

# Brave new world

Design competitions draw bright ideas for a more sustainable post-pandemic urban future

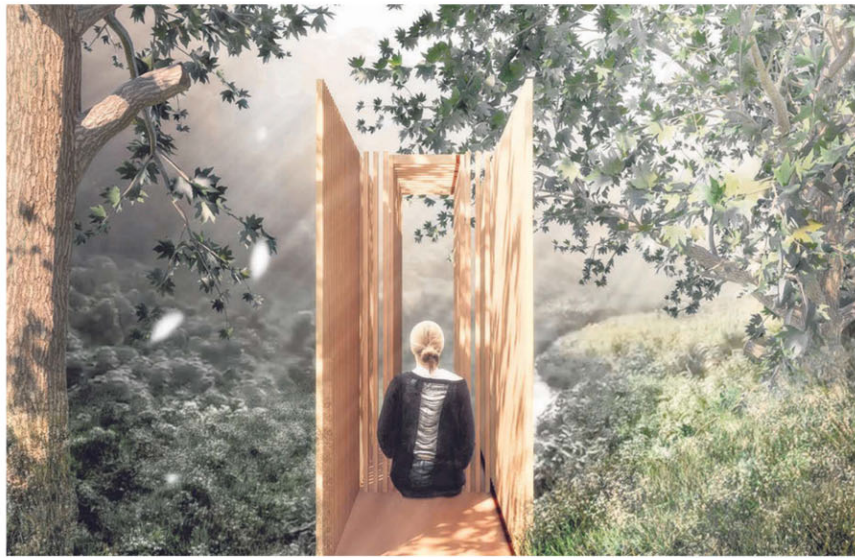


Chantal Sajan  
Senior Correspondent

Singapore designers are stepping up to the plate in global competitions to share their cutting-edge ideas for dealing with the pandemic, climate change and sustainable urban development.

It is not a moment too soon. According to *Creating Livable Asian Cities*, a report released in April by the Asian Development Bank, Asia's future is urban, with more than half of its four billion residents living in cities in 2039.

Another one billion are projected to join city-dwellers in the next 30 years, pushing the urbanisation rate above 64 per cent by 2050. The report says Asia's cities are booming because they are hubs of



economic and social opportunities.

Urbanisation may have driven regional productivity growth, but it has also created major challenges such as a lack of affordable housing; marginalisation of the poor; air and water pollution; failure to mitigate the effects of climate change; and shortcomings in urban infrastructure.

While design competitions have for more than a decade encouraged architects, designers and students to devise creative solutions to the problems of the built environment, there has been added urgency since Covid-19 struck last year.

In Singapore, besides high-profile contests – such as the biennial President's Design Award, jointly administered by the

DesignSingapore Council and the Urban Redevelopment Authority, the international James Dyson Award and the Ikea Young Designer Award – newer competitions such as CapitalLand's Sustainability X Challenge (CSXC) are training the spotlight on finding solutions to real-world problems.

The President's Design Award returns next year, while this year's Ikea Young Designer Award will announce a winner from 16 finalists on July 15.

Mr Tan Lien Chiew is one of six global finalists that property developer CapitalLand has short-listed for its inaugural CSXC.

He is the founder and chief executive of home-grown start-up g-EN, and has invented a portable, self-

powered energy generator-cum-chiller that churns out clean energy and cool air by using ambient heat or waste heat.

"My interests started from the transportation industry long ago," says the 68-year-old, who has extensive experience as an electro-mechanical technician and business owner in automation solutions.

Fascinated by practical applied sciences and emerging technologies, he studied mass transportation systems to see how they could be more efficient.

"As I delved deeper into the technical components of vehicles, I was intrigued by how much room there was for the combustion engine system to be improved. I was initially looking to harness the 'power' of cold liquid carbon dioxide for transport before I saw the opportunity to address a more serious challenge – long-lasting portable clean power."

His invention, called the CooGen, is a self-powered cold hydraulic generator that can churn out clean energy affordably for buildings, using ambient heat or waste heat that has a temperature of about 25 deg C.

The CSXC contest, which closed submissions in February, received more than 270 entries from more than 25 countries.

It focuses on areas such as low-carbon transition, water conservation and waste management. Finalists vied for two awards with prize money of up to \$50,000 each.

Since January, there has been a slew of other design competitions. The Lexus Design Award, launched in 2013, is an international competition organised by the luxury marque. Six designers will be able to prototype their designs under the mentorship of leading designers. This year, it drew 2,079 entries from 66 countries.

In February, the international Nippon Paint Asia Young Designer Awards 2020/21 announced two Singapore winners for its competition, with the theme Forward: Human-Centred Design.

The contest, which is held annually in 16 countries such as China, India and Indonesia, attracted nearly 7,000 entries this year and is part of the international paint manufacturer's vision of nurturing a new generation of design talent.

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MSLAW YOE FOONG, resident judge of the Nippon Paint Asia Young Designer Awards 2020/21, on the importance of giving young designers a platform to test new ideas

Launched in 2008, it claims to be the largest and longest-running student design competition in Asia.

It aims to inspire architecture and interior design students to develop their skills through cross-learning opportunities and networking with key industry players as well as peers in the region.

The works of this year's winners Eldon Ng, 24, and Jessica Lim, 21, addressed how communities could mitigate the impact of Covid-19.

Mr Ng's winning design, The Factory, is inspired by cities overwhelmed by the pandemic. His re-imagination of the cremation facility as a "factory" is meant to reduce greenhouse gases and recycle bodies to "give back" to society.

The Factory liquefies bodies through "aquamation" instead of cremation, separating bones from liquefied flesh. The bones are ground up to be mixed with concrete for reuse as building materials, while the flesh is turned into fertilizer.

Ms Lim's entry, Weightless, deals with mental and physical well-being. Her design leverages under-utilised space in Fort Canning Park for visitors to cocoon themselves in a "slow space".

The competition's resident judge Lay Yoke Foong says it is important to encourage young talent to showcase their thoughts, present their cases and receive industry feedback.

"Aside from sparring with their peers, it also allows participants early interaction with practitioners," says Ms Law, who is also the executive director of architectural practice RSP. "It is a healthy battle of revolution versus relevance and concept versus buildability."

She adds: "The uncertainty of the pandemic will continue to challenge designers. Design is a response of the needs of its users to enrich their lives. What we can do now is provide flexibility in design, so it can be nimble enough to respond quickly when situations change."

But eureka design moments are not enough to turn an invention into a market-ready product.

A design has to do more than win competitions for it to be commercially viable, says Mr Lawrence Wu, co-founder of Trirrec, an investment firm focusing on renewable energy, clean technology and sustainability. He is also a director in Skylab Holding, a start-up dealing in the Internet of Things (IoT), connectivity and cloud solutions.

"Taking a design from prototype to production is an iterative process that takes time, money, patience and humility," says Mr Wu, 45, who is also co-founder of renewable energy firm Sunseap Group.

At Trirrec, his team works with entrepreneurs in various areas of the sustainability sector.

"We create a community or ecosystem with our investee companies and provide them not just with capital but also entrepreneurial experience and operational guidance to accelerate market entry and growth," he says. "This ecosystem... allows innovators to tap ideas from other disciplines as their start-ups transit from product to production – and, hopefully, profit."

Here are winning ideas from three design competitions that tackle sustainability, resilience and rejuvenation.

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## Design with empathy

NIPPON PAINT ASIA YOUNG DESIGNER AWARDS 2020/21  
Launched in 2008

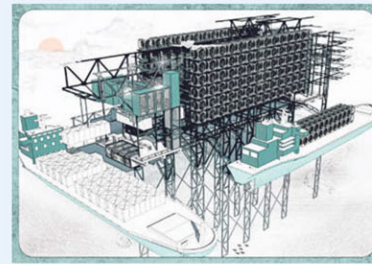
Singapore's winners of the Nippon Paint Asia Young Designer Awards 2020/21 (Ayda), Mr Eldon Ng and Ms Jessica Lim, both focused on how communities can fend off the negative impact of the coronavirus pandemic through the competition's overarching theme of Forward: Human-Centred Design.

The competition is open to the architecture and interior design faculties of tertiary institutions. Each submission is assessed by a panel of seven judges on how thought-provoking it is, how fresh the idea is and how complete it is in the articulation of the theme, as well as its ease of construction.

Mr Ng, 24, an architecture student at the National University of Singapore, conceptualised The Factory, which deals with a macabre aspect of the pandemic.

He says his design is a response to the disposal of bodies seen around the world.

"The design is specifically inspired by a story from New York where healthcare professionals



Mr Eldon Ng's The Factory (above) and Ms Jessica Lim's Weightless (left) focus on coping with the impact of the pandemic. PHOTOS: ELDON NG, JESSICA LIM

were observed placing the deceased into refrigerated container trucks for temporary storage. Leveraging these container trucks as the basis of the concept, my design seeks to encourage an efficient way of handling death," adds the undergraduate, who won \$1,500 for his submission.

Ayda resident judge Lay Yoke Foong, who is executive director of architectural firm RSP, says the jury

tussled over Mr Ng's submission. "I was quite unmoved by his approach to man's last journey... However, after putting emotions aside and looking at it from another

perspective, Eldon's proposal is actually a very courageous attempt at addressing the pandemic, with sustainable cremation and alternative architecture," she says.

"He was also very steadfast about his belief when handling challenging questions on his approach."

Ms Lim, 21, also won \$1,500 for her entry, titled Weightless. It leverages under-utilised space in Fort Canning Park to let visitors cocoon themselves in a "slow space" for mental and physical well-being.

"Rather than an enclosed space, I designed an introverted space in this project," says Ms Lim, an

interior design student at Lasalle College of the Arts. "An enclosed space tends to limit or restrict the users from the continuous occupancy, while an introverted space tends to conceal what is within, offering privacy," she explains, adding that an introverted space provides respite from overstimulation.

She says she drew inspiration from the tree trunks and was amazed by the National Parks Board's efforts to preserve local trees.

She adds that people take for granted the importance of trees in retaining the city's heritage and improving the environment. "With this design approach, the built structure thus aims to encourage people to re-invent their relationship with their surroundings, as well as to be a part of nature."

Mr Leong Hon Kit, director of Wynk Collaborative and an Ayda judge for two years, says he appreciates that Ms Lim's design lets people engage with the surroundings in their own ways.

"The pandemic has taught designers to be more agile and empathetic in their work, because formulas that work well today may be obsolete tomorrow. The user and the environment lie at the heart of any design."

## Greening up buildings

CAPITALAND SUSTAINABILITY X CHALLENGE  
Launched this year

Singapore real estate company CapitalLand announced yesterday the winners of its inaugural CapitalLand Sustainability X Challenge.

The winners of the two top prizes, the High Impact Award and the Most Innovative Award, will get \$50,000 in cash to fund their projects, mentored by a CapitalLand business leader.

They will also get an opportunity to pilot, test and implement innovations at select CapitalLand properties in more than 240 cities in about 30 countries.

The real estate company launched its global open call for sustainability innovation from November last year to February, and shortlisted six of the best ideas last month.

The six finalists comprise a mix of greentech start-ups and companies from Singapore, China and the United States.

Other inventions include glass technology that reduces heat gain inside a building, innovative construction materials, a smart waste bin which uses artificial intelligence to sort waste.

One of the finalists, Mr Joe Heng, managing director of home-grown building technology firm Climatec

Corp, has invented the ClimateControl Quantum Resonance Water (QRW), a way of treating water used in cooling towers without using chemicals or electricity.

Cooling towers are used to expel building heat into the atmosphere to regulate the temperature inside buildings. The discharged water used in these cooling towers is typically dumped into the drain.

But Climatec has found a way to recycle wastewater for other uses, such as plant irrigation or toilet flushing.

Mr Heng's invention uses micro-molecular water and photon vibration frequency through strong magnetic fields and ceramic-based composites to treat water.

The 49-year-old says the QRW can reduce water wastage by 60 to 90 per cent, and reduce energy consumption by more than 5 per cent.



US start-up Clean-Robotics TrashBot is a smart bin that uses artificial intelligence to sort waste. PHOTO: CAPITALAND