



National Pavilion UAE at the Biennale Architettura 2021 continues research into sustainable cement inspired by local ecology and created from industrial brine

- *Architects and curators Wael Al Awar and Kenichi Teramoto are experimenting with an environmentally friendly cement alternative inspired by crystallisation in the UAE's sabkha (salt flats) and made from salt extracted from industrial brine waste*
- *An accompanying publication written by Rashid and Ahmed bin Shabib will explore sabkhas' essential ecological and cultural value*

27 January 2021, United Arab Emirates: For its tenth participation in the International Exhibitions of Art and Architecture organized by La Biennale di Venezia (Venice Biennale), the National Pavilion of the United Arab Emirates is conducting groundbreaking research into an environmentally-friendly cement alternative inspired by the UAE's sabkha (salt flats) and created from salts and minerals extracted from waste brine left over from water desalination.

The production of traditional cement generates 8% of the world's CO² emissions, while brine, highly-saturated saltwater left over from industrial desalination, is often poured back into the oceans with significant impact on marine life and ecosystems. In keeping with the Biennale's overall theme *How Will We Live Together*, the UAE's curators Wael Al Awar and Kenichi Teramoto are researching a solution addressing both these harmful environmental issues: an MgO-based alternative cement created from recycled waste brine.

This strong, insoluble building material was inspired by the crystallized salts and minerals found in the UAE's Sabkhas (salt flats), which have been tentatively listed as a UNESCO World Heritage Site, meaning that the exhibition explores the intersection of an ancient ecological treasure and innovative sustainability research. Visitors can currently visit the Wetland research lab at Alserkal Avenue to see samples of sabkhas, images and material experiments as the curators continue their research in partnership with specialist teams at the Amber Lab at NYU Abu Dhabi, the American University of Sharjah and the University of Tokyo.

The project will be supplemented by a book titled *The Anatomy of Sabkhas*, written by urban researchers Rashid and Ahmed bin Shabib, expected to be released in May. The book will explore the ecological and socio-economical significance of these natural phenomena in detail based on case studies, personal essays, and photography. A supplementary volume edited and written by Aga Khan Award-winning architect Marina Tabassum will detail the journey of Wael and Teramoto's research for the Wetland exhibition.

Laila Binbrek, Coordinating Director, National Pavilion UAE – La Biennale di Venezia said: "The National Pavilion UAE provides a high-profile platform for curatorial and research concepts that

address international conversations from a distinctive local perspective. Wetland and the accompanying research put the UAE at the heart of a vital global dialogue about the future of architecture and its impact on climate change and our natural resources.”

Wael Al Awar and Kenichi Teramoto said: “The structure of the UAE’s natural sabkhas offers ecological insight into the world’s most vital challenge: climate change. In researching ways to address the irreversible impact of industrial construction and desalination, we have aimed to bring vernacular architecture into the 21st century by creating a sustainable material that could recycle industrial waste and reduce the world’s reliance on Portland cement. Our work with the National Pavilion UAE has provided us with the resources to experiment with this vision through a collaborative process, enabling us to develop a proof of concept showing that locally-sourced salt-based cement is a viable, scalable alternative.”

Ahmed and Rashid bin Shabib said: “As renewable energy, climate change and sustainability become the most urgent cause of our generation, we must turn to the natural world for answers. One square meter of sabkha can sequester more carbon than one square meter of rainforest¹, yet our understanding of them is still in its early stages. Through this publication we demonstrate that the UAE’s sabkha are an essential part of our ecological order and are vital to plant growth, animal migration and biodiversity. We ask how we can preserve, study and nurture sabkha from both a rural perspective, looking at their geological networks, and an urban one, exploring humans’ rich historic relationships with the sabkha as a natural resource.”

In line with the National Pavilion UAE’s ongoing role as an important platform for dialogue and discussion, the pavilion has collaborated with Dubai Future Foundation to present a series of public talks titled “From Liwa to Mars, The Anatomy of Sabkhas”. The series will expand on themes related to Wetland and the sabkhas. Wael Al Awar and Kenichi Teramoto will also be speaking at The World Around Summit, a global architecture conference examining the most urgent topics related to the environment, equity and the city, on 30 January, 2021. To register, visit theworldaround.com.

The project is scheduled to be presented at the National Pavilion UAE at the 17th International Architecture Exhibition of the Venice Biennale from Saturday May 22nd to Sunday November 21st 2021. While preparing for the exhibition, the National Pavilion UAE continues to monitor the situation closely with the safety of staff and visitors as its top priority.

¹ [Australian Government - Department of the Environment and Energy | Coastal wetlands—Mangroves and saltmarshes](https://www.environment.gov.au/land/terrestrial/mangroves-and-saltmarshes)



The theme of the Architecture Exhibition, *'How Will We Live Together?'*, calls for pavilions to look at architecture's ability to engage people and communities across increasing social, economic, political and digital divides. The National Pavilion UAE's exhibition has responded to this call not only through its curatorial concept but although through its collaborative approach to developing the project and publication, convening a diverse group of partners, researchers and universities to contribute.

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Notes to Editors:

National Pavilion UAE – La Biennale di Venezia

The National Pavilion UAE – La Biennale di Venezia curates untold stories about the UAE's arts and architecture through its participation, and provides a high-profile platform for curatorial concepts that address critical international conversations from a distinctive local perspective.

For each annual edition of the Art and Architecture Exhibition of La Biennale di Venezia, one of the world's most significant and rigorous cultural platforms, the National Pavilion UAE appoints and works with curators, artists and contributors to conceive, research and develop an exhibition and accompanying publication that advance and preserve understanding of the UAE's cultural landscape.

Since 2009, its exhibitions have explored the nation's cultural evolution from 20th century experimental artists to the diverse contemporary scene. In 2019, the National Pavilion UAE presented an acclaimed installation exploring geographic and psychological displacement from filmmaker Nujoom Alghanem, and in 2021, architects and curators Wael Al Awar and Kenichi Teramoto will present research into an innovative sustainable cement alternative derived from salt and minerals found in the UAE's Sabkha heritage sites.

In parallel with its exhibitions in Venice, the National Pavilion UAE engages with communities in the UAE to support the growth of the local cultural and creative industries, through public programming and professional opportunities. Alongside an extensive pool of artists, curators, researchers and partners who have contributed to its exhibitions over the years, the UAE's Venice Internship program has provided training and hands-on experience to more than 170 interns, many of whom are now working successfully in cultural fields.

The National Pavilion UAE is commissioned by the Salama bint Hamdan Al Nahyan Foundation and supported by the Ministry of Culture and Knowledge Development, with a permanent pavilion at the Sale d'Armi in the Venice Arsenale. 2021 marks the UAE's tenth participation in the International Exhibitions of La Biennale di Venezia since 2009.



Commissioner: The Salama bint Hamdan Al Nahyan Foundation

The Salama bint Hamdan Al Nahyan Foundation (SHF) is a private not-for-profit foundation committed to the cultivation of a more creative, connected and thriving UAE community. Based in Abu Dhabi, SHF oversees a diverse portfolio of not-for-profit programs and initiatives spanning the arts, culture, heritage, human development and early childhood development in the UAE and internationally. Underpinning SHF's activities is a common ambition to invest in the knowledge and capabilities of the UAE people in order to support them to unlock their full potential.

Supporter: Ministry of Culture and Youth

The Ministry of Culture and Youth works to enrich the cultural ecosystem in the UAE through initiatives and policies that stimulate the development of the cultural and creative industries and its contribution to the country's GDP, developing new legislation and policies that promote integrated media growth in the country and creating avenues for the youth to invest their capabilities in the aforementioned fields.

The Ministry of Culture and Youth is responsible for empowering and engaging the youth in the UAE by enhancing their leadership skills, involving them in decision-making process and programs, and giving them opportunities to contribute to the creative development of the country.

About waiwai design

waiwai is an award-winning multidisciplinary architecture, landscape, graphic and urban design studio with offices in Dubai and Tokyo.

Known for addressing the social, environmental, economical and technological aspects of architectural projects, the firm has worked on prominent cultural institutions including Dubai's Jameel Arts Centre, Jaddaf waterfront sculpture park, Al Warqa'a mosque, Hai d3 and Jeddah's Hayy: Creative Hub.

Formerly known as ibda design ('start' in Arabic), in 2019 the firm was renamed **waiwai** – a Japanese onomatopoeia which refers to the sound of a cheering crowd – to mark its 10-year anniversary.

Dubai and Tokyo each foster multicultural diversity, and the range of cultural backgrounds in the **waiwai** team inspires communication through a clear, simple and deliberate approach to architecture. The principals of **waiwai**'s Dubai office, **Wael Al Awar** (Lebanon) and **Kenichi Teramoto** (Japan), have unique stories that first led them away from their home countries, then later to collaborate in Dubai. They share an ability to observe a city up-close and intimately, yet also from afar, with the attentive eye of an outsider.

Their projects layer their individual design sensibilities into an architecture of natural light, time, structure and landscape. By aligning with natural phenomena, **waiwai** seeks to create an architecture that is more than man-made fabrication, but instead remains open to adaptation and appropriation. The spaces that emerge from this approach are site-specific provocations that encourage unexpected experiences, activities and behaviors.

Wael Al Awar founded **waiwai** in 2009 after moving back to the Middle East from Tokyo. With interests in natural phenomena, landscape and formless diagrams of relations, Wael has a multi-disciplinary approach to design and is always looking to challenge conventional processes to push the boundaries of design.





Kenichi Teramoto joined **waiwai** as a principal architect and partner in 2012. Teramoto's working experiences have trained him to develop an understanding of culture, geography and materiality. His approach to design is multi-disciplinary, and he has a deep interest in natural phenomena and structure. He is always re-questioning the design approach with the aim of delivering a distinctive design.

They share extensive experience in designing projects of various scales and programs, including art centers and parks, school and university campuses, mixed-use developments, private villas and mosques.

waiwai was named among the top 17 architects and top 50 influential designers of the year by Nikkei Magazine in 2019; recognized by Architectural Record's annual Design Vanguard issue as one of the top 10 emerging firms in the world in 2018; and included in Architectural Digest's top 50 offices in the Middle East in 2017.

About Wael Al Awar

Wael Al Awar founded waiwai design (formerly ibda design) in 2009 after moving back to the Middle East from Tokyo. He has extensive experience in designing projects of various scales and programs, including art centres and parks, school and university campuses, mixed-use developments, private villas and mosques.

With interests in natural phenomena, landscape and formless diagrams of relations, Wael has a multi-disciplinary approach to design and is always looking to challenge conventional processes to push the boundaries of design.

Wael has worked in the Middle East, the West and for several years in Tokyo, working with renowned Japanese architects. He has developed a strong cultural understanding and geographical sensitivity to different project contexts, and offers the perspective of a permanent outsider working with no geographical boundaries.

Wael holds a B.Arch from the American University of Beirut, Lebanon.

About Kenichi Teramoto

Kenichi Teramoto joined waiwai design (formerly ibda design) as a founding partner in 2012.

Previously, Teramoto worked with renowned architects in Tokyo and Rotterdam, on local and international projects, building an extensive design experience in both Asia and Europe. His architectural design proficiency includes a diverse range of projects including art centres and parks, school and university campuses, mixed-use developments, private villas and mosques.

Teramoto's working experiences have trained him to develop an understanding of culture, geography and materiality. His approach to design is multi-disciplinary, and he has a deep interest in natural phenomena and structure. He is always re-questioning the design approach with the aim of delivering a distinctive design.

Teramoto holds a M.Arch from Tokyo University of Science, Japan.

