



THE PETROPOLIS OF TOMORROW

Edited By
Neeraj Bhatia
Mary Casper

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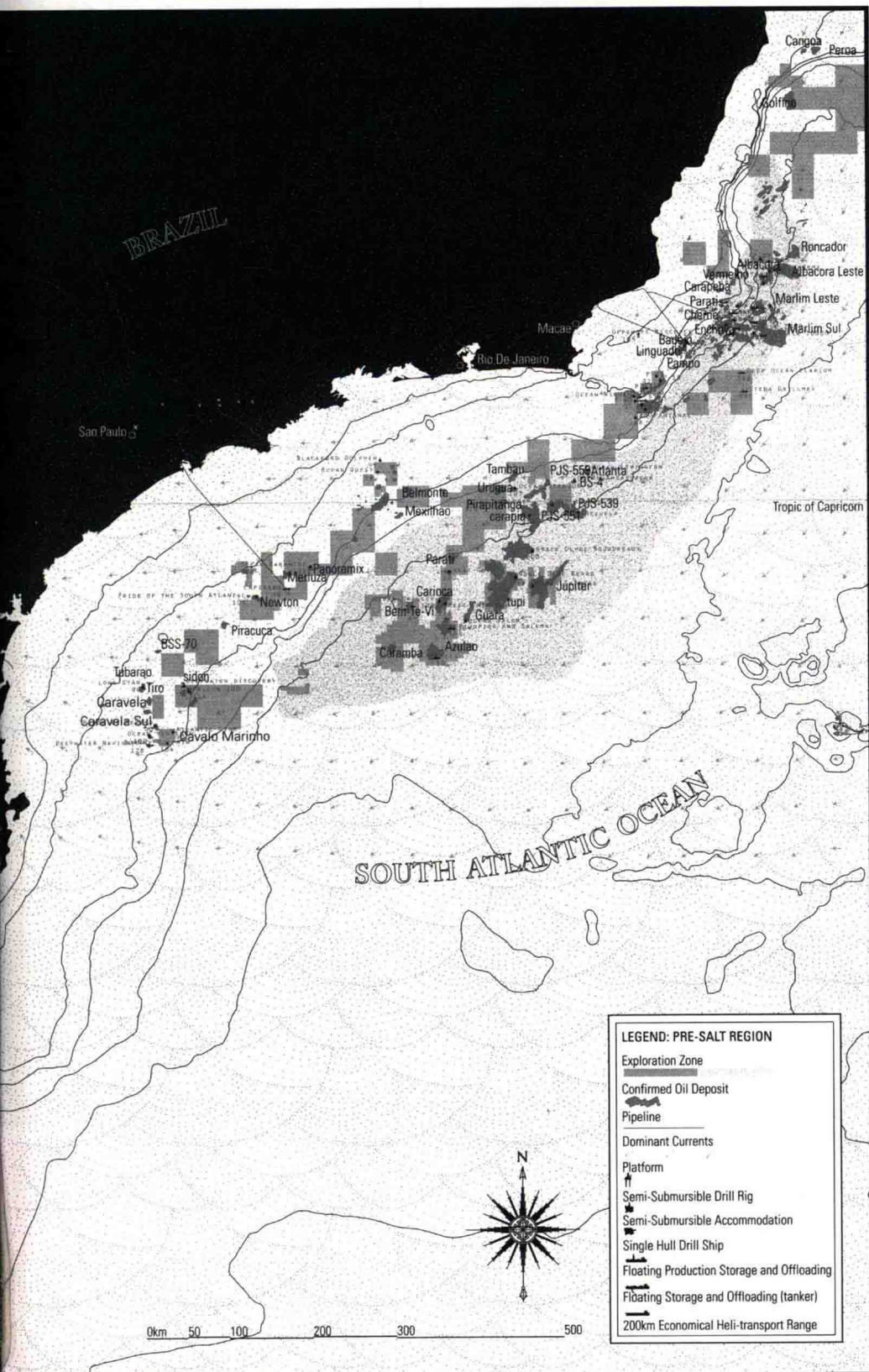
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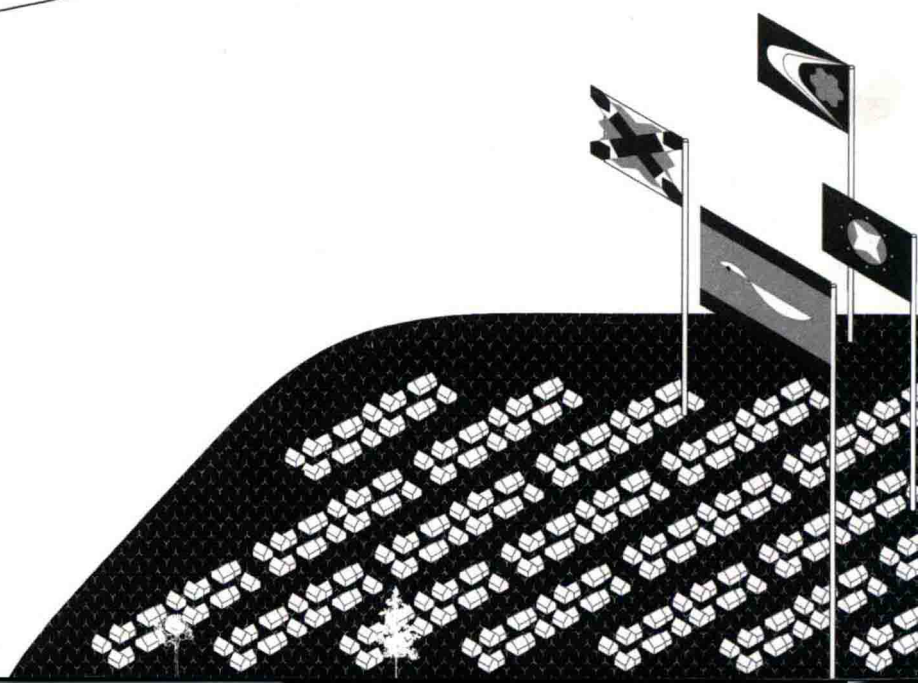
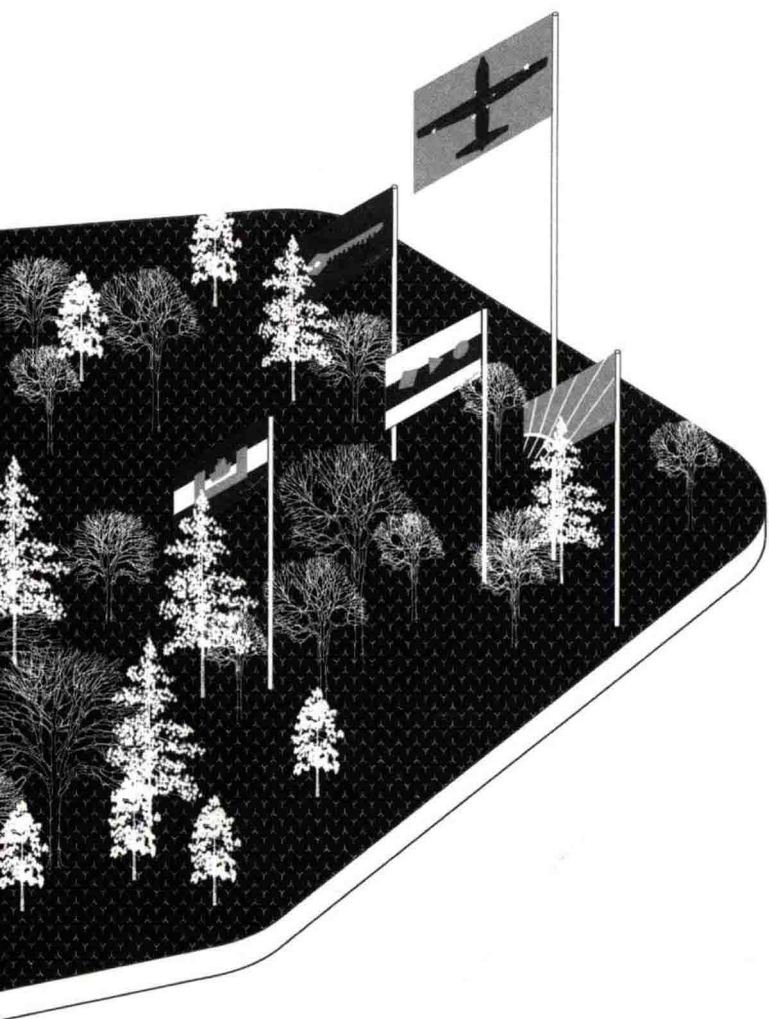
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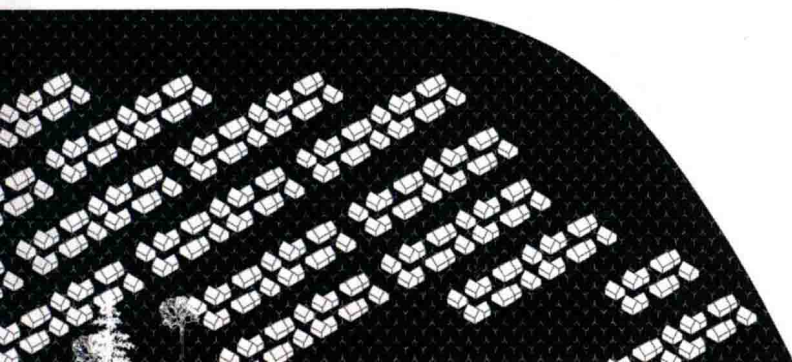
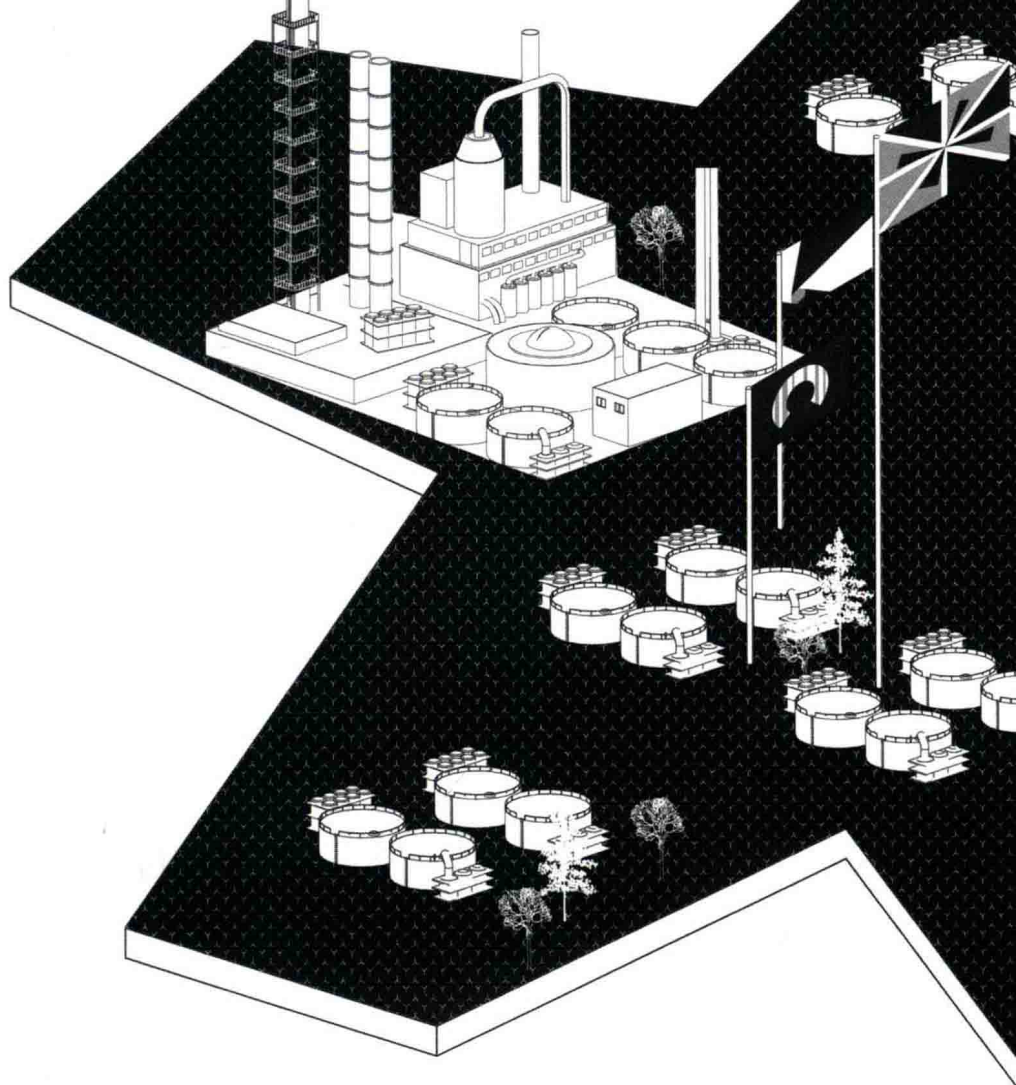
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Foreword

ALTERNATIVE

POST-OIL

CITIES

Under the surface of the now manifold discussions of oil states and their influence across the globe, the oil and hydrocarbon industry have played a transformative role in reshaping remote landscapes. From rural Texas to central Abu Dhabi, petrodollars have morphed sand into monuments of energy—casting extraneous geometries upon oil's brittle geographies.

The case of South America is no exception, where the enterprise of oil and the reincarnation of its affiliated infrastructures has had a pivotal role in delivering a differing model of the post-oil city. Beyond the progressive expansions of traditional towns in 1920s Argentina such as Comodoro Rivadavia or the construction of postwar modernist garden cities in Venezuela, the most significant effect the oil industry has had on South America's urbanisation has been through the appropriation and adaptation of its original extraction strips and their gradual transformation into new urban outposts. Similar to the *Law of Indies* and its tightly scripted process for colonizing more than 900 cities and towns across the American continent, the infrastructural geometries required for oil extraction have become a skeleton for urbanisation throughout the Venezuelan coast, the Ecuadorian and Peruvian Amazon, and most recently, the Brazilian Amazon and its Atlantic coast.¹ Both inland and along the ocean, the metrics of the oil camp have influenced a template for urbanisation that will outlast oil, derived from the oil extraction process itself.²

The Petropolis of Tomorrow, an applied research and design project under the direction of Neeraj Bhatia, presents a critical perspective on this new urban frontier. Envisioning the oil platform as a new geography of urbanism, the work examines how the process of petroleum and natural gas extraction can serve as a backbone for more comprehensive urbanism at sea. The proposals documented herein go beyond the basic settlement requirements imposed by this form of resource extraction in order to propose a new form of urbanity where the city is conceived as a pluralistic social project paired with resource extraction, rather than simply a result of oil extraction enterprises. While the site of this investigation—the oil fields along the Brazilian coast—tests an extreme scenario with a renewed interest in infrastructure, the work offers lessons to the broader South American context. As oil extraction continues to carve large tracts of land along Ecuador, Peru and Brazil, oil corporations and the national governments that empower them must address the impact of such heavy extraction infrastructure on the population that harvests it. Such undertakings necessarily bring new actors to the present and the future of oil geographies. The work collected in this volume offers compelling insight into how this might occur, positing new hybrids between industry and urbanism for an alternative twenty-first century extraction town.

This publication makes a unique and significant contribution to the South America Project (SAP), a transcontinental applied research network that endorses the role of design within the rapidly transforming geographies of the South American continent. As one of over thirty applied research projects currently working with SAP, *The Petropolis of Tomorrow* comprises an important part of the larger research agenda. Its focus on design synthesis and the role it can play in mapping out new physical and experiential qualities offers critical lessons to the dialogue of transformation in the South American hinterland. In the case of hinterwater, *The Petropolis of Tomorrow* also makes a compelling case for speculative research in the South American context and provides a comparative foundation for the other investigations of SAP project in years to come. ■

Felipe Correa
Associate Professor, Harvard University Graduate School of Design
Co-Director, The South America Project

1 Ministerio de Obras Públicas y Urbanismo, *La Ciudad Hispanoamericana: El Sueño de un Orden* (Madrid: Centro de Estudios Históricos de Obras Públicas y Urbanismo, 1989).

2 For an expanded text on the role of oil in shaping the South American Hinterland please see: Felipe Correa, "Afterlife Strategies: The Other Post-Oil City", *Volume 29* (November, 2011).

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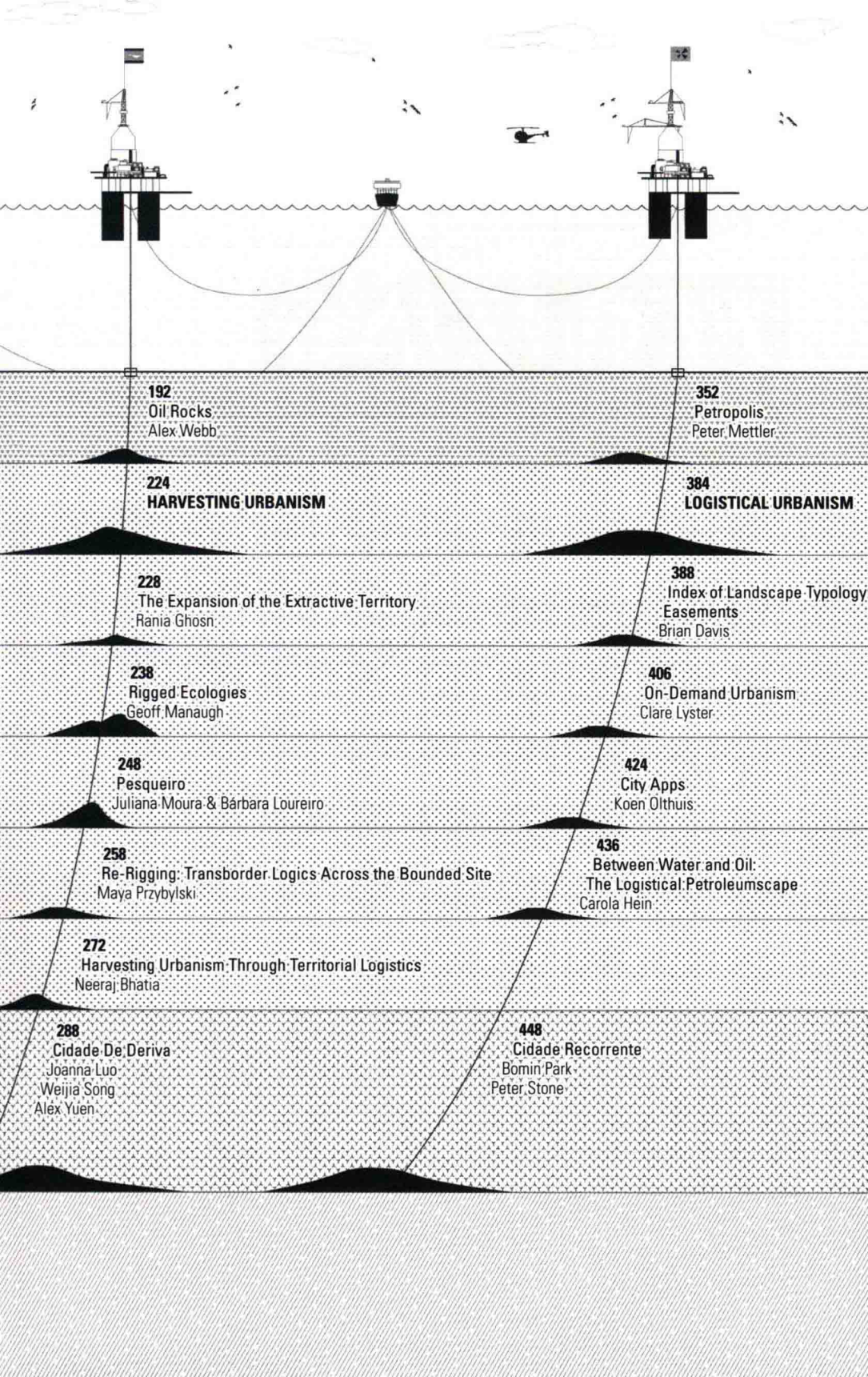
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Introduction

FLOATING

FRONTIERS

Neeraj Bhatia

“Is the set well designed? Indeed, it is not designed at all! It is true that in individual fragments of the set here and there—in individual buildings—we see the conscious hand of the architect. But in speaking, as we are, of the city as a whole... it is not a work of conscious design.... May there not yet arise, perhaps in another generation, architects who, appreciating the influence unconsciously received, will learn consciously to direct it?”

– Hugh Ferriss, *The Metropolis of Tomorrow*

Brazil, a nation that relies on ethanol for forty percent of its fuel supply, has in recent years also become one of the largest oil producers in the world. The latest oil discoveries in the Campos and Santos Basin, off the coast of Rio de Janeiro, are destined to put Brazil in the coveted top ten of oil producing nations globally.

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The Tupi and Jupiter oil fields (discovered in 2007 and 2008) have recently been surpassed by the Libra oil field, which is estimated to hold as much as fifteen billion barrels of oil. Approximately 114 miles off the coast of Rio, Libra and newer discoveries tend to be located further into the sea. However, not only is this oil becoming difficult to access from the coast, it is also deep below the water's surface, underneath the presalt fields. Despite these obstacles, in September of 2010, the Brazilian oil company *Petrobras* raised over seventy billion dollars in the world's largest public share offering to extract this petroleum, unleashing a new frontier comprised of *Petropolises*, or cities formed around the logistics of resource extraction.¹

The newest findings in the distant Santos Basin are challenging the traditional notions of the land-based urbanism associated with oil production. Existing beyond the feasible range of helicopter transport, these offshore fields have presented a logistical crisis in the development of several offshore settlements. These "floating frontier towns" are hundreds of kilometres offshore, floating approximately a mile above the sea floor.² New artificial island hubs are now being investigated to bridge these distances and to allow for efficient movement of people, as well as storage of materials.³ The consolidation of distributed populations into a series of nodes, effectively forming a larger core population, is of particular interest in this paradigm shift in the logistics of the offshore extraction industry. As such, these proposed hub islands may include a more diverse and larger quantity of locally controlled programmes that sit outside the global logistics of petroleum. Accordingly, the networks and nodes associated with impending petropolises have the potential to critically project new forms of water-based urbanism. Currently, eighty-six fixed and forty-six floating rigs serve as workplace for over forty-five thousand people in Brazilian waters.⁴ While these rapid developments are forming a new frontier of exploration and urbanism in the Atlantic Ocean, this frontier is largely composed of autonomous fragments that are often overlooked by designers in a holistic manner.

As the number of floating developments increase in the upcoming years, it is worthwhile to speculate on the impact that this frontier will have on Brazil, beyond economic prosperity. In Frederick Jackson Turner's seminal work, *The Significance of the Frontier in American History*, he defines the frontier as "the outer edge of the wave—the meeting point between savagery and civilisation."⁵ From the viewpoint of a historian and economist, Turner's *Frontier Thesis* proposes that the frontier provided a particular set of qualities that were the instigators to American democracy. While it may be difficult to prove that democracy was the result of these characteristics, it is useful to examine the particular attributes Turner ascribed the line of the frontier. For Turner, the frontier was free from the British cultural and institutional dogmas that influenced the Eastern United States, and therefore provided a sense of independence. Those pushing westward had free land at their disposal and developed skills to control and profit from the "wild"