



Upscaling and large floating developments, sharing initiatives and plans

GCA webinar: Global Knowledge Exchange Event on Floating & Resilient Development, Breakout Room 1

Vicky Lin, Akane Takahashi, Lim Soon Heng, Joanna Pontin



Speakers













- **Fen-Yu (Vicky) Lin**, Project Manager
Blue21
- **Akane Takahashi**, Civil Engineer & Market Researcher
for Floating Projects
Shimizu Corporation
- **Lim Soon Heng**, Founding President
Society of Floating Solutions (Singapore)
- **Joanna Pontin**, Executive Vice President of
Communications,
DST Innovations Ltd



About Blue21

The expertise and capabilities you need to go from dreams to floating projects

- **Expertise:** unique combination of highly specialized engineering, design and realization capabilities
- **Experience:** 15 years of experience and proven track record to move “*from dream to project*”
- **Network:** Partnerships with world leading knowledge institutes, companies and investors (e.g. MARIN, TU Delft, Buxeros Capital, Shimizu, Finest Bay, Indymo, Resilient Rotterdam, Global Center on Adaptation)

 Rutger de Graaf COFOUNDER	 Karina Czaplewska COFOUNDER	 Bart Roeffen COFOUNDER	 Barbara Dal Bo Zanon ARCHITECT AND PROJECT LEADER
 Fen-Yu (Vicky) Lin PROJECT MANAGER	 Rui Gomes MARITIME ENGINEER	 Ana Pereira INDUSTRIAL ENGINEER	 Akane Takahashi CIVIL ENGINEER
 Rui de Lima WATER QUALITY EXPERT - INDYMO	 Floris Boogaard WATER MANAGEMENT PROFESSIONAL - INDYMO	 Peter Ros NON EXECUTIVE FINANCE & ACCOUNTING PROFESSIONAL	 Anna Louka CIVIL ENGINEER



BLUE REVOLUTION THINK TANK

BLUEREVOLUTION.org

Global Challenges for 2050

URBAN: Most cities still need to be built

Today's cities only provide 40% of the space required in 2050



CLIMATE: Projected sea level rise of 30 cm

50% of the global population is living within 100km of the coast



FOOD: Land shortage to feed 10bn

FUTURE LAND SHORTAGE

A growing world population consuming more food and resources, will require additional space to expand cities and produce food. Land shortage seems inevitable, mainly due to agriculture and biofuel demand.

TRENDS AND FACTORS

more people

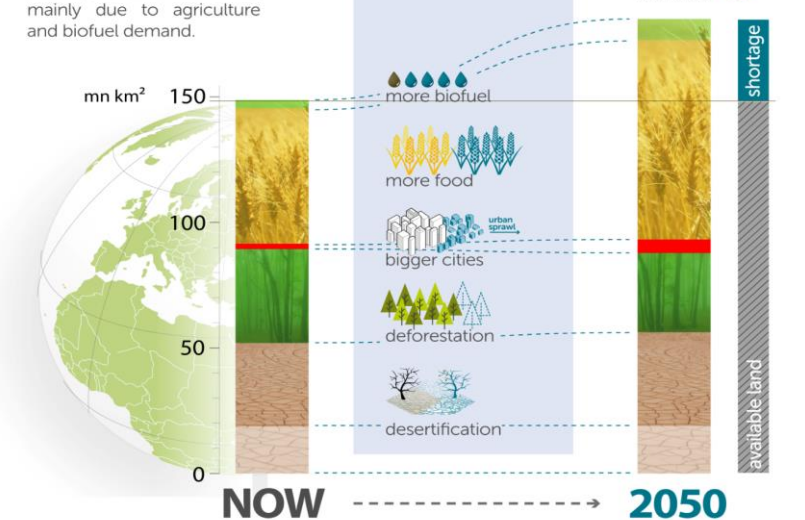


more consumption

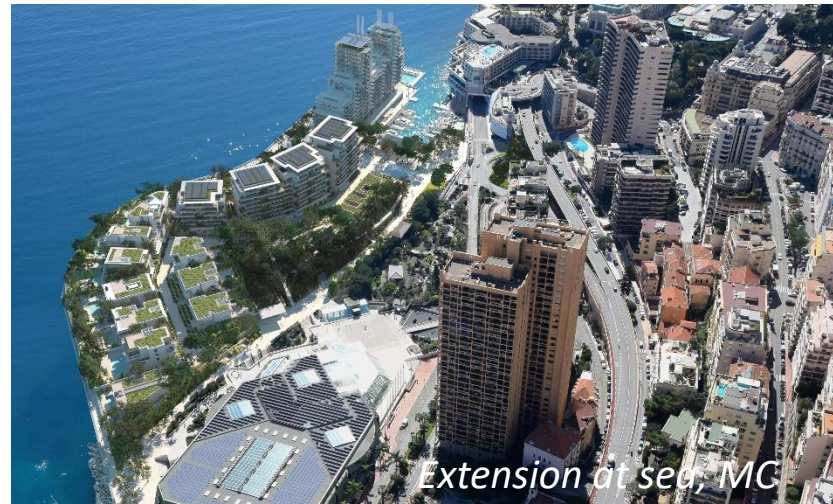


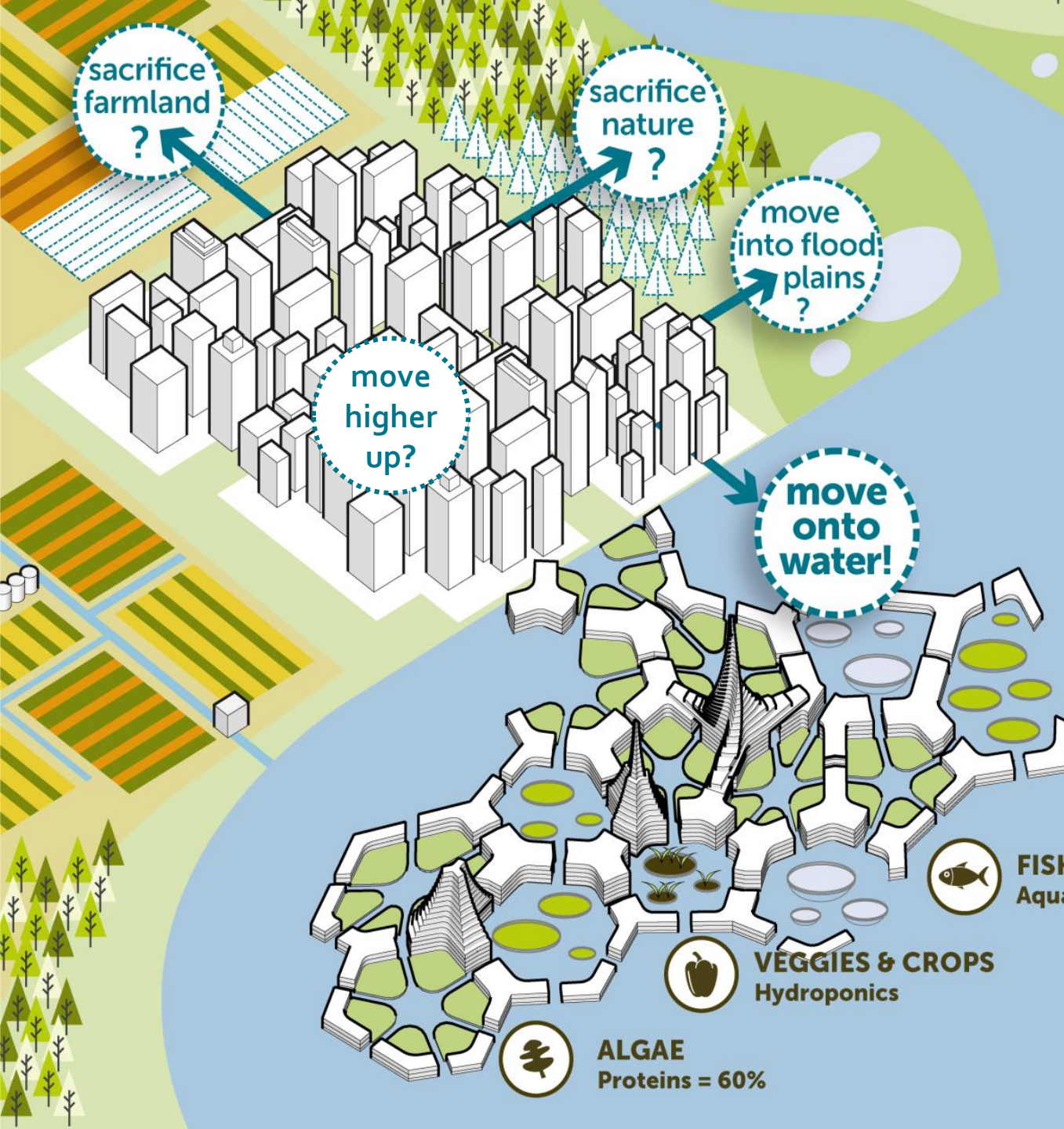
WE WILL BE 22 MILLION sq km SHORT

equal to the area of North America!



Most cities resort to land reclamation...





sacrifice farmland ?

sacrifice nature ?

move into flood plains ?

move higher up?

move onto water!

THE SOLUTION:

CREATING NEW SPACE ON THE WATER



BIOFUEL
Floating algae



FISH & SEAFOOD
Aquaculture



VEGGIES & CROPS
Hydroponics



ALGAE
Proteins = 60%

Floating development vs. Land reclamation



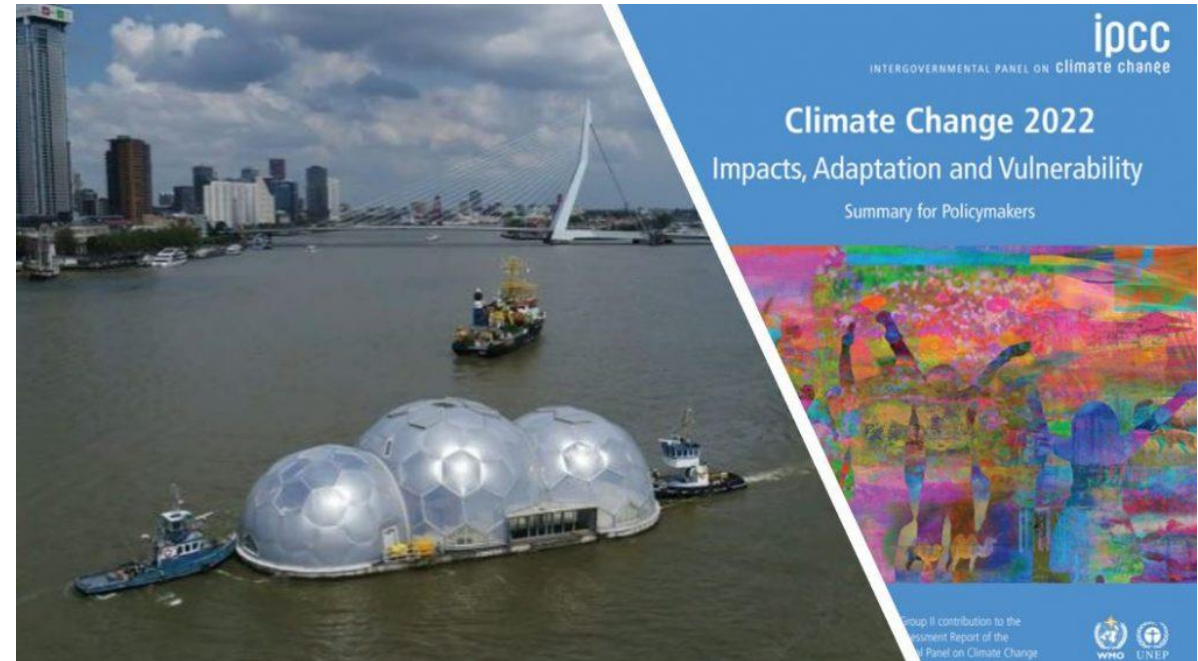
- ✓ Adapts to changing sea level
- ✓ No land fill needed, less disruptive to the environment
- ✓ Possible prefabrication elsewhere with fast deployment
- ✓ Scalable and no time required for stabilization of soil
- ✓ Resistant to earthquakes and tsunamis
- ✓ Ecological habitat creation



- ❑ Dikes needed for sea level rise coastal protection
- ❑ Detrimental impacts on corals and marine life
- ❑ Large scales and long construction period
- ❑ Large capital investment needed to start with
- ❑ Detrimental impacts on corals and marine life
- ❑ Potential dangers of soil liquefaction

The 1st time ever- Floating urban development included in IPCC report

- Cities contain **key opportunities to address climate change and adapt to the impacts.**
- Blue21's Floating Pavilion Rotterdam was mentioned as **'an example of transformative adaptation in urban areas'** in the IPCC report (March, 2022)



To learn more, read the article by B21 co-founder, Dr. Rutger de Graaf, "[How is floating urban development part of the IPCC Report Climate Change 2022: Impacts, Adaptation and Vulnerability?](#)"

HOUSING



floatinghomes.de



Photo credit: George Steinmetz



lifestyle.inquirer.net

REAL ESTATE



TheSeoulGuide.com

hmq.download/video/theseoulguide.html



Renee de Wit



leparisien.fr

ISLANDS



Blue21



Waterstudio



Kleindienst

CITIES



Vincent Callebaut



The Seasteading Institute

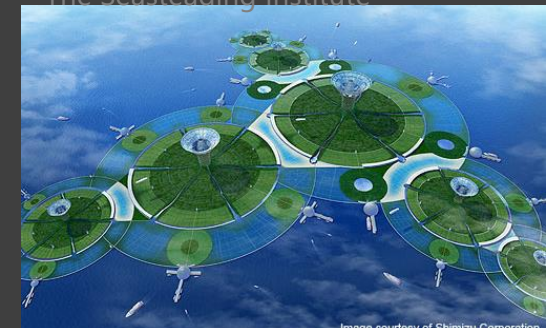


Image courtesy of Shimizu Corporation

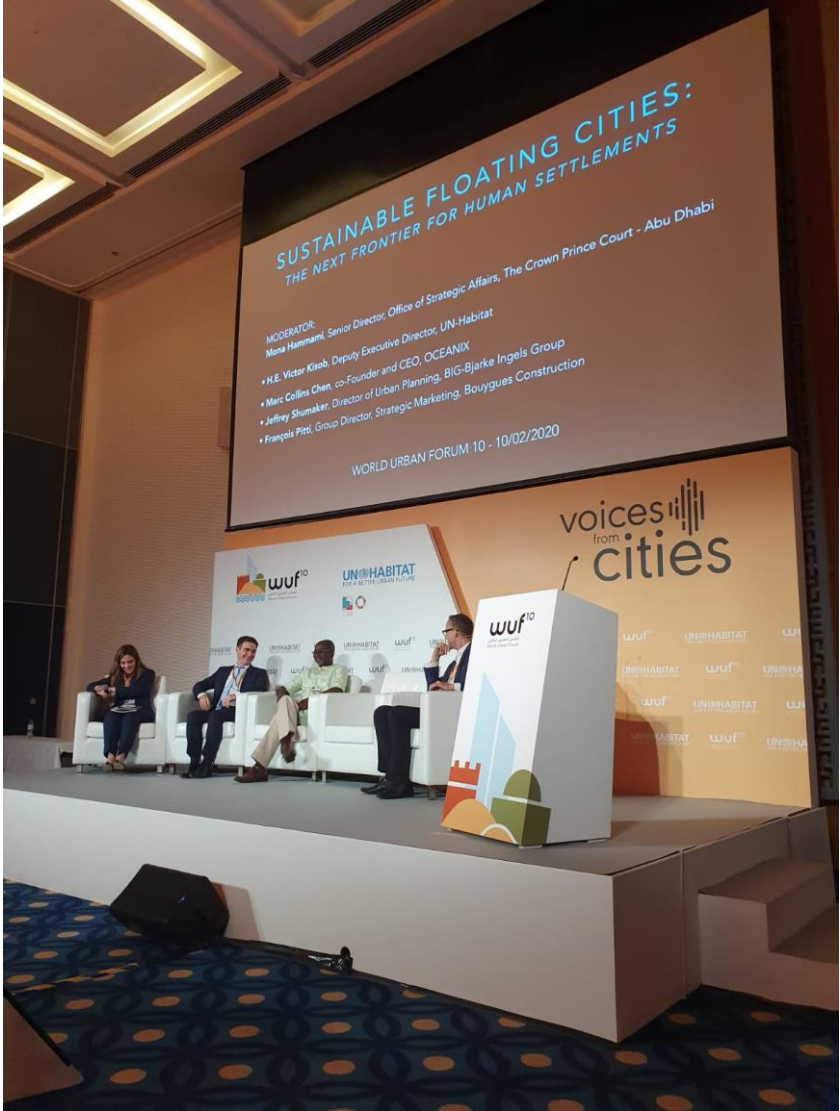
shimz.co.jp/

INLAND
OCEAN

Since 2019 recognized by UN-Habitat



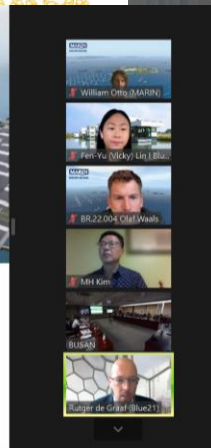
1st ever high-level roundtable discussion on floating cities at UN-HQ (USA) calls for innovation to benefit all, *April 2019*

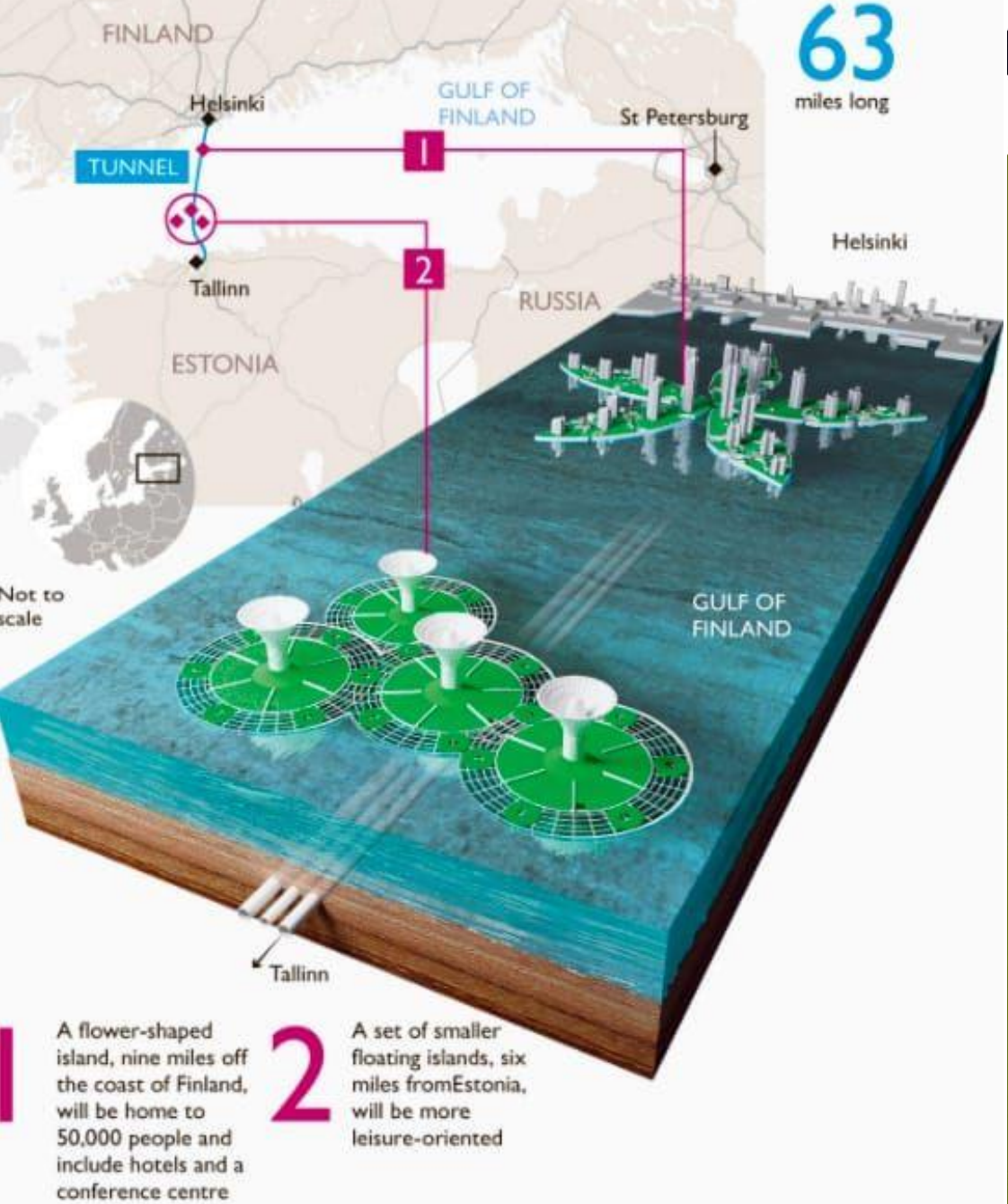


Floating city is **a valid alternative solution** for sustainable development

B21 appointed as a Task Force team member

Realizing the world's first sustainable floating city prototype





1 A flower-shaped island, nine miles off the coast of Finland, will be home to 50,000 people and include hotels and a conference centre

2 A set of smaller floating islands, six miles from Estonia, will be more leisure-oriented

Graphic: The Times and The Sunday Times

WORLD AT FIVE

Angry Birds entrepreneur Peter Vesterbacka hatches plan for £13bn tunnel

A proposed undersea rail link between Finland and Estonia will be the longest in the world — and will include 'leisure archipelagos' housing 50,000 people

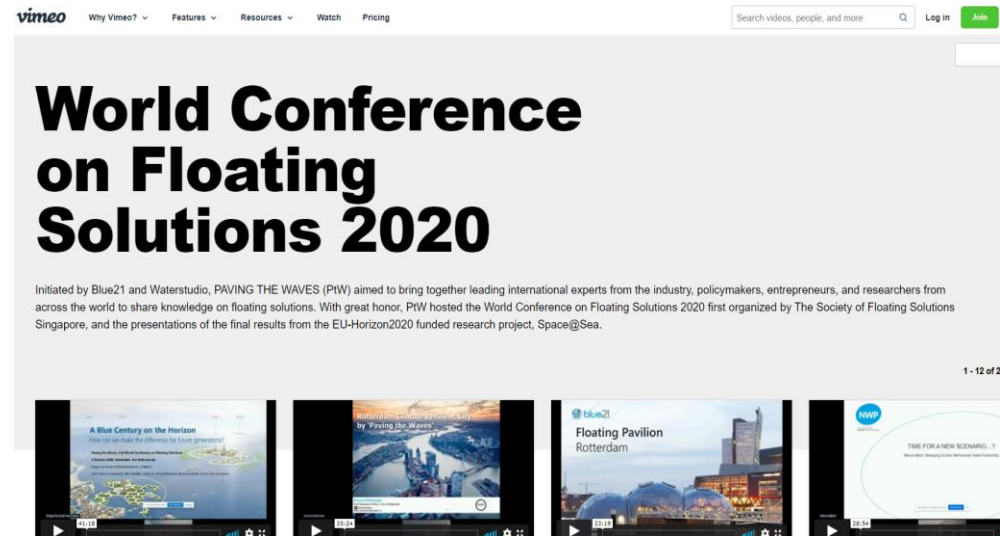


The world's largest open access database on floating

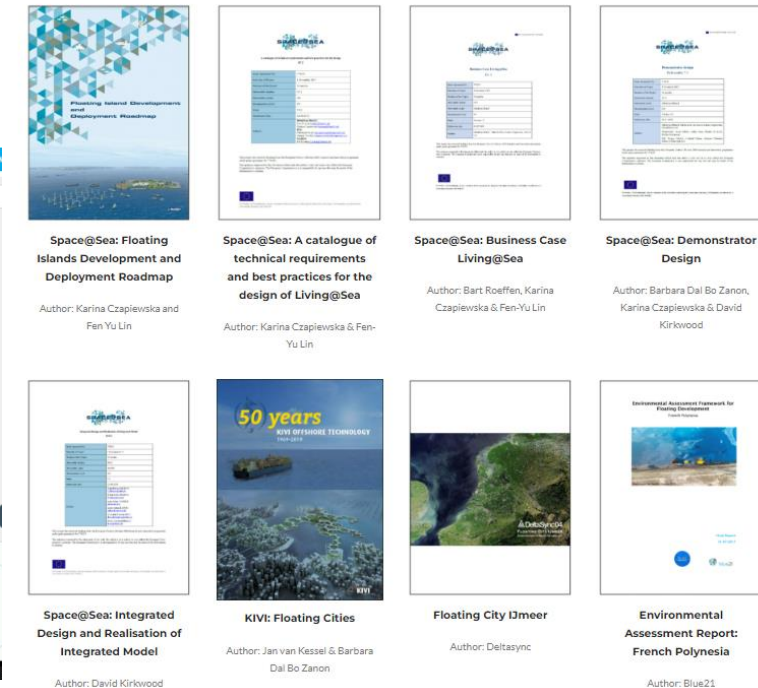


- **Paving the Waves- World Conference on Floating Solutions**
<https://www.pavingthewaves.org/>
- **Blue Revolution Foundation**
<https://vimeo.com/showcase/7861242>
- **Blue21 open access database**
www.blue21.nl/about/knowledge-base/

Sponsors & Supporters



Reports & Books



2020

2030

2040

2050





Our future is on the water

<https://www.blue21.nl/>

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