energy logistics.

The political dimension of Unger’s argument resonates with the politics of energy logistics in the neoliberal market system. To differing degrees, this logistical space has, over the continuing course of industrialisation, devoured its counterparts of social and technical labour and of historical spaces of trade interaction. Smooth, efficient logistics that developed in the service of the global economy cut off social interactions: security zones at ports and around offshore wind parks and rigs prevent intrusion, compressed shipping turnaround times in ports hinder crews from making real social contact on shore. Energy logistics, particularly offshore, are still blank in architectural terms—that is, is we have not yet ascribed to them democratic, socially relevant meanings; heterogeneous human activities, cultural references, or detailed forms of ownership. In the absence of such common meaning, nations and corporations have prescribed spatial patterns and constructed banal enclosures on land and at sea. The conversation between Kipnis and Unger on the notion of blankness calls the general public to acknowledge energy logistics as a key player in the shaping of our built environment and for architects to consciously move into this domain of design, including its offshore spaces.

For Kipnis, Unger’s *blankness* was architecturally optimistic and full of potential. It was neutral, non-ascribed, without formal reference, and combined with other criteria including *vastness*, could enable incongruous entities to enter into dialogue with each other while also avoiding “traditional hierarchical spatial patterns.”⁽³¹⁾



Fig. 3
Video still "The Swarm." Little archaeological and data-controller robots operate in intelligent seasonal swarms, working together to monitor the health and cultural value of the North Sea. (Justine Sleurs, Bergen School of Architecture BAS 2019)

Kipnis's new architecture proposed large mute volumes formed by incongruous, unfamiliar geometries that set up unexpected relations to their surroundings and therefore enhanced the heterogeneity of the resulting spaces. We argue that considering oceanic water masses as vast, deep volumes rather than flattened planes can stimulate architectural thinking along the lines Kipnis intends. In addition to volume, they possess cores and density, properties normally associated with solids. While still unfamiliar to architects, these organic geometries are precisely determined according to the oceanographic parameters of depth, currents, bathymetry, temperature, and salinity.

In response to radical transformations generated by a neoliberal mode of operations, energy logistics has developed and expanded unchecked across ocean space. Throughout this process, planners prioritised economic and logistic concerns, but erased the public in

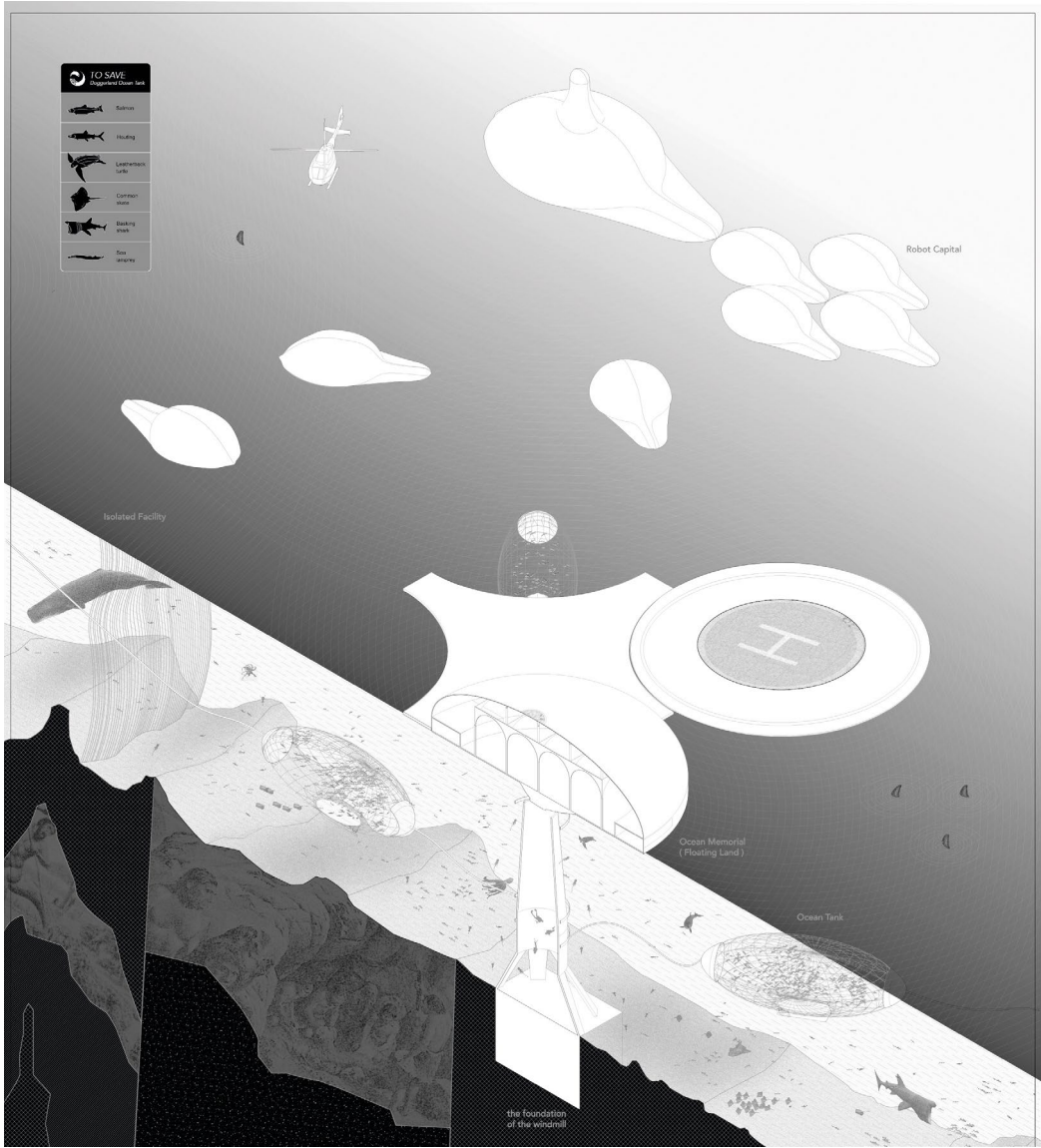


Fig. 4
Reuse of
wind-turbine
foundations close
to the Dogger Bank
as a knowledge
bank for marine
archaeology and
species protection.
(Li-Cheng Chen,
& Justine Sleurs,
BAS 2019).

the process. How can the tools of an architect expand and dismantle this sectorial approach to design and communicate an integrated public vision? Rather than the largest periphery, the high seas are the largest public space on earth and require innovative approaches that can both capture the public imagination and develop scenarios in tune with the dynamics of the sea itself. Conceptions of heterogeneous diversified futures for energy logistics, particularly in offshore space, are lacking. We need visions that can create awareness and inspire design research, extending the field of architecture beyond the shoreline and embracing the spatial challenges of the ocean. The sea is not a void or a tabula rasa, but a moving volume housing

differentiated habitats and internal spaces, including inherited logistical systems. The role of architecture has long been to translate such functionalities into meaningful habitats. The blankness of sea-borne energy logistics—as a corporate strategy designed to make us look away—must do the opposite: attract attention and inspire architectural intervention. Kipnis’s alternative understanding of blankness offers a way of responding to ocean volumes and celebrating architectural manoeuvring in space.

The North Sea has developed historically as a vital logistical space, first filled then emptied of large-scale human interaction, narratives, and imagery. The sea space is now planned, monitored, excavated, mobilised for transport, and operationalised for energy production. As environmental considerations become urgent and fish stocks collapse, as the climate changes and new generations of offshore infrastructure are both installed and dismantled, new architectural interventions are required which re-programme this logistical space with heterogeneous human activities and reinvigorate the public dimension of energy logistics and of our common ocean imagination [Fig. 3, 4 & 5 p. 89].

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