Future of Ports

The changing relationships between ports and cities

Stefano Recalcati, Arup

Evolution

Schematizing the interpretation given by B. S. Hoyle in "Revitalizing the waterfront", it is possible to identify four key moments in the evolution of port functions and urban areas.

1. SHARING

From its origin until the end of the nineteenth century, the city and the port constitute a single entity sharing the same urban spaces.

2. SEPARATION

During the twentieth century, ports required more space and ever-greater depths to meet renovated production and logistical needs. This lead to the physical separation of port functions from urban areas.

3. UNDERUSE

From the sixties to the eighties, original port areas close to the city centre were abandoned because they were unable to fulfil the productive functions required by technological development.

4. REGENERATION

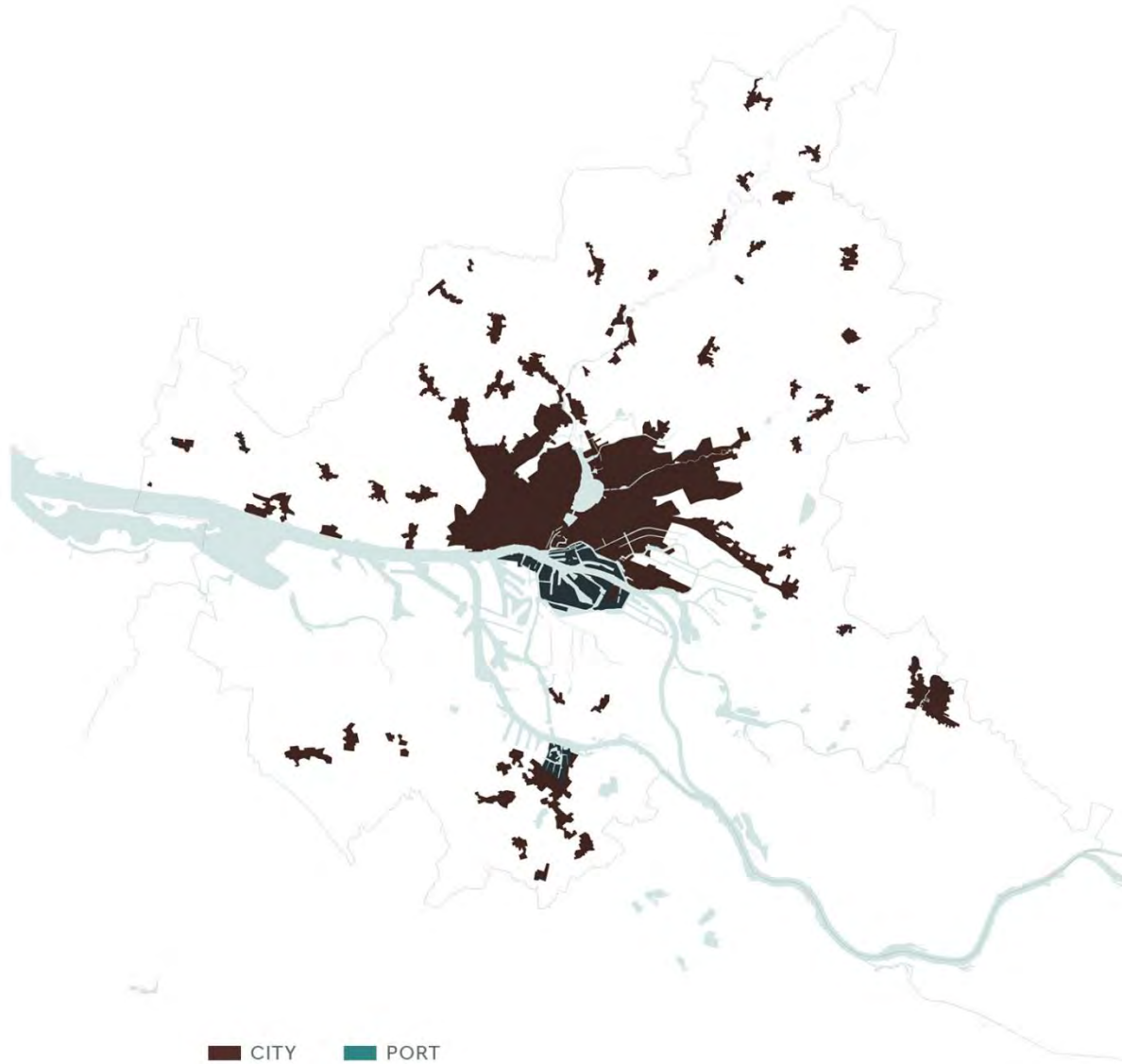
Since the seventies, there began a process of regeneration of abandoned waterfront spaces, which revives cities' relationship to water.

Hamburg

Coordinates / 53° 33′ 55″N 10° 00′ 05″ E

1. SHARING

before 1900

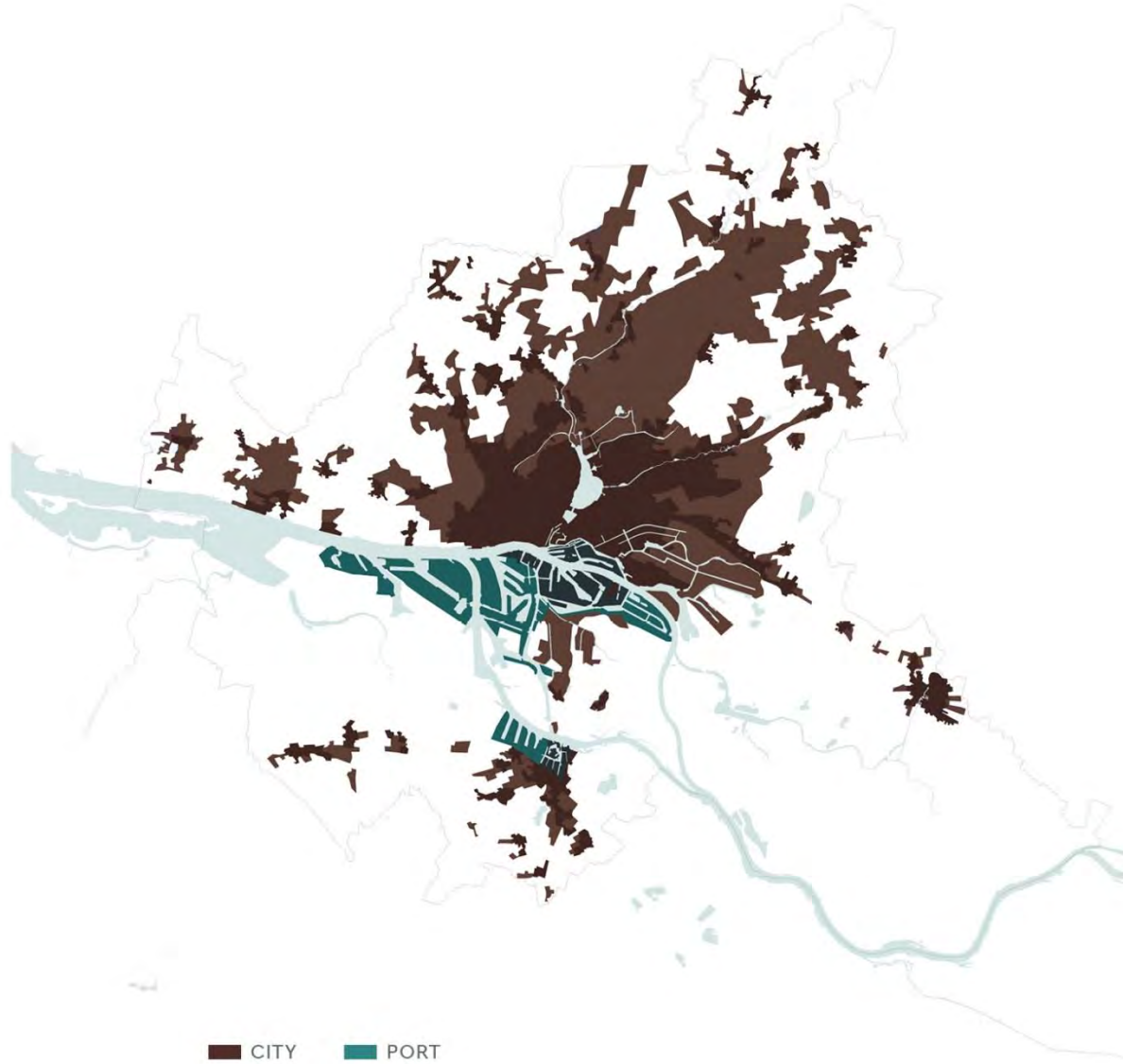


Hamburg

Coordinates / 53° 33′ 55″N 10° 00′ 05″ E

2. SEPARATION

1900–1960



Hamburg

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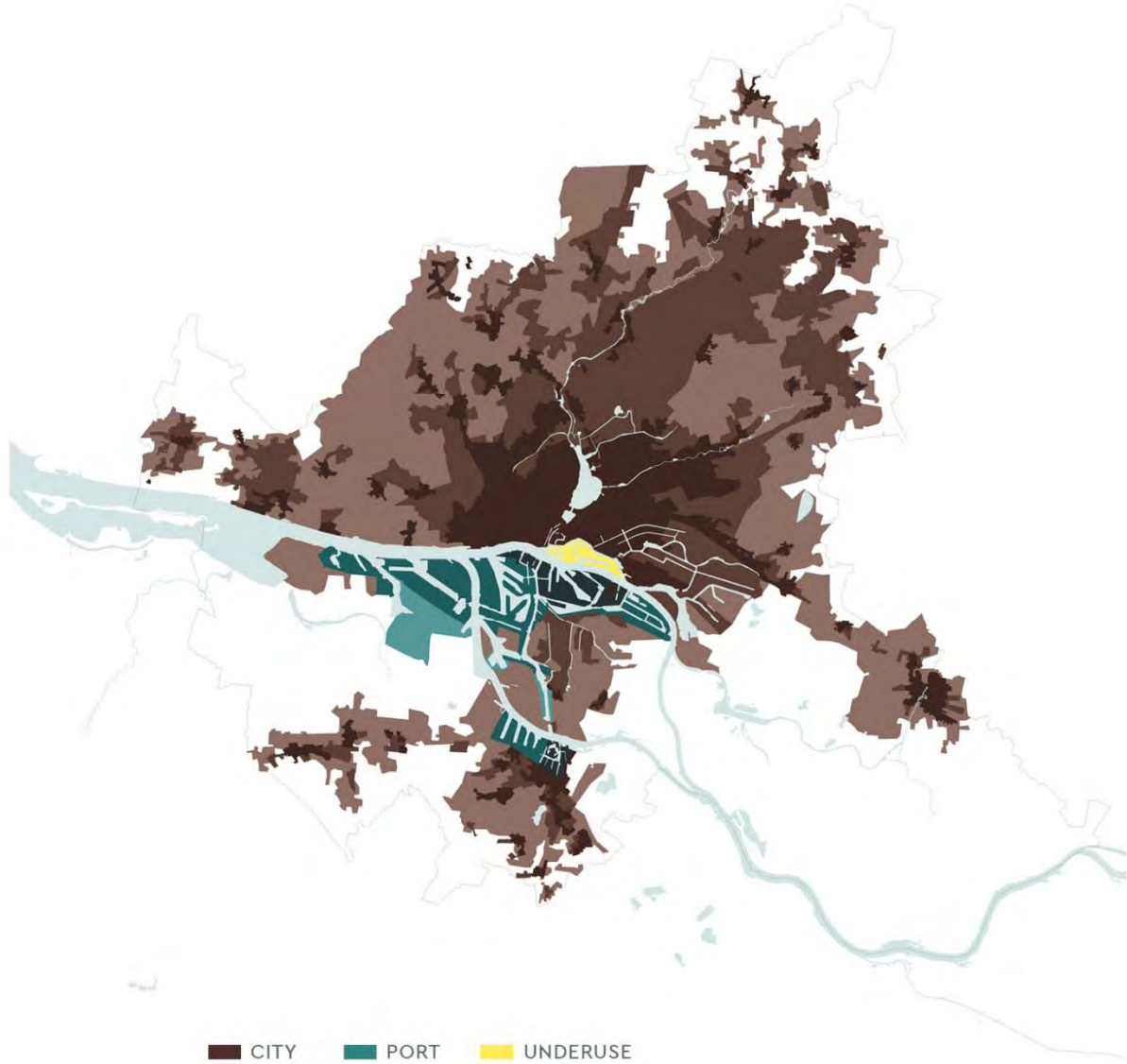
3. UNDERUSE

1960–1980

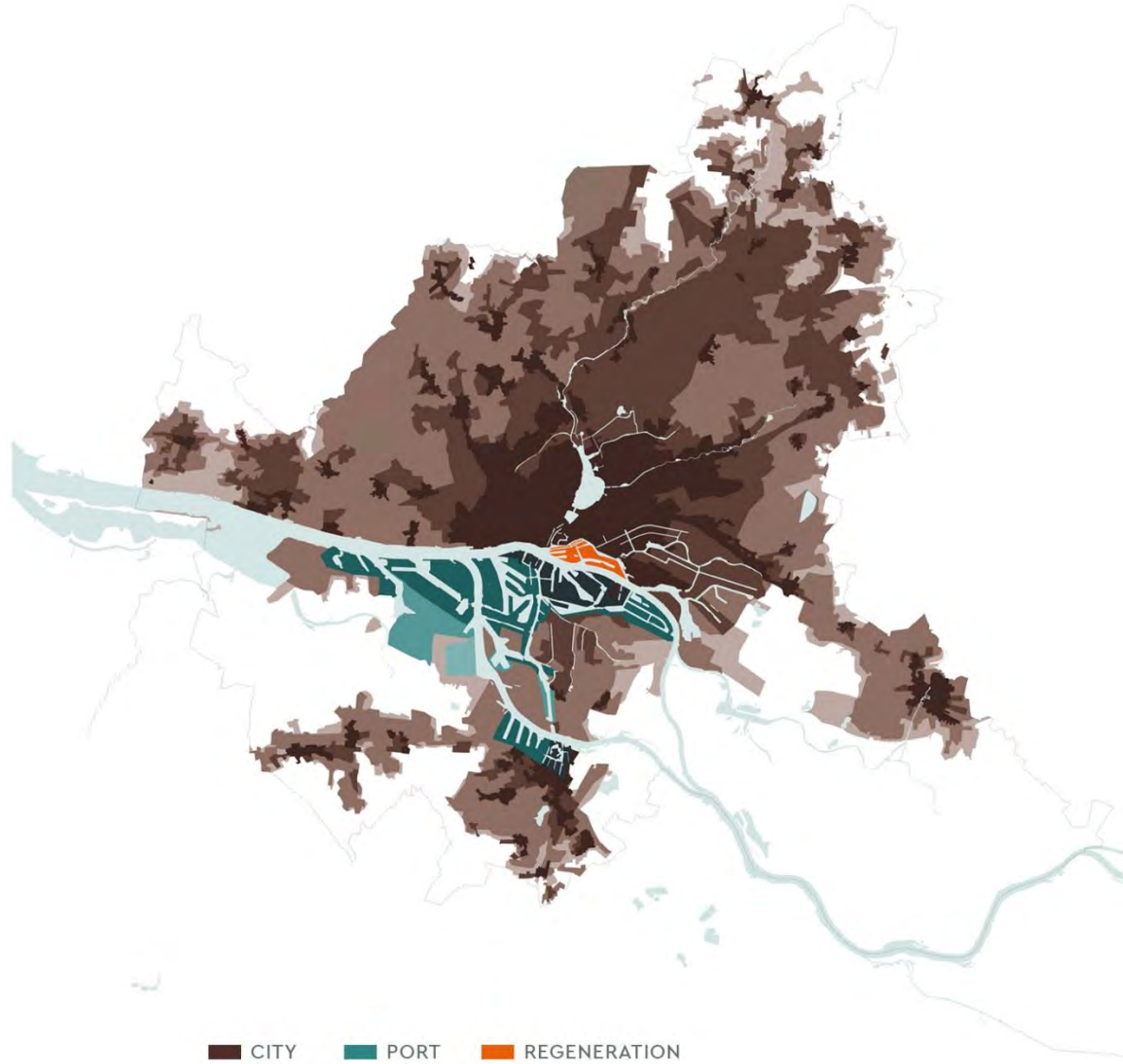


Hamburg

Coordinates / 53° 33′ 55″N 10° 00′ 05″ E

4. REGENERATION

1980–on going



Rotterdam

Coordinates / 51° 55′ N 4° 30′ E

VIS	PRO	COM
●	●	○

ENV	QUA	INN
○	●	○

/ Kop van Zuid /

Rotterdam

Coordinates / 51° 55' N 4° 30' E.

/ Kop van Zuid /


Rotterdam
Coordinates / 51° 55' N 4° 30' E
REUNITING A DIVIDED CITY
/ Kop van Zuid /

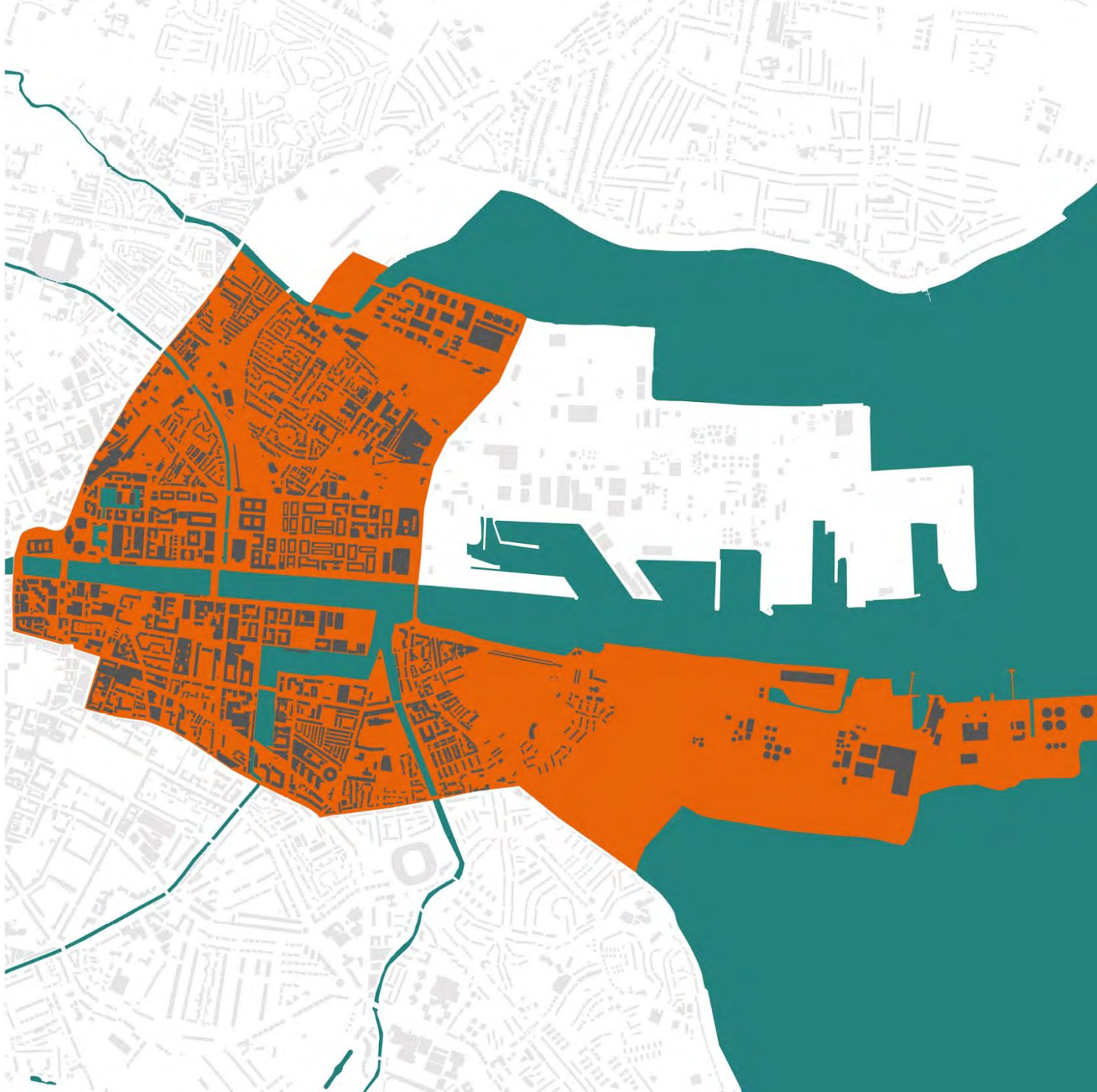
Dublin

Coordinates / 53° 20′ 52″ N 6 ° 15′ 35″ W

VIS | PRO | COM

ENV | QUA | INN

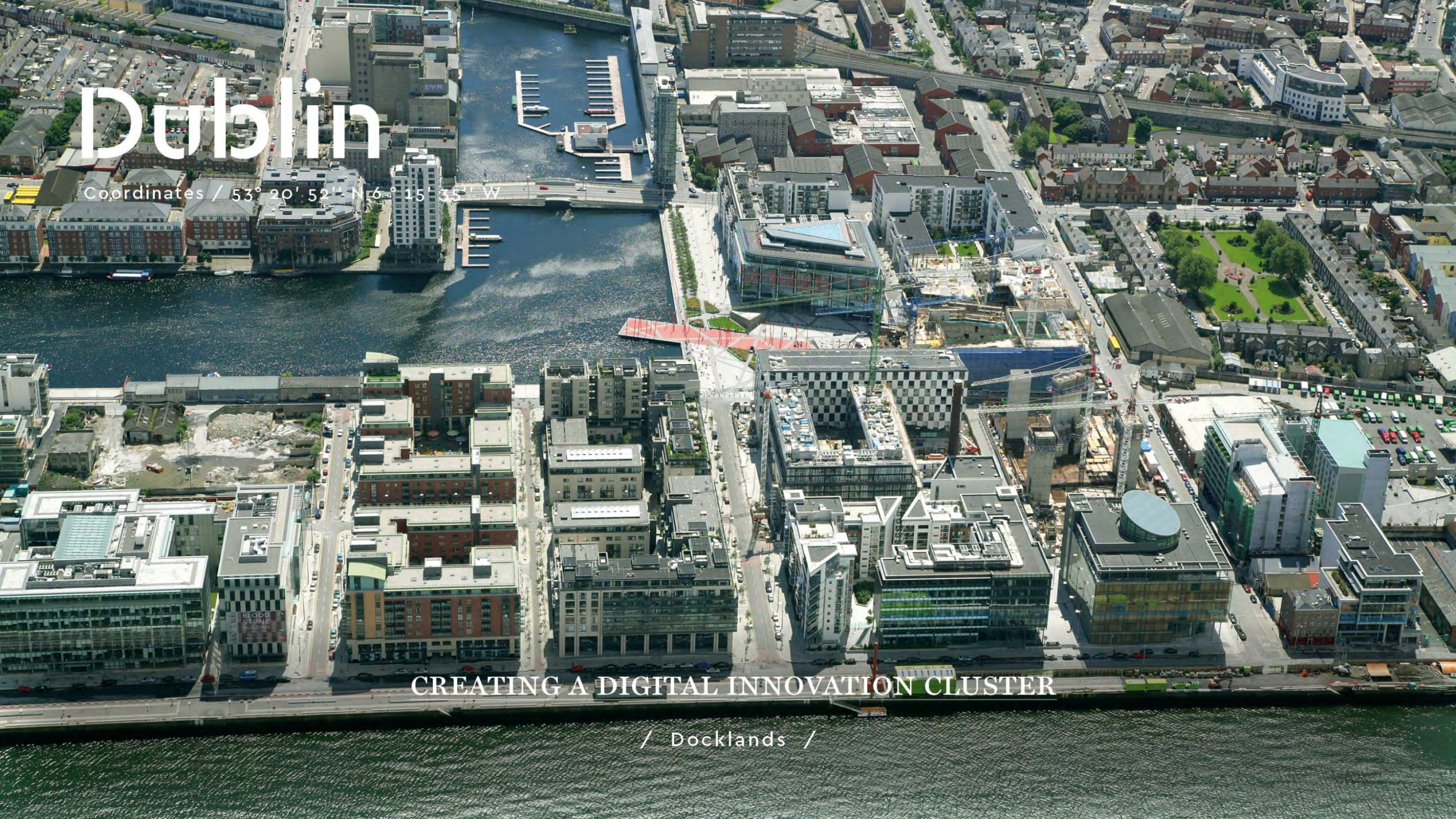
/ Docklands /



Dublin

Coordinates / 53° 20' 52'' N 6 ° 15' 35'' W

/ Docklands /



Dublin

Coordinates / 53° 20' 52'' N 6 ° 15' 35'' W

CREATING A DIGITAL INNOVATION CLUSTER

/ Docklands /

(PHASES)

CITY

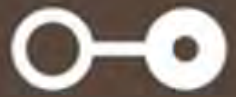
PORT

1.		before 1900	SHARING
2.		1900 - 1960	SEPARATION
3.		1960 - 1980	UNDERUSE
4.		1980 - today	REGENERATION

(PHASES)

CITY

PORT

1.		before 1900	SHARING
2.		1900 - 1960	SEPARATION
3.		1960 - 1980	UNDERUSE
4.		1980 - today	REGENERATION
5.		after 2020	SHARING

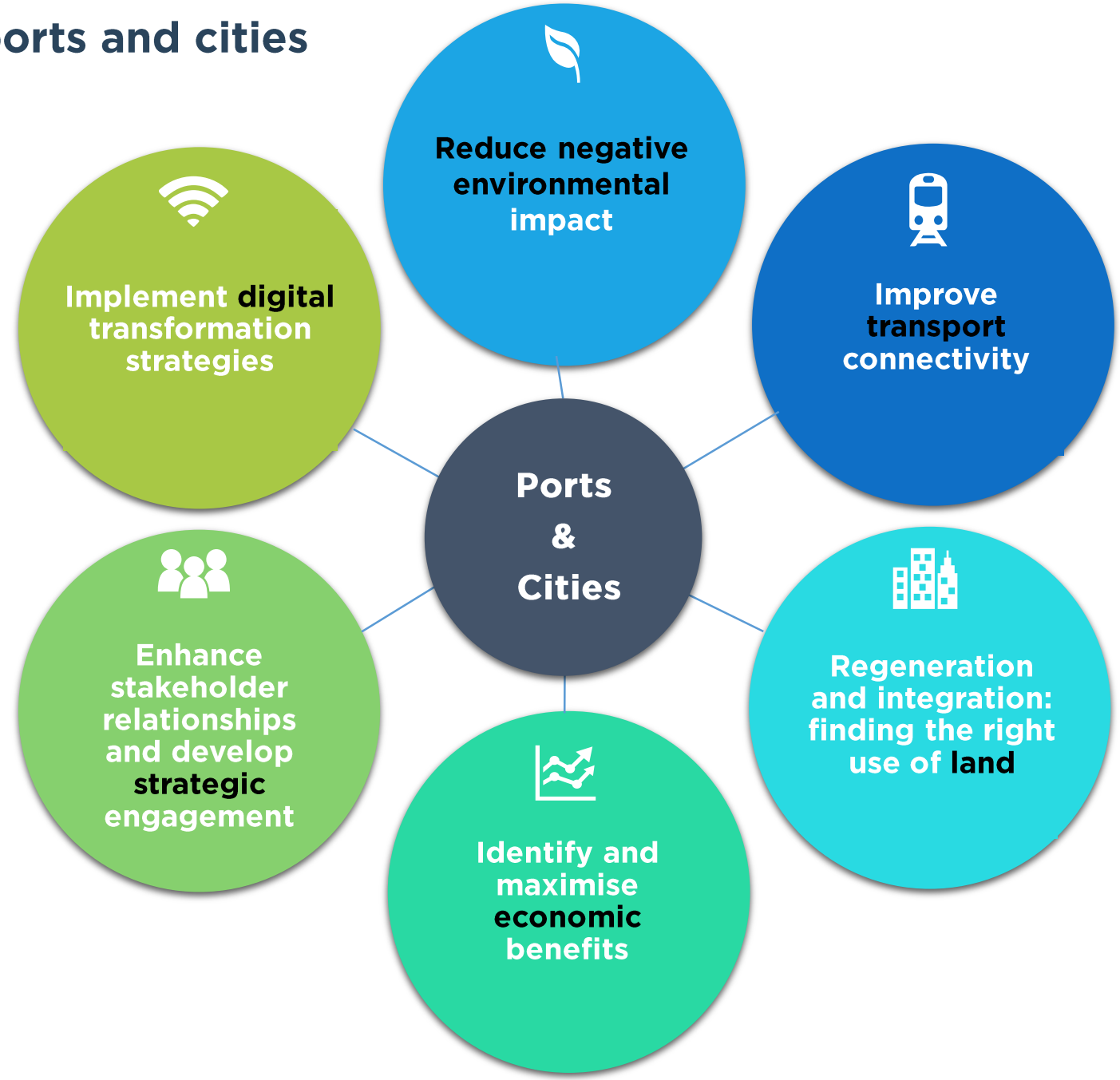

OOCL

Ports and cities face similar challenges but often express them differently

Themes	City	Ports
Environment	Cut emissions	Reduce negative blight and environmental footprint
Connectivity	Road congestion	Poor hinterland connectivity
Land use	Provide quality places	Find optimal land location
Local economy	Improve city competitiveness	Enhance port business
Strategic planning	Increase powers and engage with relevant stakeholders	Promote interest in long-term strategic planning
Digital	Become a smart city	Prepare for digital transformation

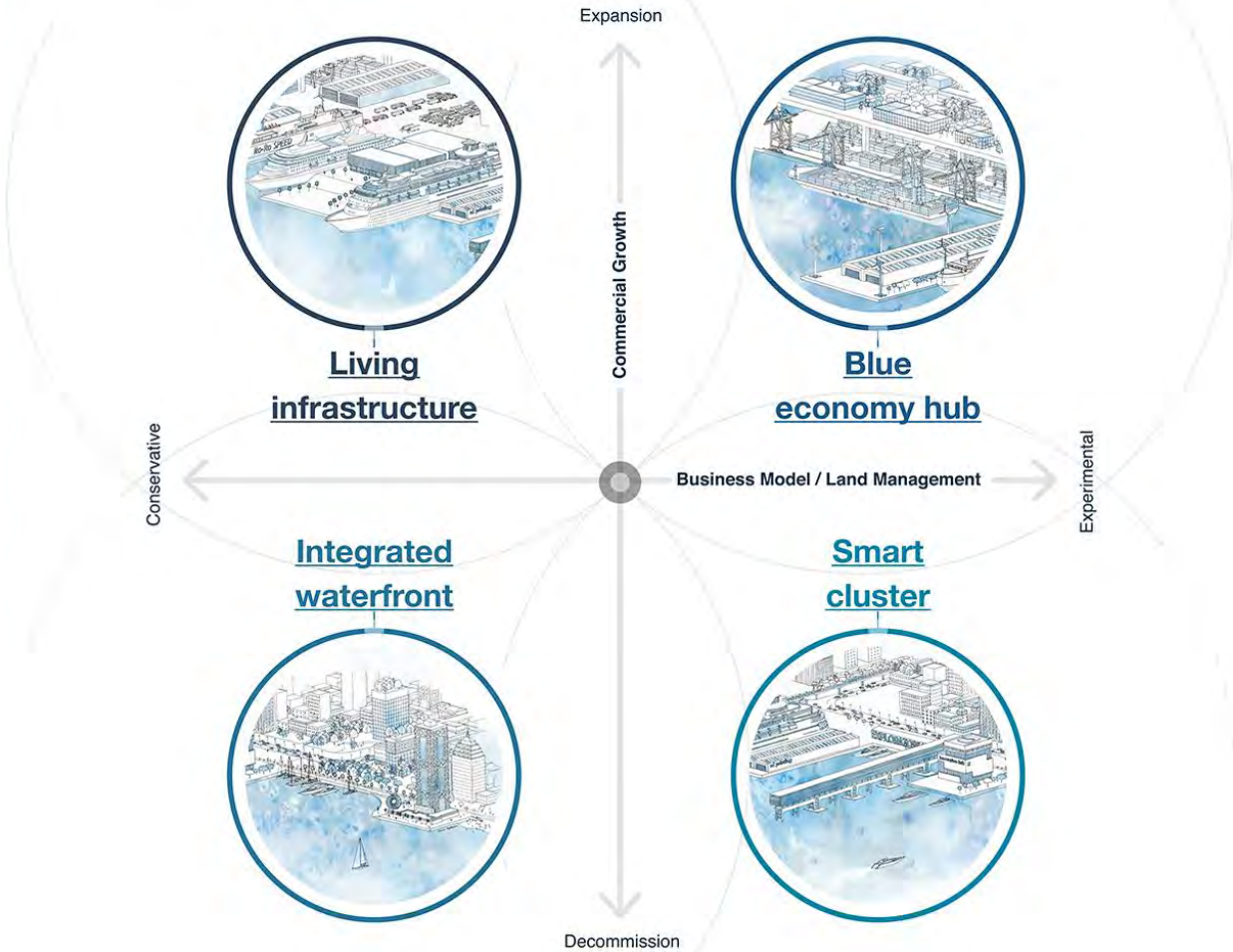
Many of these challenges could be tackled jointly to unlock shared benefits

6 key common objectives for ports and cities



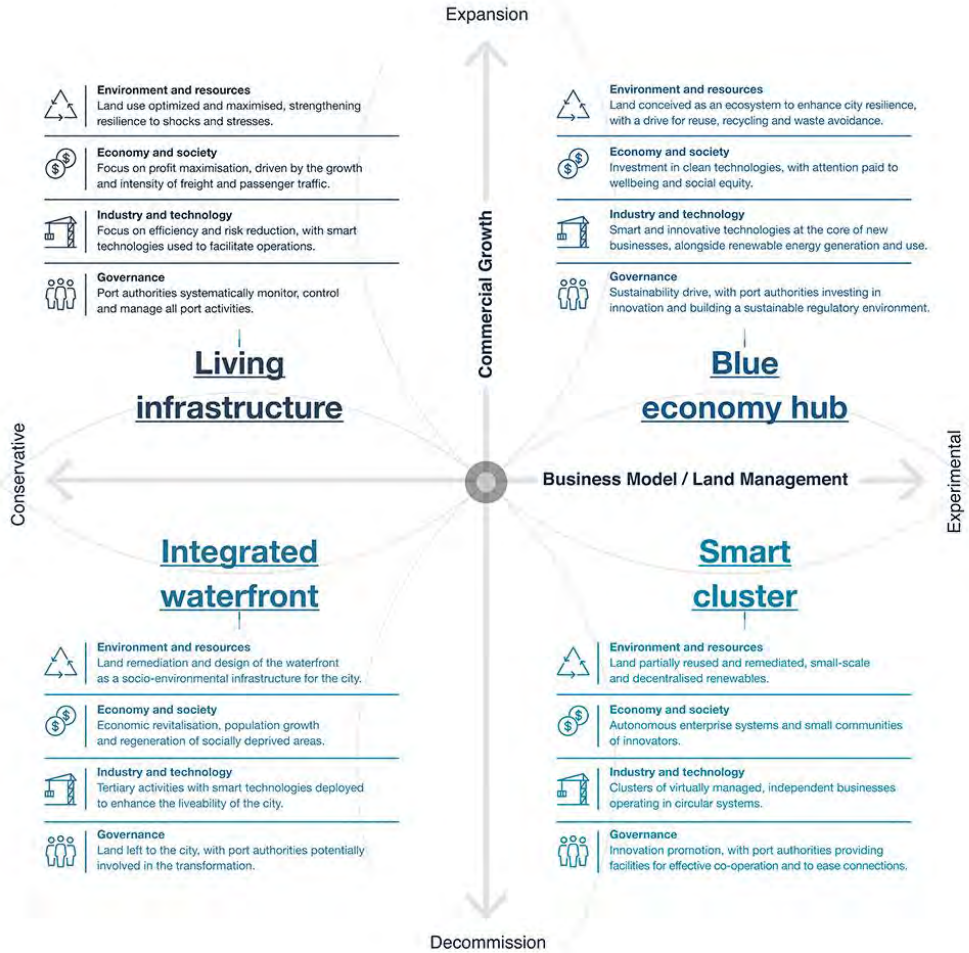
Future Scenarios

Four scenarios reveal the dynamics that are influencing the future of ports, according to their commercial growth trends and the business models applied to their land management.



Characteristics of the Scenarios

Each of the scenarios performs differently, with their specific characteristics shown in relation to environment and resources, economy and society, industry and technology, and governance.



Integrated waterfront

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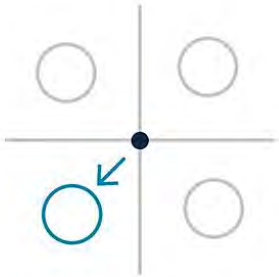
Conservative decommissioning



Scenarios

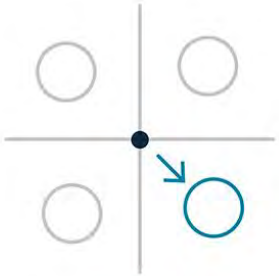
The change of technological requirements for shipping and the pressure of urban development on port boundaries often result in the decommissioning or delocalisation of ports, leading in turn to waterfront regeneration.
The redevelopment of 127 hectares of HafenCity in Hamburg is an example of a new urban area with a mix of uses including residential, commercial, retail and cultural. **Which placemaking principles and governance processes will lead waterfront regeneration in the future?**

— Courtesy of HafenCity Hamburg GmbH

Smart cluster

Experimental decommissioning

Even if decommissioned, most ports are central, secure and well-served by infrastructure, so adaptable for innovative industrial sectors such as technology-related businesses. For instance, the Embarcadero in San Francisco, a former commercial and then passenger pier, became a desirable location for technology, design and biotech companies, including a campus for informal education. **How will ports be able to attract innovative industries onto decommissioned land?**



Scenarios

— Courtesy of Chibi Moku

Blue economy hub

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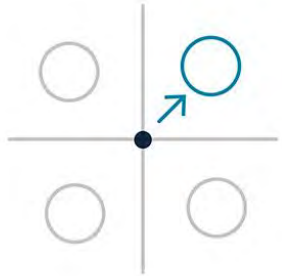
Experimental expansion



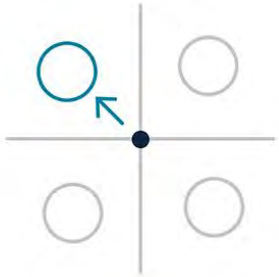
Scenarios

Ports offer opportunities to converge social and environmental awareness within a so-called Blue Economy approach, a vision for "improved wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP 2013). Rotterdam is improving its environmental performance by fostering sustainable enterprises (e.g. wind turbines) and by encouraging sustainable innovation (e.g. bio-based industrial clusters and innovation hubs). **Which strategies are beneficial for ports to improve their resilience while having a positive influence on the marine ecosystem?**

— Courtesy of Port of Rotterdam

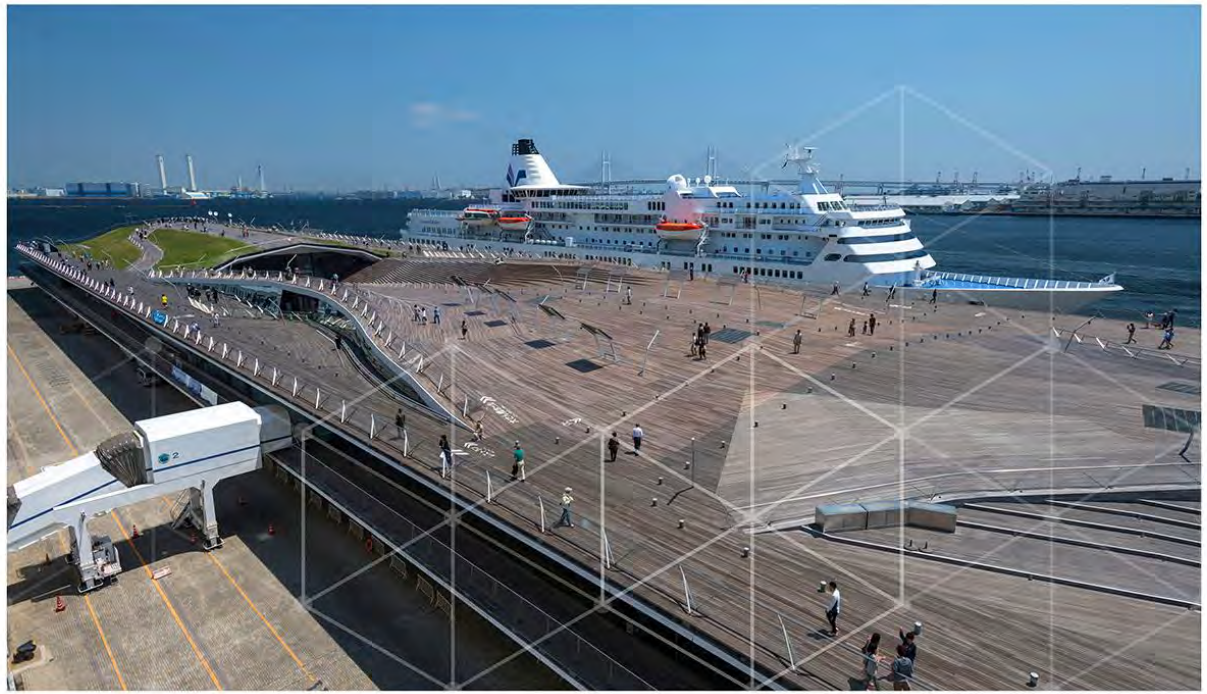
Living infrastructure

Conservative expansion



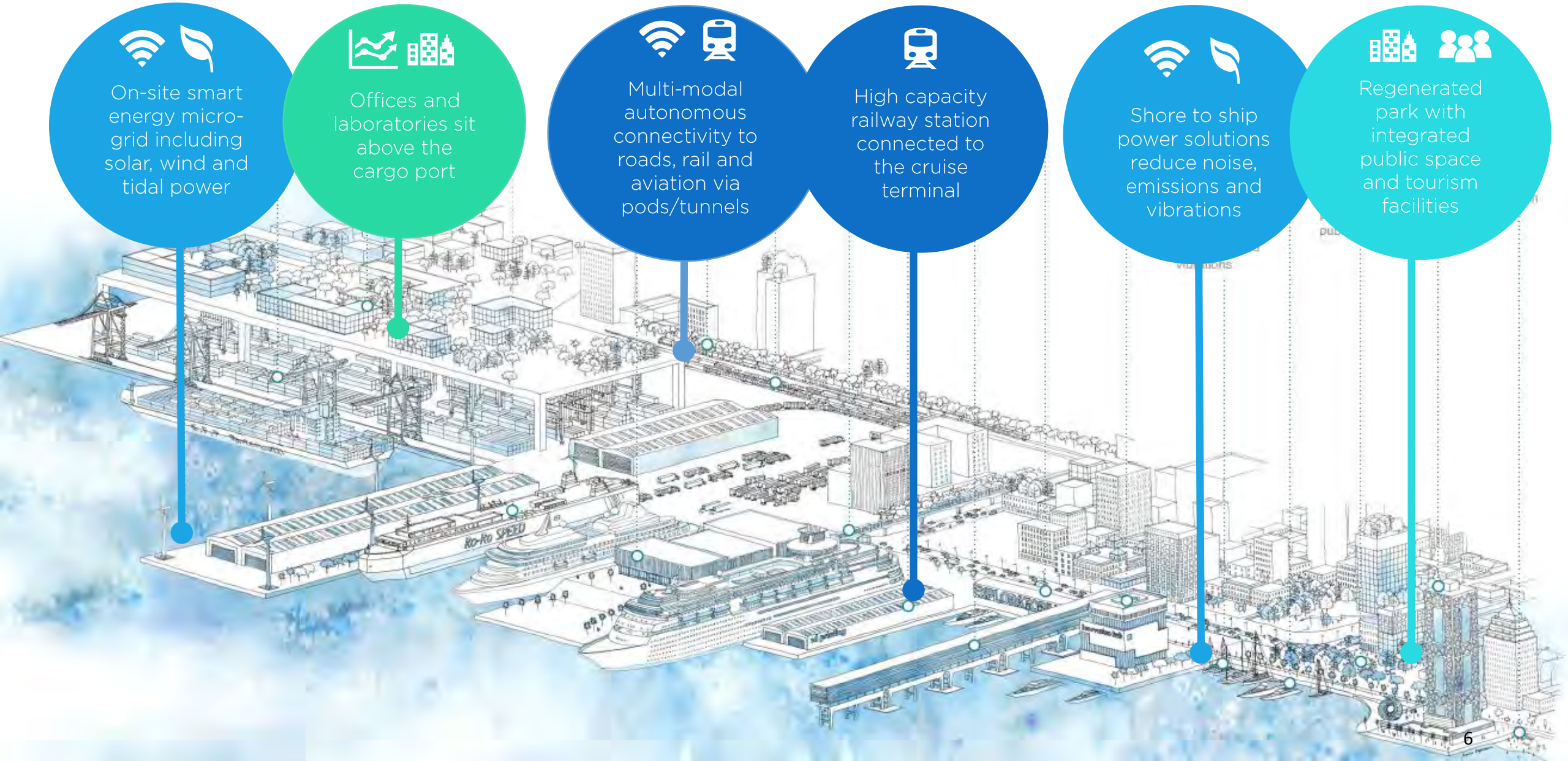
Scenarios

Booming cruise tourism and the intensification of commercial port activities mean that a systematic approach and hi-tech smart solutions are needed to fully exploit secure port land. Yokohama turned its former commercial port, Osanbashi, into a renowned cruise terminal. The new terminal functions within a well-designed public space that is able to accommodate intense passenger fluxes. **How will the ports of the future design their facilities to embrace the concept of living infrastructure rather than focusing purely on logistics or practicality?**



— Photo by David Parker / Alamy Stock photo

A view of what the future could look like ...



Thank you!

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