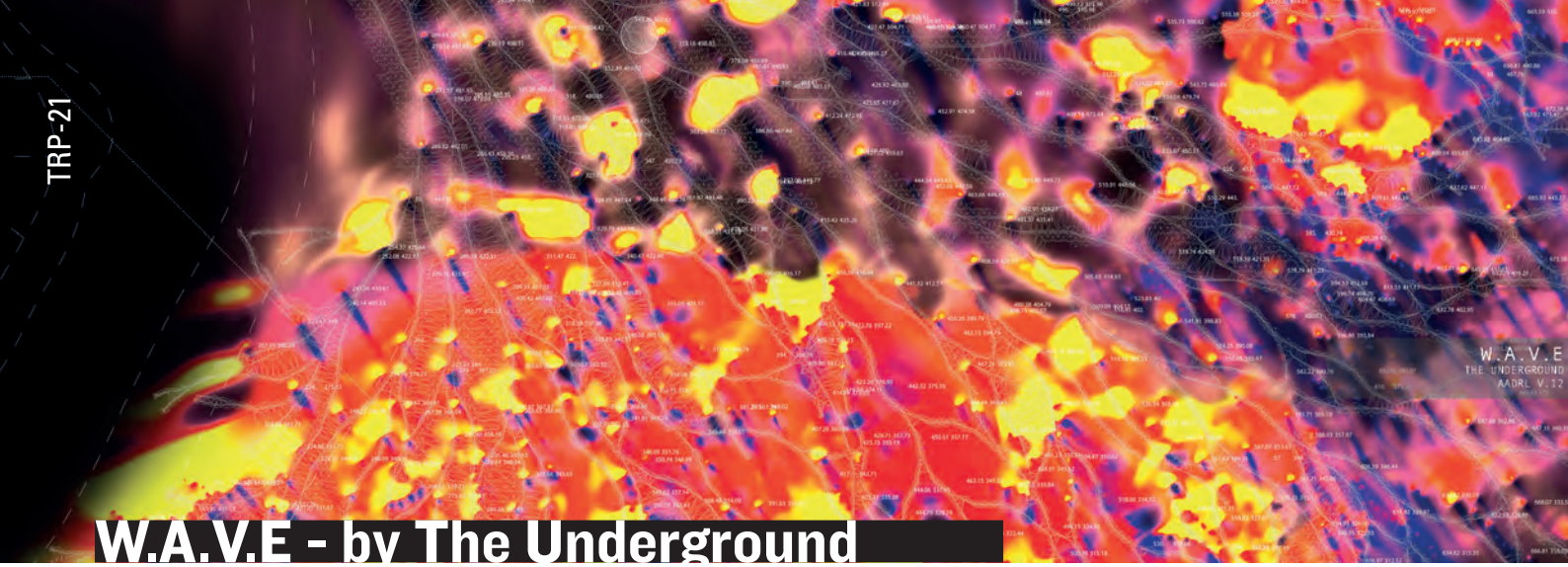


W.A.V.E - by The Underground

AADRL 2010

W.A.V.E by The Underground.
Pebyloka Pratama, Ardes Perdhana,
Akif Cinar & Muhammed Shameel

Por **Pebyloka Pratama, Ardes Perdhana,**
Akif Cinar & Muhammed Shameel
The Underground.
AADRL 2010.

W.A.V.E is a hydro-dynamic landscape structure, an 'Eco Park' - that attempts to sustain the depleting coastline through the natural sedimentation process. The project site of the experimental design is along the mudflat zones of the Thames estuary in the UK. Taking advantage of the diverse ecosystem that thrives around such estuaries, terraforming is achieved by the increasing the process of sedimentation of the silt that is brought down by the tributary rivers. Estuaries are also regions where freshwater meet the saltwater. W.A.V.E uses this opportunity for its energy sustenance through the reverse osmosis energy technique. Terraforming is also enabled due to the significant tidal influence.

The project adopts two streams of algorithmic systems – L-system and geometric subdivision that work symbiotically to determine the strategic deployment of the structure around the eco-sensitive zone of the estuary. While the L-system is used as the primary system that responds to the geological and access conditions, the Penrose subdivision algorithm is used to give a surface skin for the building envelope.

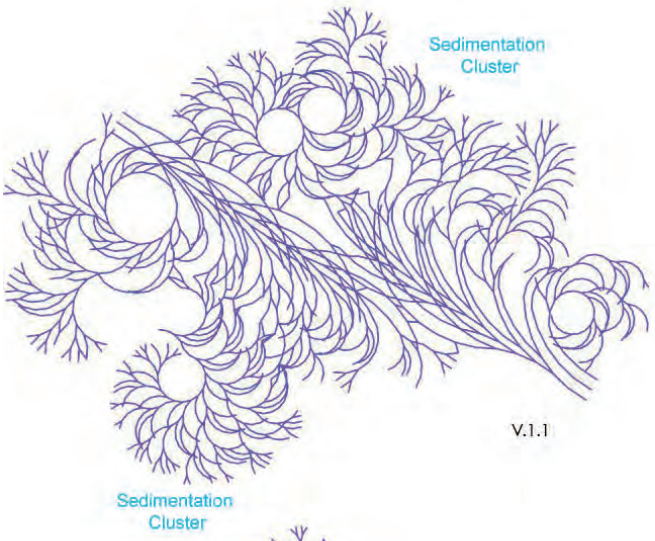
The Eco-park comprises of observation decks, research labs, energy hubs and landscaped zones.

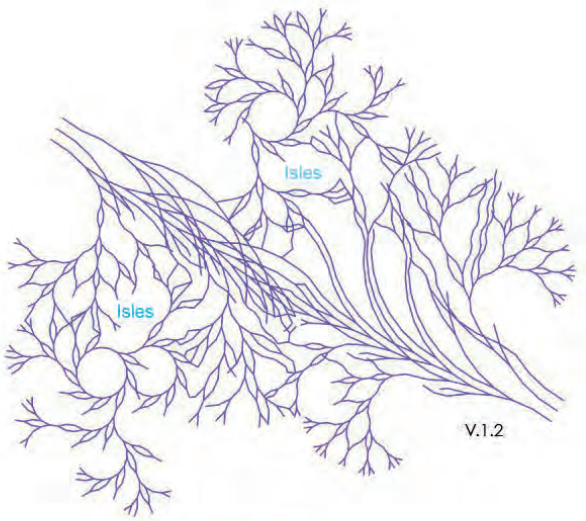
SHAMEEL MUHAMMED
Assistant Professor
Heriot Watt University - Dubai

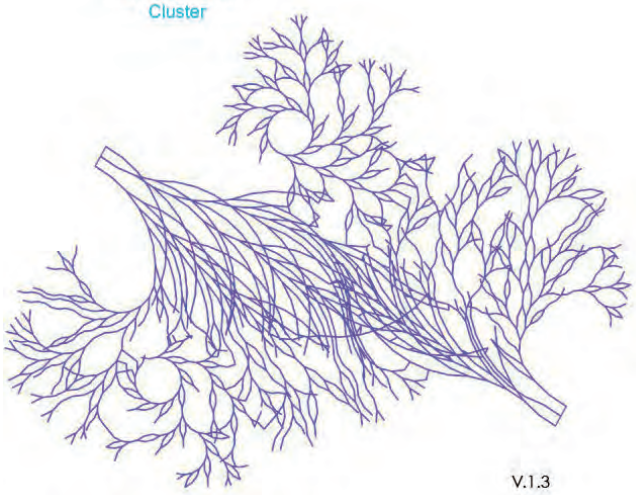
Shameel Muhammed is an architect and an educator with a research focus on digital fabrication and robotic construction. He holds an M.Arch degree in Architecture and Urbanism from the Design Research Laboratory of AA School of Architecture, London. His work experience spans several practices from the UK, UAE and India, including Zaha Hadid Architects – London.

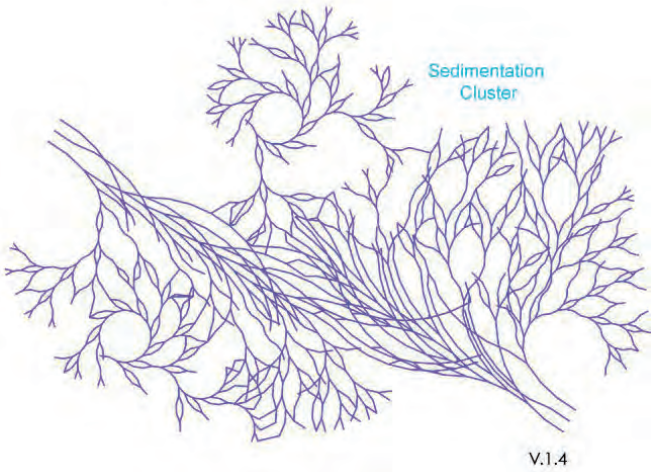
Shameel has extensive experience in academia. He has been associated with various design workshops, both at regional and at international platforms such as AAVS DXB 'Expo City' - Dubai and 'Future Earthen Shells' at Boisbuchet – France. His works have been exhibited at various forums in the Middle East and UK.

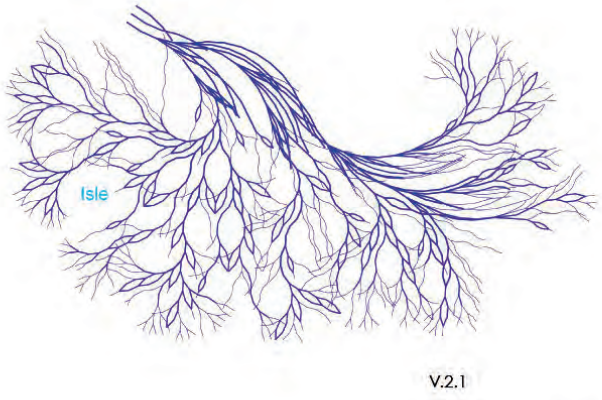
Currently, Shameel is teaching at Heriot-Watt University Dubai where he is leading the second year architecture program.

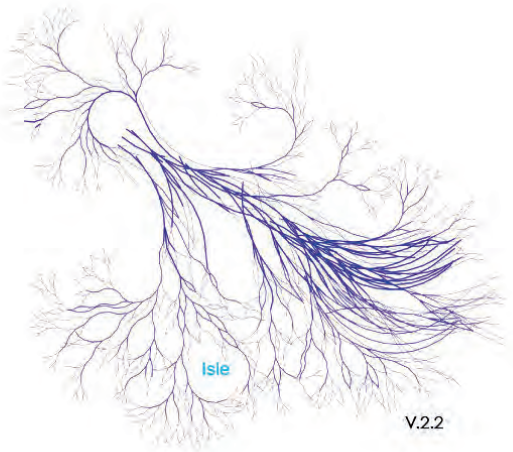


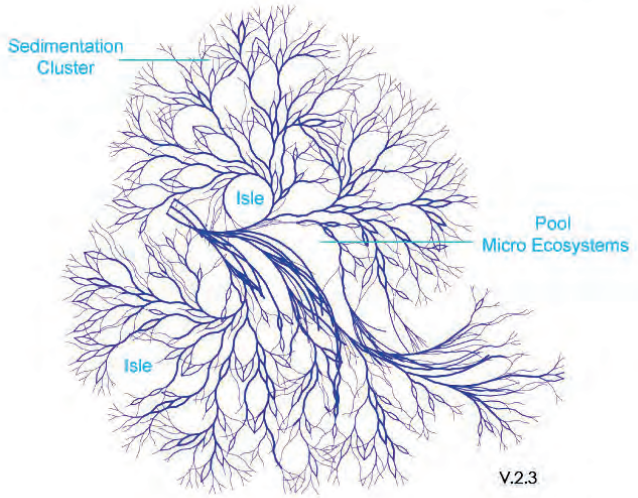












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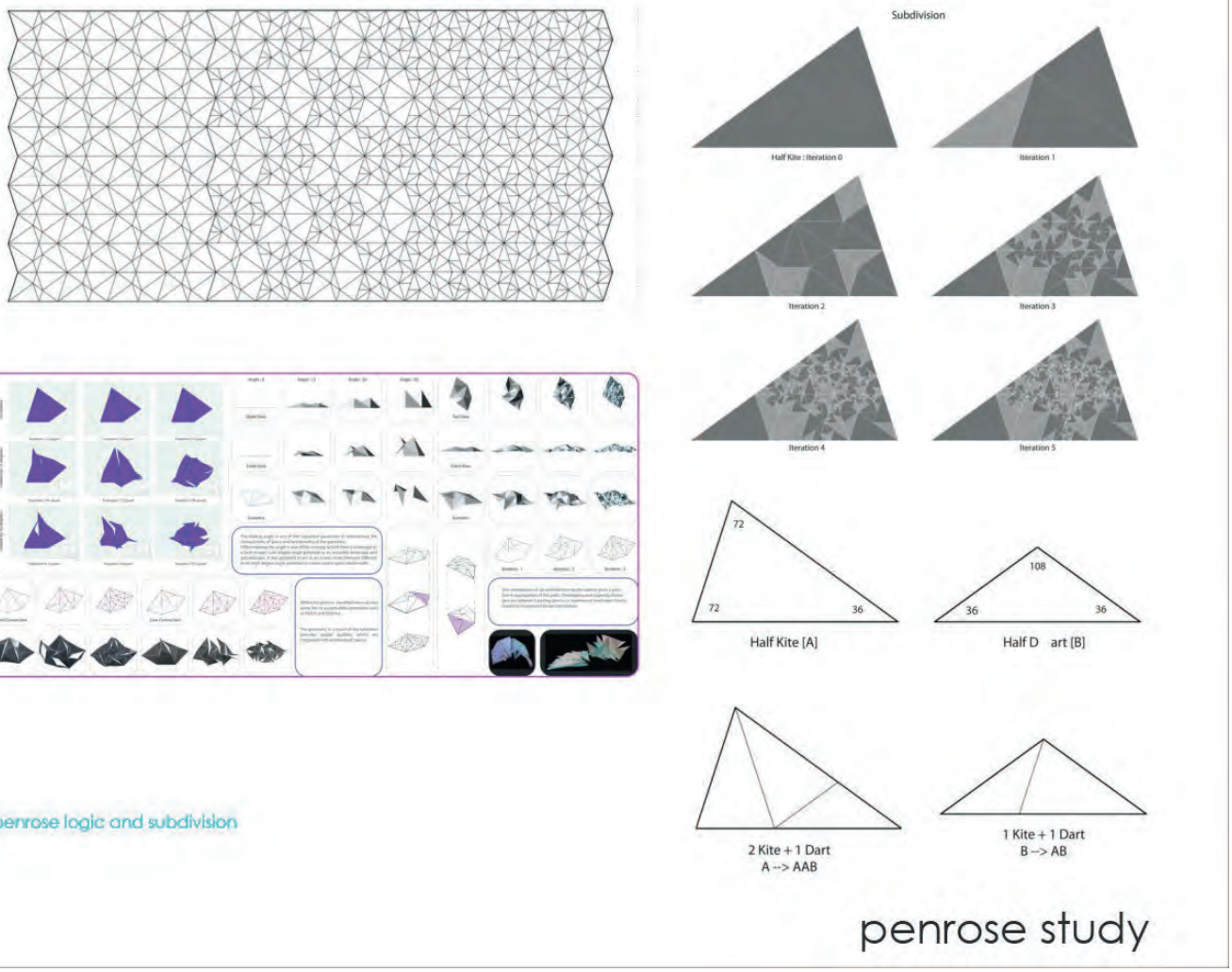

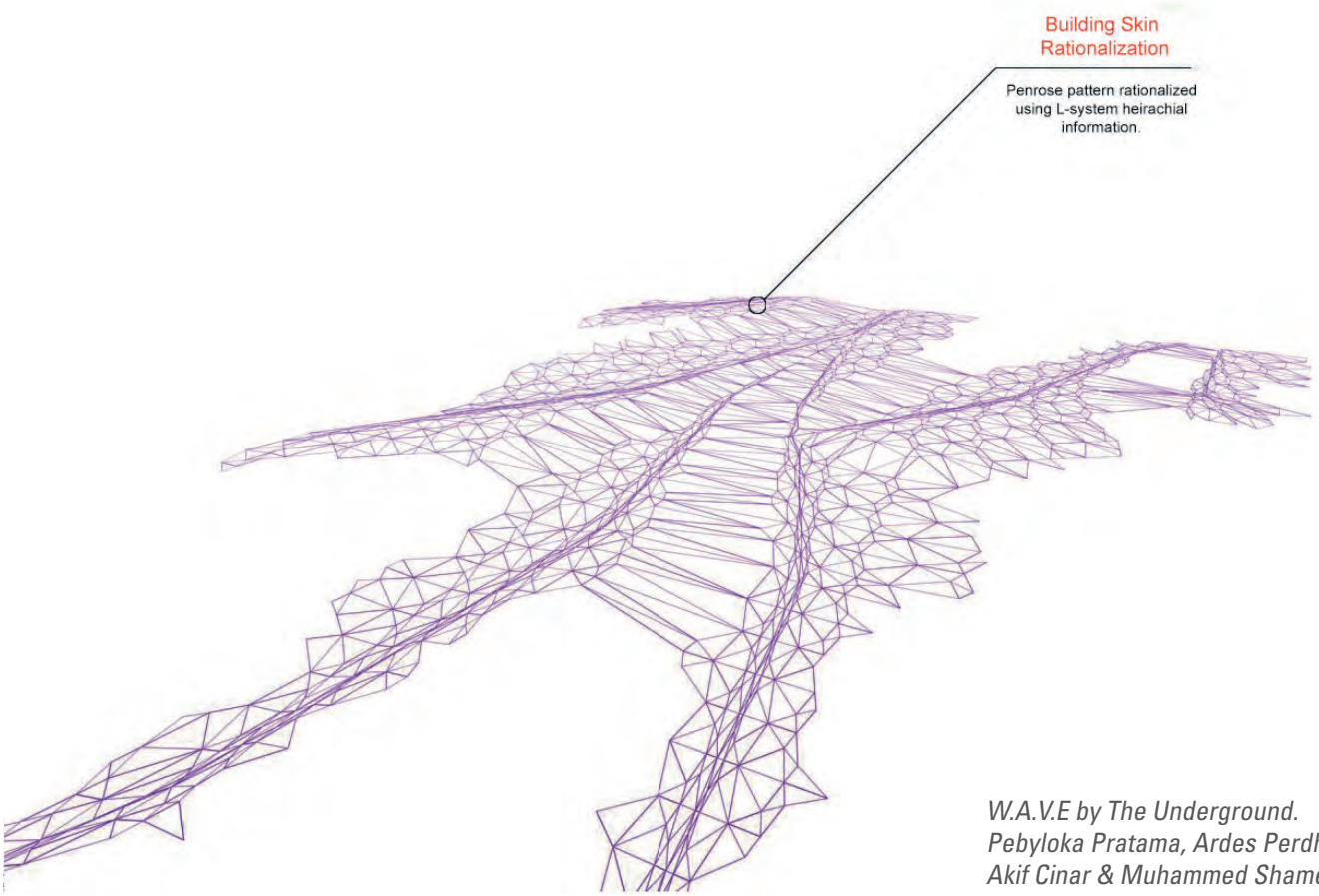

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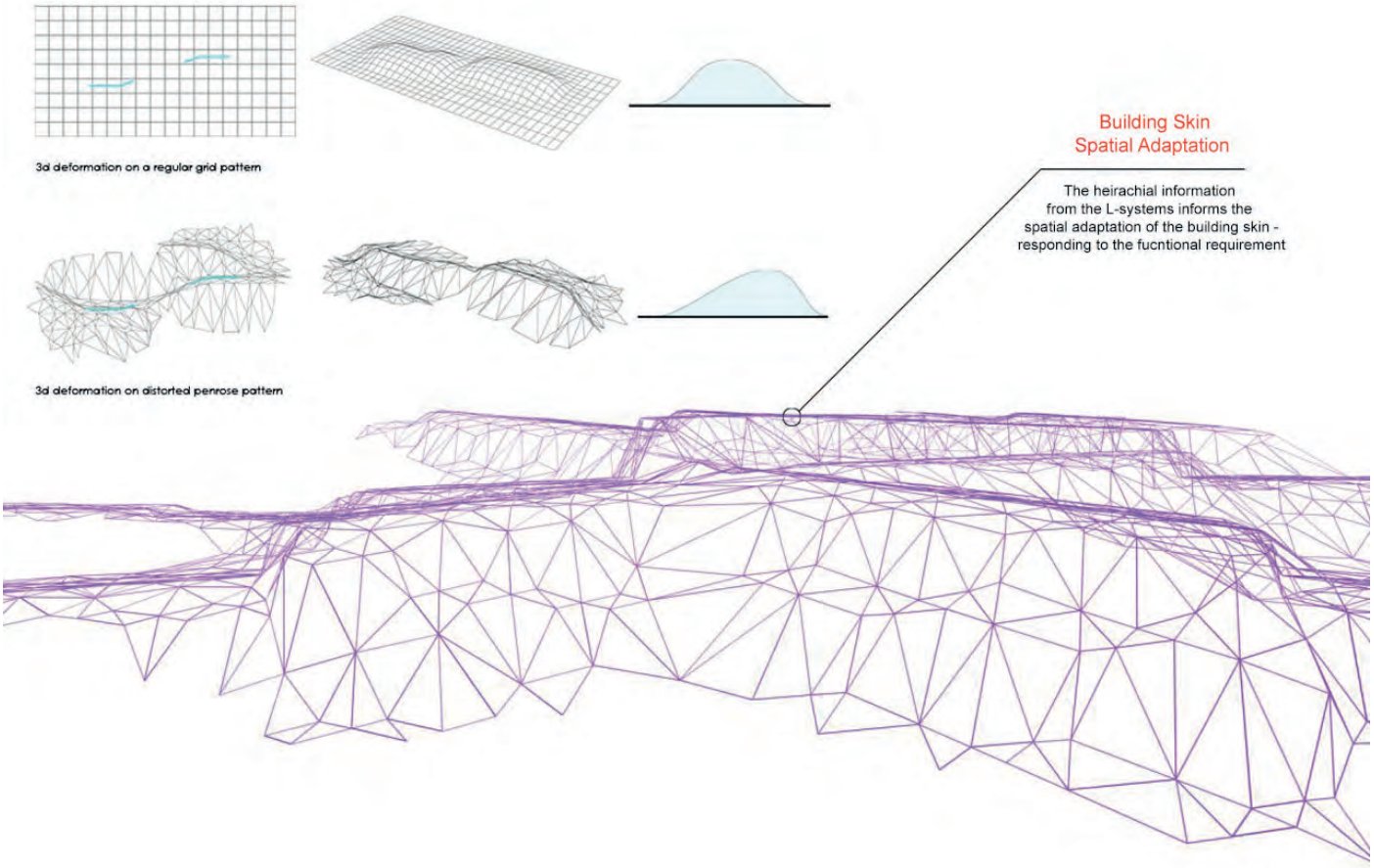

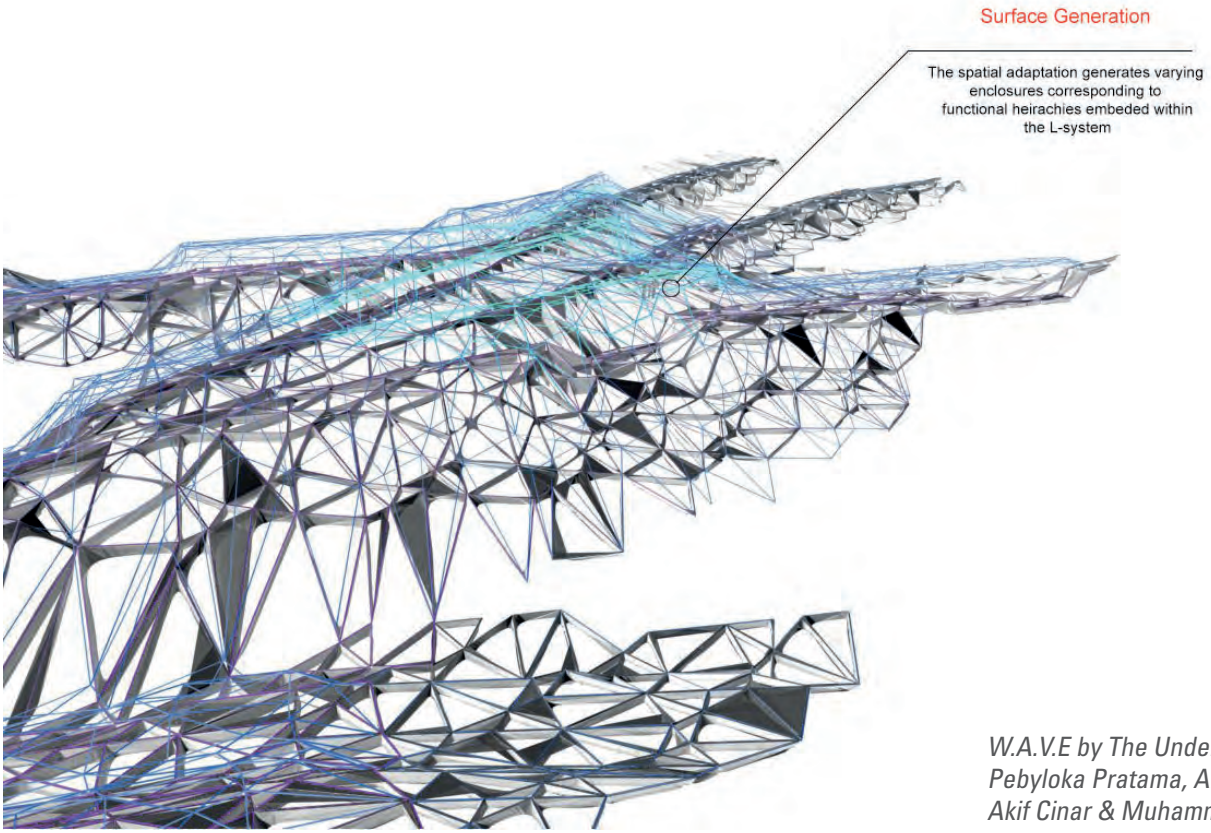

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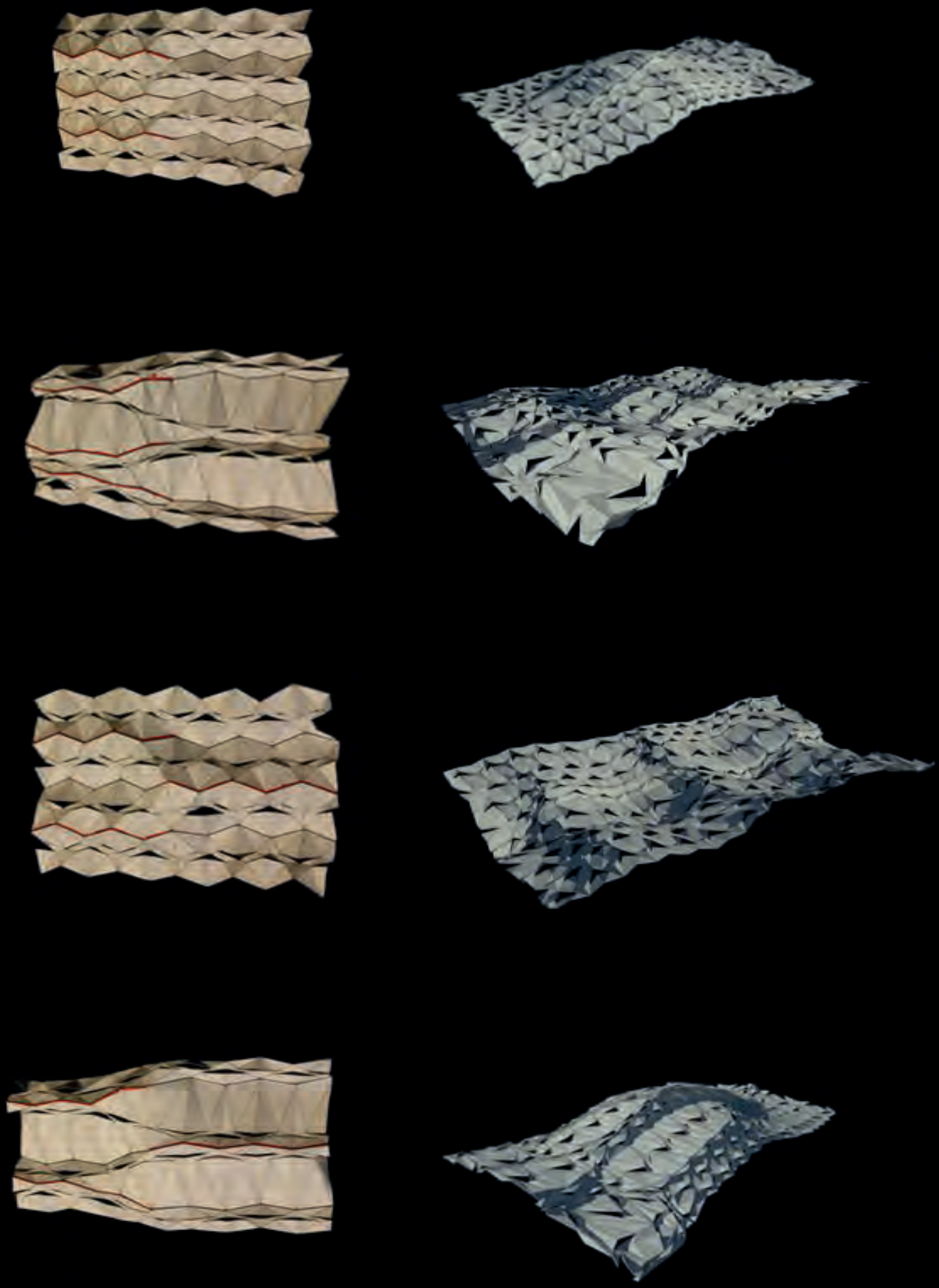
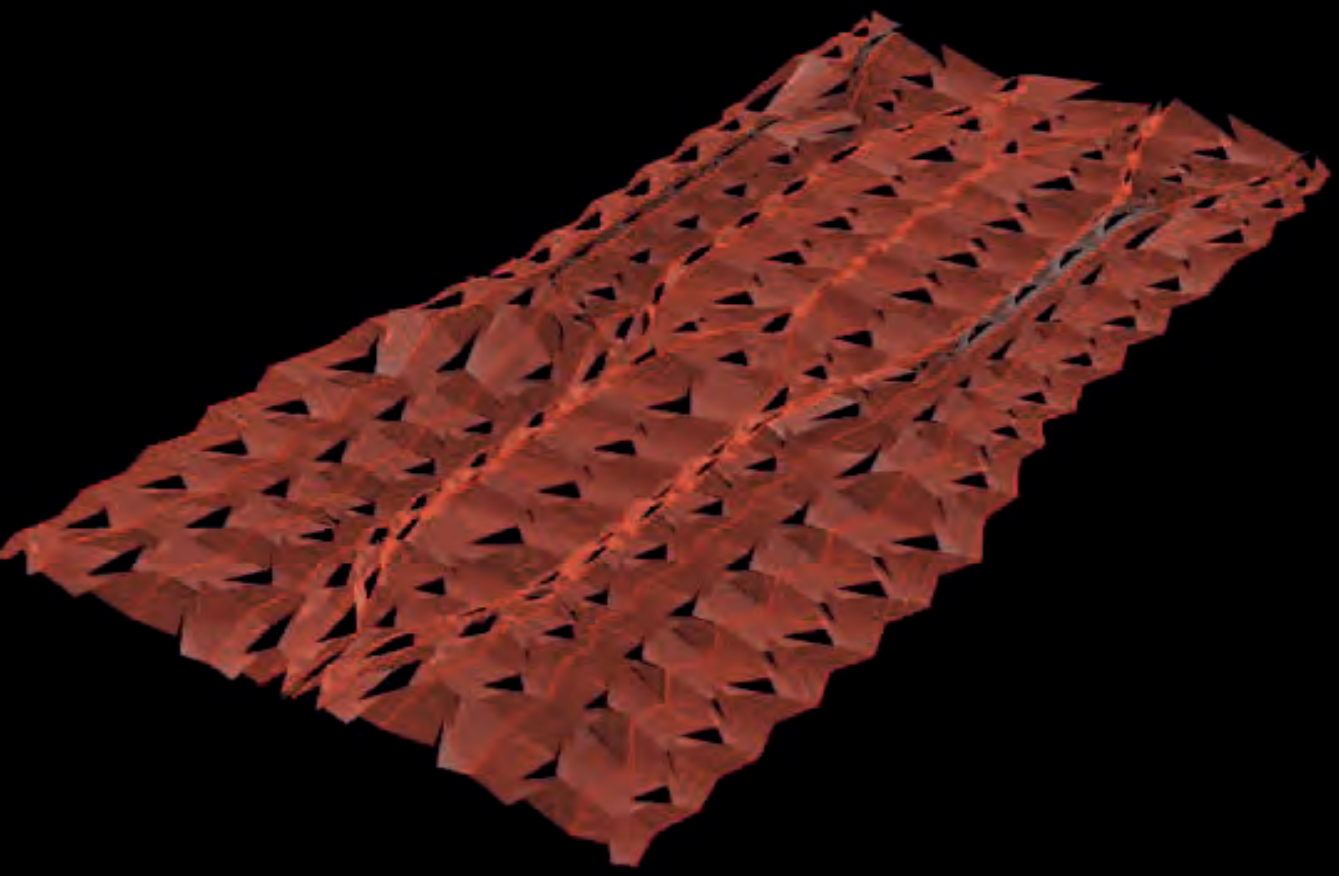


Paper model studies

Surface transformation digital simulation



Spatial Envelope :
Penrose subdivision + L Ssytem

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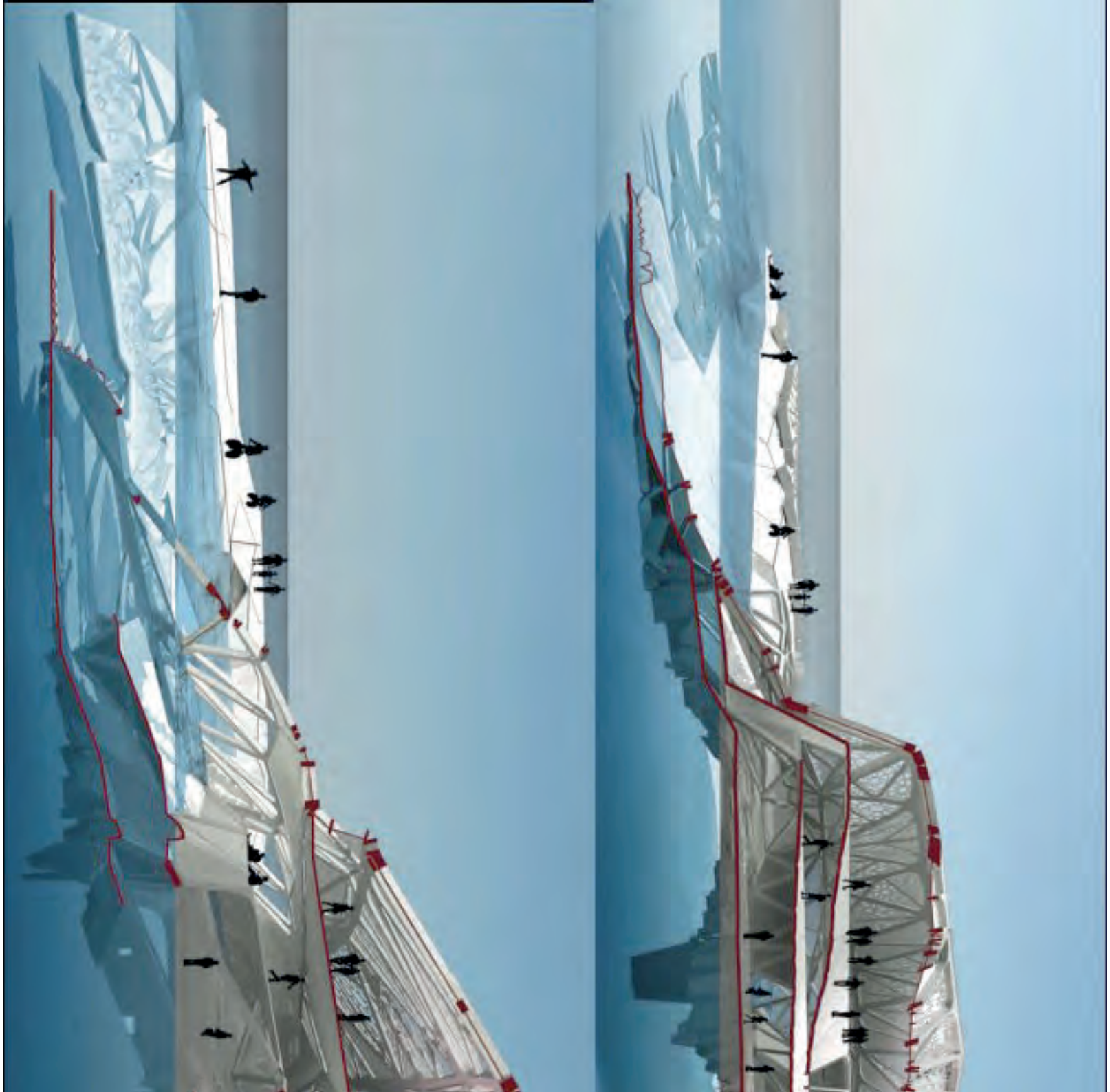

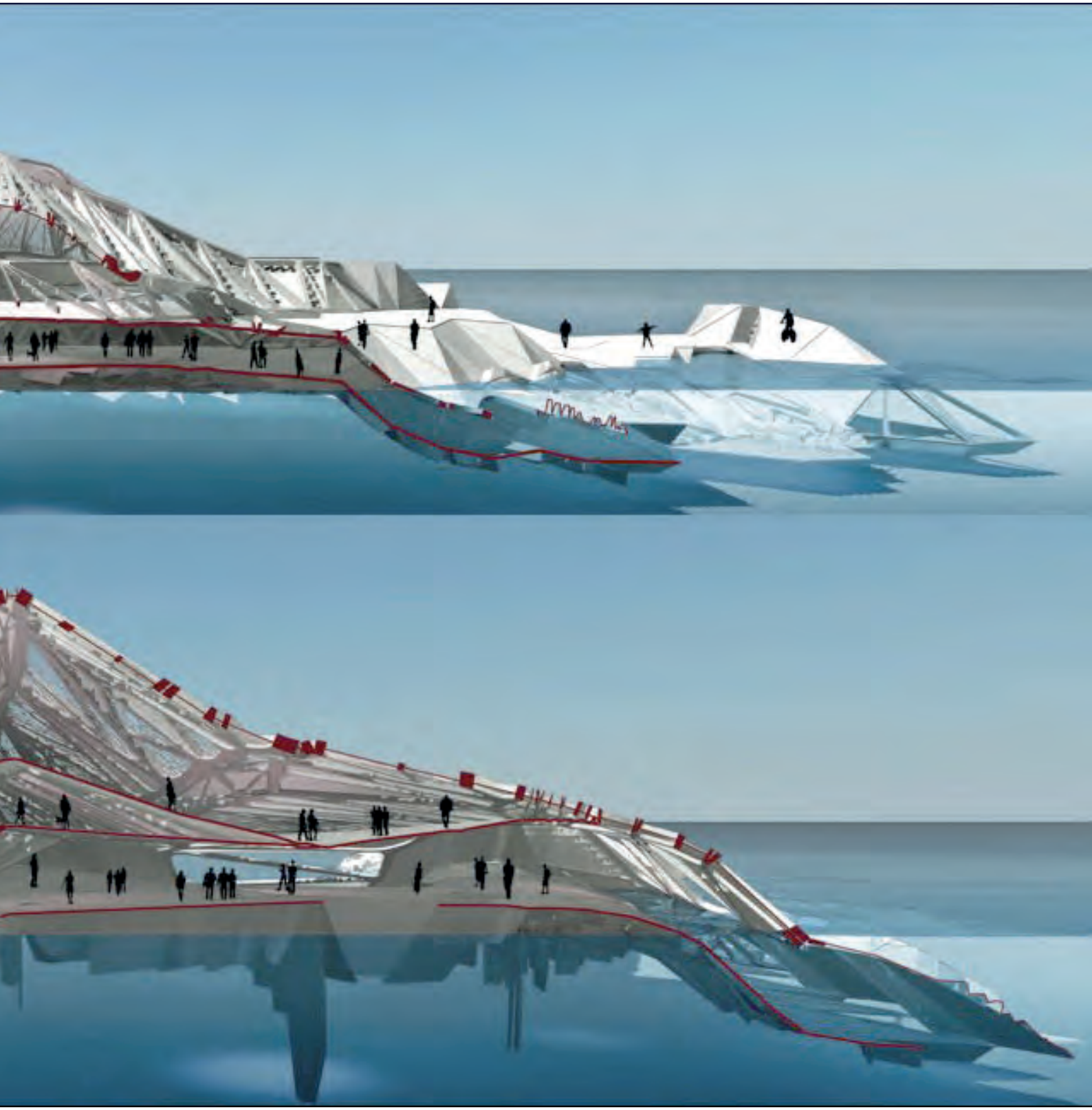

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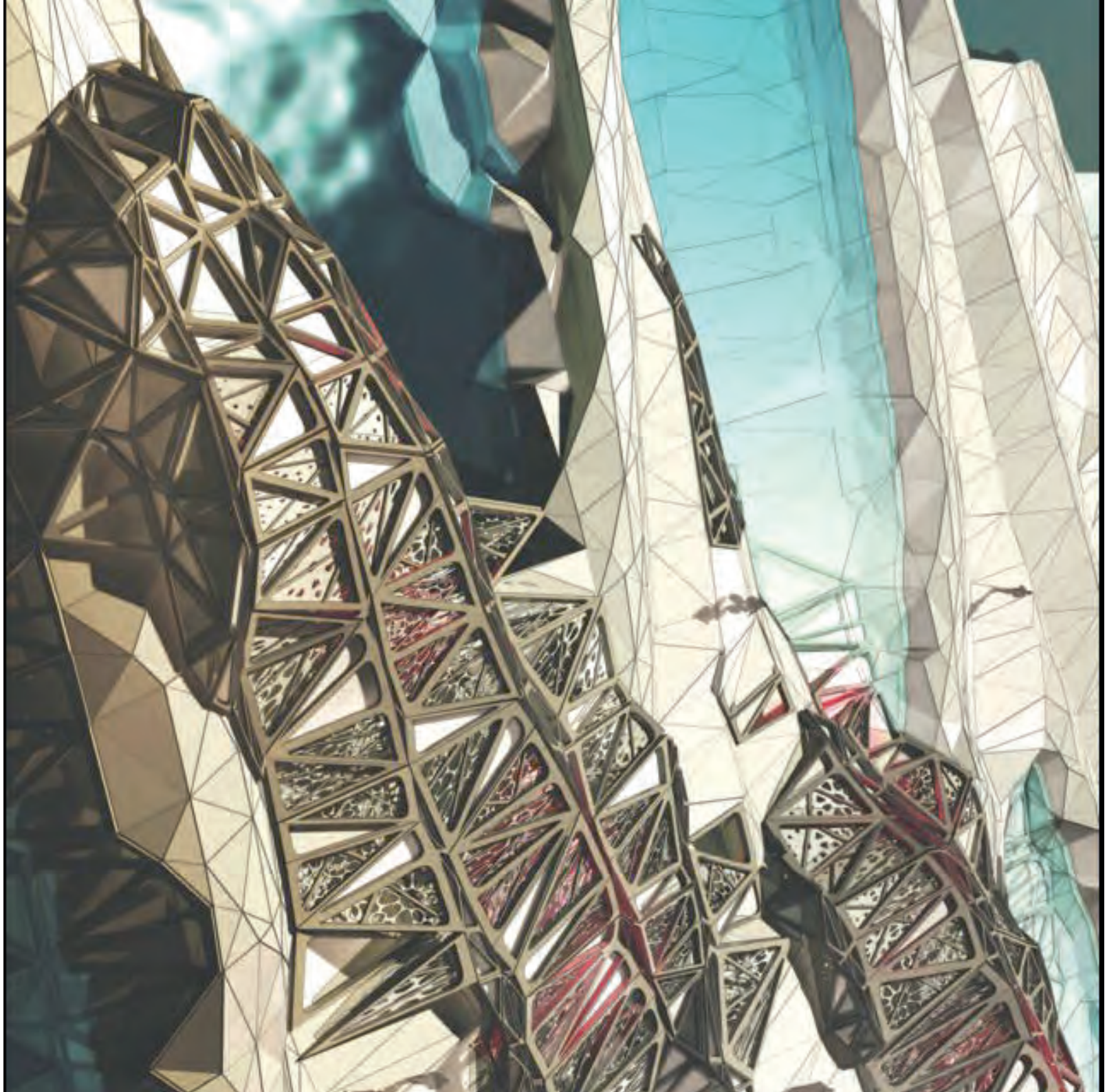

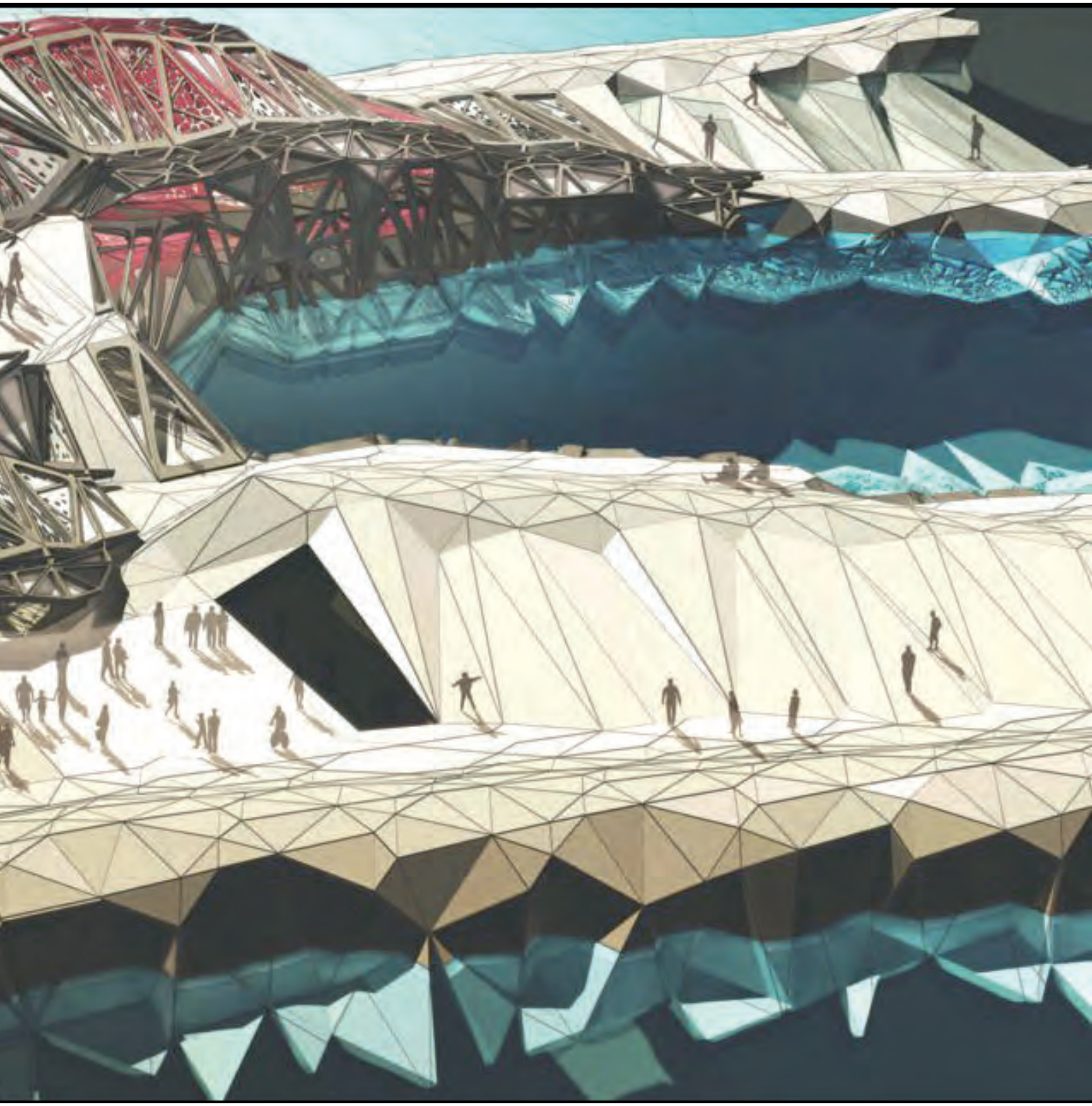

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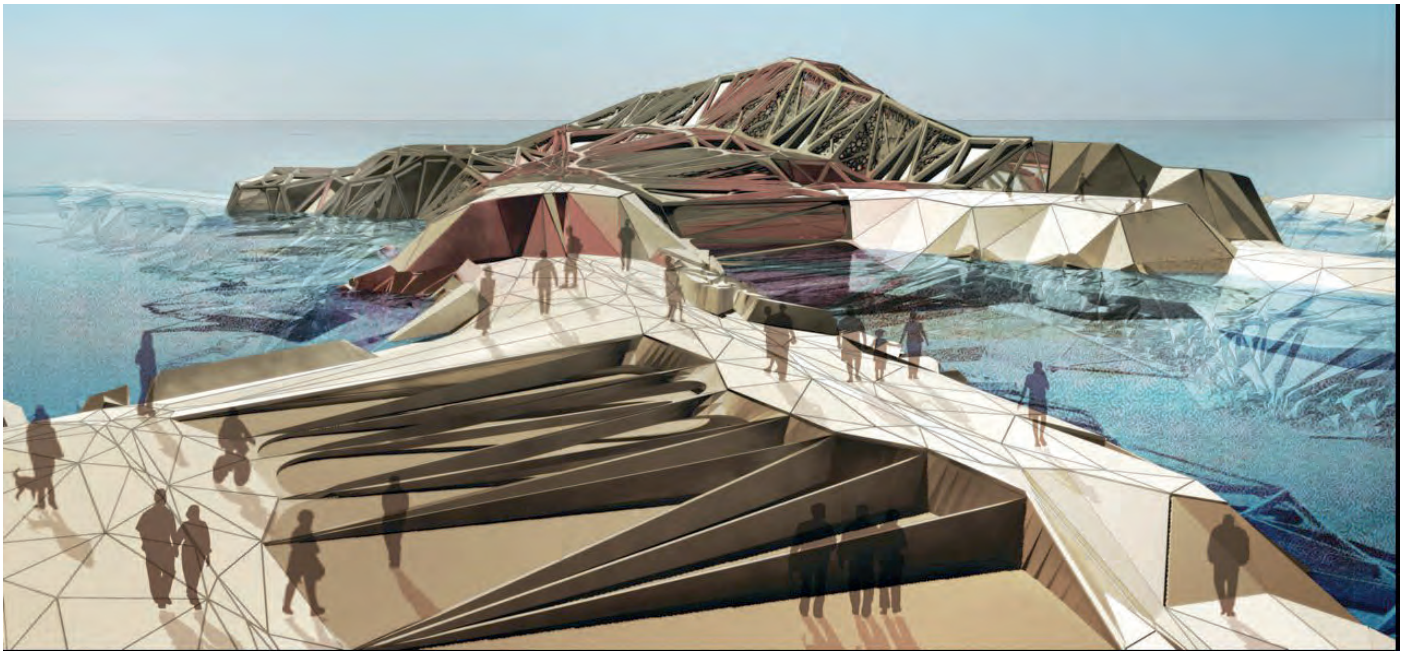
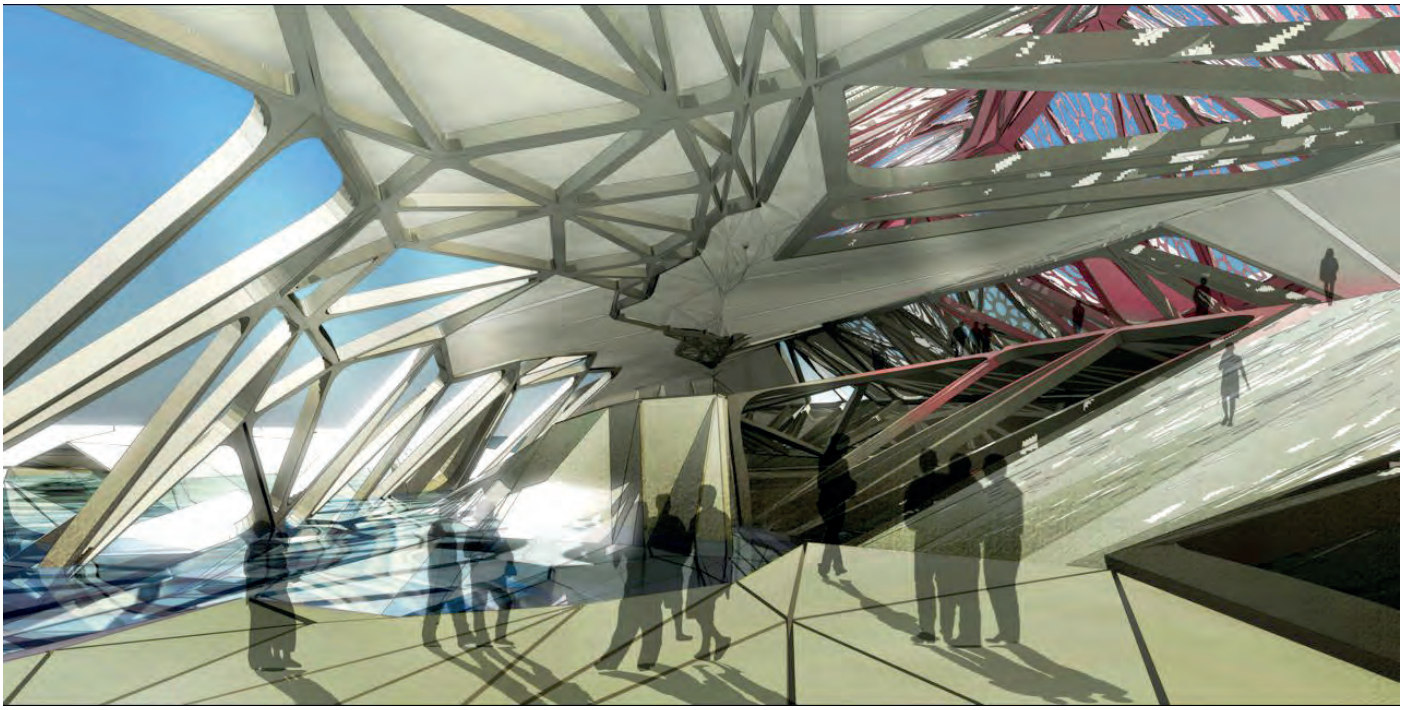
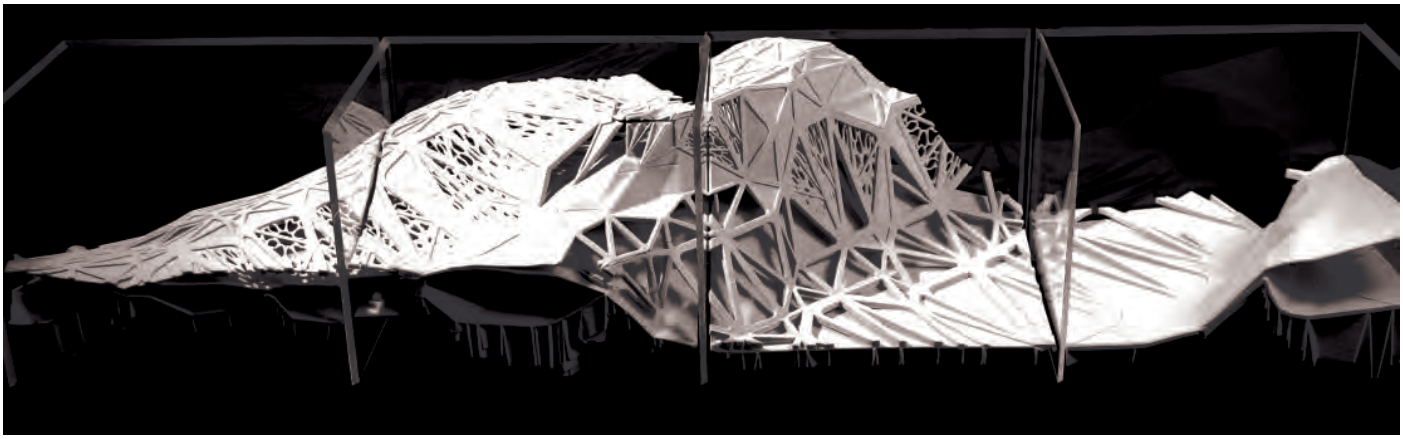




W.A.V.E es una estructura de paisaje hidrodinámico, un "Ecoparque", que intenta sostener la costa en agotamiento a través del proceso de sedimentación natural. El sitio del proyecto del diseño experimental se encuentra a lo largo de las zonas de marismas del estuario del Támesis en el Reino Unido. Aprovechando el ecosistema diverso que prospera alrededor de dichos estuarios, la terraformación se logra aumentando el proceso de sedimentación del limo que es arrastrado por los ríos tributarios. Los estuarios también son regiones donde el agua dulce se encuentra con el agua salada. W.A.V.E aprovecha esta oportunidad para su sustento energético a través de la técnica de energía de ósmosis inversa. La terraformación también está habilitada debido a la importante influencia de las mareas.

El proyecto adopta dos corrientes de sistemas algorítmicos: el sistema L y la subdivisión geométrica que funcionan simbióticamente para determinar el despliegue estratégico de la estructura alrededor de la zona eco-sensible del estuario. Mientras que el sistema L se utiliza como sistema principal que responde a las condiciones geológicas y de acceso, el algoritmo de subdivisión de Penrose se utiliza para dar una capa superficial a la envolvente del edificio.

El Ecoparque se compone de plataformas de observación, laboratorios de investigación, centros de energía y zonas ajardinadas.



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SHAMEEL MUHAMMED
Profesor asistente
Universidad Heriot Watt - Dubái

Shameel Muhammed es arquitecto y educador con un enfoque de investigación en fabricación digital y construcción robótica. Tiene una maestría en Arquitectura y Urbanismo del Laboratorio de Investigación de Diseño de la AA School of Architecture, Londres. Su experiencia laboral abarca varias prácticas en el Reino Unido, los Emiratos Árabes Unidos y la India, incluida Zaha Hadid Architects - Londres.

Shameel tiene una amplia experiencia en el mundo académico. Ha estado asociado con varios talleres de diseño, tanto en plataformas regionales como internacionales como AAVS DXB "Expo City" - Dubai y "Future Earthen Shells" en Boisbuchet - Francia. Sus obras se han expuesto en varios foros en Oriente Medio y Reino Unido.

Actualmente, Shameel enseña en la Universidad Heriot-Watt de Dubai, donde dirige el programa de arquitectura de segundo año.

TRP-21

MODELOS PARAMÉTRICOS **DIGITALES**