Talks on Architecture & Beyond

COSENTINO

Talks on Architecture & Beyond

By Cosentino

Dedication

This book is dedicated to the Architects and Designers who are shaping our built environment and guiding us towards a better, more sustainable tomorrow.

Published by:

Media Group Pte Ltd
20 Bedok South Road
Singapore 469277

Talks on Architecture & Beyond

Team Head, Custom Content Solutions: Callyn Poh
Editor: Low Shi Ping
Art Directors: Cally Han, JunLong Loh

Printed in Singapore

Contents

On the cover:
Cosentino's Dekton Danae clads the facade of this building located in Turkey and designed by Salih Dikmen.

Introduction

In 2019, 12 architects shared their vision, philosophy, practice and experience in a series of small, intimate talks organised over the course of the year at Cosentino City in Singapore.

These talks covered areas of architecture and the built environment, sharing innovative architectural solutions and showcasing the power of architecture to have a radical impact on people's lives.

Every month, The TAB Series (Talks on Architecture & Beyond) featured the makers and thinkers of what surrounds us, the women and men of architecture, the young and less young, those in small firms and large firms, as well as our local heroes, operating in Singapore.

Based on Cosentino's dream of creating a space for architects and designers to share ideas and experiences in a relaxing environment, and further curated by WY-TO managing director Yann Follain, the talks had architecture take centrestage to stimulate creativity and show how it can transform our world.

Inspiring architects each led the discussion on the quarterly themes of Eco-system, Materiality, Typology and Human Factor.

The Cosentino Commitment To Architecture

Ever since Cosentino was established some 40 years ago, we have always felt very close to the world of architecture.

Our early work, linked to the manufacture of natural stone and, more specifically, Blanco Macael marble, helped us get to know the ideas, dreams and aspirations of many architects who saw natural stone as a way to lend beauty and prestige to their projects.

Our marble has been used to build cathedrals, palaces, residences, museums and more, always providing a special and highly-regarded touch.

We have had the huge honour of contributing to the renovation of historic buildings of great architectural importance, such as the Alhambra in Granada and the Great Mosque in Córdoba.

Working side by side with the architects responsible for renovating these buildings – both over a thousand years old – has given us a privileged insight into the unique sensitivity and respect that such projects require.

More recently, with the use of products such as Silestone and particularly Dekton, the relationship between Cosentino and architecture has grown considerably.

Both products have incorporated important sustainability standards that are now leading the way within our industry.

We are keenly aware of manufacturing systems with a philosophy based on the circular economy.

Back in 2009, we became pioneers with the launch of the product Eco by Cosentino, which later evolved into the Silestone Eco Line.

In the last three years, we have achieved something similar with Dekton and the Industrial series, which have colours created with more than 60 percent of materials recycled from the production process.

Hundreds of architects from all over the world visit our head office in Almería, Spain every year.

We establish a relationship of trust with all of them, based on professionalism, transparency and shared values when it comes to the drive for sustainable architecture.

Another example of our commitment to architecture is the publication of *C Magazine*, of which 16 issues have been published so far.

Inside, you can find brilliant features on the most important projects in contemporary architecture, and we have been lucky enough to have contributed to many of these with our products.

Of equal significance is the close collaboration we have maintained with professional architecture schools and associations, sharing studios, awards, travels etc.

I am very pleased to be able to write the preface to this book, which brings together the professional profiles of Singapore's outstanding architects.

Cosentino has a very good relationship with Singapore, a country which has used our products now for almost 10 years.

I hope and trust that the book you now have in your hands is of interest and that you enjoy the result of so many people's hard work in producing a truly valuable publication.

Francisco Martinez-Cosentino Justo
CEO, Cosentino Group

Good Practice, Good Life

The story behind the TAB Series (Talks on Architecture & Beyond) began when we were approached by Cosentino to curate a year-long series of talks in Singapore, covering the areas of architecture and the built environment. We invited the makers and thinkers to communicate their ideas around the quarterly themes of Eco-system, Materiality, Typology and Human Factor.

Organised as a monthly event throughout 2019, it initiated insightful discussions on what is architecture in the Singapore context, innovative design solutions and, more importantly, showcased the power of well-designed spaces and their radical impact on life, human interaction and society.

Good Practice

As we embark on the next 50 years of independence, where is Singapore's architecture moving towards?

Many things are changing vastly, including the tools and technology available in the building industry, and so naturally, there has been a gradual shift in the way of thinking and designing.

Architects are also faced with a slew of different issues and challenges our forefathers would have never dreamed of. Therefore, we selected and invited the current local heroes of the contemporary architecture scene, who have been entrusted with the responsibility to continue what the pioneers have started, to reconstitute the Singaporean identity.

The diversity of speakers goes to show the variety of practices in our small metropolis, each shaping the future in different ways. They represent the women and men shaping the built environment, from small firms (Freight Architects, ASOLIDPLAN, Kite Studio Architecture), mid-sized (MKPL), long-established (CIAP), international (HASSELL, K2LD), landscape (Ramboll Studio Dreiseitl) as well as the next generation within the well-established firms (Park + Associates, LAUD, Zarch Collaboratives).

Each of these practices put up highly-innovative and thought-provoking presentations, which showcased fresh approaches to site conditions, challenged the norms and pushed boundaries of what we thought to be possible. The speakers shared their philosophy and methodology of designing, specifically to tackle the unique challenges of practising in Singapore.

Topics throughout the year illustrated the variety of approaches: historical, futuristic, landscape or temporary, to name few, capturing some unique areas of interest in this inexhaustible discipline.

"Good practices" are the key to facing the challenges ahead, as they strive to design better places with the end-users in mind, allowing design to change the way of living for the better.

To close the Cosentino TAB Series, instead of getting the next generation to talk about the future, we invited one of the pioneering architects of Singapore's formative years, Tan Cheng Siong (Archurban Architects Planners), to talk about his hopes for the future, inspiring the next generation to learn from the lessons of a whole life dedicated to elevating the built environment to where it is today.

Good Life

What is the "good life"?

We believe that everyone deserves a better living environment, regardless of who you are and your background. Having access to "good" should not be an exclusive privilege or discriminate

against certain groups of people, but rather should be the mark of a healthy city. This is one that holistically works towards minimising negative influences on and from the environment, and expanding common resources to allow communities to thrive happily.

Healthy cities regard this as an ongoing process, rather than a final outcome to be achieved, since our world and the needs of people are always evolving.

Living in a high-density city which continues to undergo densification with each passing year, we commonly see plots being cleared to make way for buildings which are taller and taller, yet units become smaller and smaller. Despite having new buildings, the quality of life drastically drops, since natural resources like ventilation, natural daylighting and access to nature become luxuries. When buildings are demolished, communities are broken and people are scattered, adversely affecting overall urban health.

Is this truly the "good life"?

On the other hand, building better hospitals (CIAP), schools (LAUD), social housing (MKPL) and public parks (Ramboll Studio Dreiseitl) for the people are notable steps in the right direction towards enhancing the collective "good".

Therefore, Singapore needs to continue to find ways to reconnect with nature, be resilient, sustainable, always be mindful of climate change and encourage community living and connections through integrated solutions on the macro as well as micro scale. How we envision the built environment today will affect and shape our future.

When we see the challenges faced by each of these practices in daily life, we start to appreciate how design impacts communities in very tangible ways. The link between "good practice" and "good life" starts to become more compelling, emerging as a common thread woven into each of the 12 talks.

Through the sharing of stories, anecdotes and creative approaches to problems, the TAB Series was a successful platform that promoted the importance of knowledge sharing among designers and people in related fields.

We trust this will not be the last of such conversations and discussions which impact the built environment of this little red dot. We hope it might even spark a global network where architects can come together to share knowledge in Cosentino showrooms all around the world.

Yann Follain
Curator, The TAB Series
Managing Director / Head of Design – Singapore, WY-TO

Jamie Ding
Curatorial Assistant, The TAB Series
Architectural Designer, WY-TO

Product: **Dekton Helena**

Eco-systems

There is something about nature that invokes a sense of peace that is difficult to describe. People have always shared this bond with it, which explains why more and more, the eco-systems architects design are reconnecting with the natural environment around them and integrating landscape architecture early on in the design process. There have been many successful examples of biomimicry in architecture. Buildings have been inspired by various natural forms, and architects have learnt from processes found abundantly in nature to create sustainable buildings, which can respond positively to the environment. With sustainability entrenched in society, we must take the effort to responsibly identify which practices are truly green and sustainable, and weed out those that are not.

Jia Xin Chum

Senior Associate, Ramboll Studio Dreiseitl

Chum brings to the table architectural expertise from working on medium and large-scale buildings and award-winning master plans all around the world.

Her prior work experience in Hong Kong, New York and Singapore has equipped her with a broad knowledge of the complexities of mixed-use developments, and the pressing need for architecture deeply rooted in social, urban and natural eco-systems.

Driven by a strong personal belief that design holds a powerful role in positively transforming societies, Chum aspires to elevate and empower the design cultural scene of Singapore, alongside like-minded, passionate individuals and organisations.

She believes that good design is not only reserved for the privileged, but a philosophy integrated into everyday life.

Chum is actively involved in design and architecture curation and promotion, in collaboration with the Urban Redevelopment Authority, DesignSingapore Council and Venice Biennale.

This is spurred by a keen interest in the social, natural and liveable dimension of urban developments.

She is also a regular guest lecturer at the Singapore University of Technology and Design (SUTD), where she has previously taught the Sustainable Design Studio, as well as design studios at the National University of Singapore.

Product: **Dekton Helena**

Jia Xin Chum

ESSAY
Beyond the Blue and the Green

Our Blue Marble

Powers of Ten, the 1977 seminal documentary commissioned by IBM and produced by Charles and Ray Eames, brought to fore the relationships that a seemingly mundane act of picnicking (near Lake Michigan, no less) has to the macro and micro scale of our environment.

Marketed as an educational film and shown in schools across the United States, it was a broad brush in anthropology, biology, astronomy and many other scientific fields.

I had prefaced my sharing at Cosentino's The TAB Series by showing a snippet of *Powers of Ten* due to two main reasons.

Charles and Ray Eames are the most influential designers of the 20th century who have fascinated me with their endless obsession of testing and making across multiple mediums and disciplines.

Secondly, it was an existing example that was most apt in communicating our relationship with the immediate environment as well as our role in the larger eco-system.

The film had several different cuts and versions, with the initial test cut completed in 1963.

When the Eameses introduced the film in a lecture at Harvard University in 1970, Charles related the intricate eco-system demonstrated through the different scales to ecology and economics.

The hypothesis established then, that the ecological crisis is the greatest challenge faced by mankind, is today an apparent fact and inescapable truth.

Fifty years have passed since they used this short film as a launching pad to a larger campaign on ecological issues, urging for greater collective responsibility for the environment.

As architects, we have little power in influencing the economics of the real world.

What we have is the power to alter the perception of the significance of our built environment and blue-green infrastructure (BGI), and start thinking beyond the blue and the green.

Far From Equilibrium

It is pertinent to describe our built environment as a complex and dynamic system, that allows for transformation and change.

Bishan-Ang Mo Kio Park is a successful example in employing such a design strategy, and has demonstrated how a city park can function as ecological infrastructure, with a smart combination of potable water procurement, flood protection, improved water quality, biodiversity, recreation.

After Bishan-Ang Mo Kio Park was designed to be a prototype of a blue-green infrastructure in Singapore, Kallang River was transformed from a linear, utilitarian concrete drainage channel into a meandering, natural river landscape.

The naturalised river almost immediately started to literally come alive, with a 30 percent increase in biodiversity recorded even prior to construction completion.

Designed with vast, open flood plains, these are valuable community recreational spaces, not unlike Sheep Meadow and Great Lawn in Central Park, New York, except that the kite-flying, frisbee-playing and picnic grounds allows the park to function as a real river plain.

It permits water to spread across the plains, while slowing the waters through friction, thus reducing hydraulic overloading to the river downstream in denser urban areas.

This was the first of its kind in Singapore, where bioengineering was used to stabilise the soft, planted river banks to ensure that it can withstand strong flood flows (imagine the volume of water during a tropical torrential rain!), and provide habitats for flora and fauna.

“As architects, we have little power in influencing the economics of the real world.”

This also allowed people to reengage with water as one of the natural elements in our environment, where spontaneous water play builds stronger emotional connection to the park, which has led to an increased sense of civic responsibility towards water.

Bishan-Ang Mo Kio Park was designed to be a prototype of a blue-green infrastructure in Singapore.

Dynamic systems can react positively to multiple variables as their strength lies in "self-organising" when the system is far from equilibrium.

The river embankments designed using soil bioengineering structures are constructed to be ecologically sound, and are able to adapt to their environment through constant self-repair through their ever-increasing resilience and stability.

This method is superior to the hard-edged, concrete drainage canals, and has proven to be more sustainable and economically-viable in the long run.

At What Cost?

There is empirical evidence to support the socio-economic benefits of BGI.

A cost-benefit analysis of Bishan-Ang Mo Kio Park led by Ramboll and funded by the Singapore Ministry of Education shows that such BGI has positive impacts on public life, public spending and the eco-system.

Take Kampung Admiralty as another case study, where local fruit trees that were once of abundance in the *kampungs* (Malay word for "villages") are planted to remind the old of familiar memories of the past, and to garner interest in the young.

A wide range of carefully-thought planting schemes were adopted to create a diverse landscape for different users – the exploration of different planting compositions and species that mimics the wild-

> **What we have is the power to alter the perception of the significance of our built environment and blue-green infrastructure (BGI), and start thinking beyond the blue and the green.**

attracting biodiversity, ranging from butterflies to small birds.

In addition, the reflection of the change of seasons in the lush landscape is created by the special selection of plants with colour-changing foliage.

Efficient storm water harvesting and irrigation systems are developed for the extensive landscaped areas.

The tiered architecture provides a larger surface area for collecting storm-water runoff.

Taking advantage of the vertical nature of the building, vertical cleansing systems can be created.

Through gravity, water can be channelled vertically by a series of cleansing cells and rain gardens, which form a continuous treatment train before channelled into a harvesting tank for irrigation.

With the integration of the blue-green in this highly urbanised built element at Kampung Admiralty, it is important to know how much water can be captured and how much can be used.

Assuming the average annual rainfall in Singapore, 4.1 million litres of tap water can be saved each year if runoff is stored in the rain water harvesting tank and reused for irrigation.

This translates to approximately the average water consumption amount of 200 public housing five-room flats in one month – a huge saving figure for such a multi-functional urban development located in the heart of a dense residential area.

What is more challenging to quantify is the value of landscape that allows for the organic creation of a community that bonds over a sense of belonging they have towards a place.

These shared landscapes for relaxation and recreation encourages one another to care for their surroundings.

An example to illustrate this point is of a near-emergency when the eco-pond water pump was accidentally left deactivated overnight during the first few weeks of testing and commissioning of the water feature.

Residents who had just moved in jumped into the pond, armed with buckets, to help temporarily re-home the fish.

Although this was a one-off event, it demonstrates precisely the extension of care from within one's home, to one's neighbours, including non-human neighbours.

Redefining Comfort and Convenience

As expected, with increased biodiversity comes the risk of attracting strange animals, including arthropods into our urban areas.

Education is key, when we move towards accepting a degree of coexistence with the urban wildlife.

Conflicts and benefits must be weighted holistically, and this requires cross-disciplinary exchanges in the various fields, including economics, sociology, public health, biology, psychology and planning.

Keystone species must be protected, which will in turn protect the entire eco-system.

It is when we succeed in instilling a more positive attitude towards wildlife, that we can truly see beyond the blue and the green.

INTERVIEW
General

Where did you study? Did it prepare you well to start your professional career?

I did my graduate studies in Princeton University, and my undergraduate training in The University of Hong Kong. It was then a strange period in the global economy. Both my formative explorations and learning in architecture were bookended by the beginning and end of a major financial crisis that saw the collapse of Lehman Brothers, and the full damage from the burst of the subprime mortgage bubble in the US that rippled across the rest of the world.

To put things into perspective, we were 19 or 20 year olds, learning about Vitruvius, Palladio, Corbusier, Mies and Kahn, when suicide rates were spiking, oil prices were at an all-time high, property prices were climbing exponentially, obesity was declared as an epidemic...

Amid all these, we were grappling with the founding decade of Wikipedia, YouTube and Facebook. My Princeton classmate Razvan (now my husband), who was also one of the invited speakers of the TAB Series, used to joke that he learnt everything from YouTube and went to school only to socialise. There's a saying that "behind every joke there is an ounce of truth", and to a certain extent, that is true. We had the honour and privilege to spar with some of the most formidable thinkers, architects and innovators of our generation in the safe space of a school.

I would say that the best preparation I had from university was that we intrinsically understood that we truly live in a connected world, and as responsible global citizens, we must play a part, however large or small, in shaping a more sustainable future for all. The incessant questioning of the status quo is an obligation and should by no means be misconstrued as an act of rebellion because it is in fact our duty of care.

What are the three most significant spaces in Singapore for you?

The first one is very personal. When we moved to Singapore, we first stayed at Sunset Way because it is a charming, mature public housing estate, with their fair share of neighbourhood amenities (hawker centre, mini markets, clinics, vets, bakeries and restaurants) and was in the process of upgrading (Sungei Ulu Pandan as part of the ABC Waters programme) as well as extending the park connector.

Because of this blue and green network, egrets, kingfishers and monitor lizards are common sightings along the canals when you cut across the neighbourhood to get to the hardware store or supermarket. It was easy settling in even though it is a little disconnected from the MRT lines.

I was particularly impressed by the Lift Upgrading Programme and Home Improvement Programme that

Lakeside Gardens at Jurong Lake, the first national gardens in the heartlands of Singapore, successfully spirits people away from the stresses of everyday life.

HDB was carrying out to retrofit the estate and homes to be more elderly-friendly. Back when the estate was planned and built in the late 1980s, the elevators were designed to stop at every third floor. HDB retrofitted the elevators and blocks to allow it to stop at every floor, to cater for the ageing population. It was then I witnessed the power of design in shaping and transforming lives, and the scale of the impact the public sector has on the nation.

To this day, even after we've moved away from Sunset Way, we still revisit the neighbourhood because it is such a well-planned estate that has a comfortable scale (credit to the successful building massing in relation to the existing topography) and the neighbourly connections we have made.

The second most significant space to me, would be Singapore's shoreline and waterfront. This is linked to my third significant space, which is the Singapore City Gallery at the URA Centre. I bring everyone I know who is visiting Singapore there, as it tells you a rather comprehensive history of the built environment's transformation and the country's aspirations. The City Gallery has this amazing physical model and multi-media showcase of Singapore's urban development throughout the years and its projection towards the future. There is a space on the mezzanine of the third floor where you can flip through selected old maps and photos of the city.

Of course, you can also go on Google Earth and slide through the timeline and see the astonishing transformation of the bay area from aerial view, but flipping through reproductions of physical maps or photographs has a more tactile stimuli to memory. It was there I learnt how the land-water interface has changed over the years, how much land was reclaimed to develop the nation and what it could be once the container ports are relocated.

The urgency at which we relook at how we want to define our relationship with water for the next 100 years is connected to how seriously we want to address climate change. It might be a stretch to call the entire shoreline a "space", because it is liminal. It is nonetheless the frontier between the rising sea level and the island nation, and how resilient and adaptive the design for this space is has enormous repercussions to how we design the rest of our built environment.

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?

The Asian Development Bank estimates that 11 percent of the GDP of South-East Asia will be lost due to the effects of climate change, significantly more so than the rest of the world. It is a reality that unchecked development in developing countries has contributed to climate change, and the effects are already felt in the region. Typhoons, flash floods and prolonged dry spells are a few of the erratic weather events. Architects must be one of the key advocates for sustainable development. We must step up and educate everyone, including our clients, that sustainable development must go beyond cladding our building with greenery. We must understand that the problem is not just skin deep.

"We must step up and educate everyone, including our clients, that sustainable development must go beyond cladding our building with greenery."

It is inspiring to see top architectural firms in the UK declare a climate and biodiversity emergency, which included a commitment to share knowledge and research on an open source basis to their process in the establishment of climate and biodiversity mitigation principles. The Royal Institute of British Architects has also declared a state of climate emergency and laid plans committing to a five-year plan of action for climate change. The American Institute of Architects has followed suit and released a five point plan under the "Where We Stand: Climate Action" announcement.

This is *the* call to action we should be responding to, and it is in the service of humanity we must dedicate our efforts to.

In the fast-pace development of Singapore's built environment, can we still create meaningful spaces?
Absolutely. I do not believe there is a causation link between the speed of development and the creation of meaningful spaces. To me, the key question is at which point in time of a place are we trying to elicit meaning from? And is this "meaning" a constant value, or does it transform with time?

Architecture is famously known as an old man's profession, precisely because it takes a long time to refine an architect's design sensibilities. But let us reconsider that time was never the deciding factor here – it is through the iterative process of testing and making, the cross-disciplinary tapping of expertise, that allows us to fail more frequently and succeed faster. As technology continuously transforms the way we live, it is rather absurd to imagine architecture being practised the way it has been for the past century. So in that sense, I am cautiously optimistic of the profession's future.

"Meaning" however, is subjective. Perhaps a meaningful space is when there is resonance in the collective emotion, that the whole serves a purpose greater than its parts. To create a meaningful space is both a crowd-sourcing exercise as well as one that requires introspection. We need to look beyond trends and tease out our subconscious needs, which are the essence of what makes us human.

As of now, to me, a meaningful space is one that is truly inclusive and not only self-sustaining, but provides for the larger eco-system. Space, and specifically any space on Earth does not belong to us alone, but also to the flora and fauna species that contribute to biodiversity and a healthy eco-system. Learning to live with less and with nature, is what we should aspire to create.

Eco-systems

Do you think nature is an enabler to reconnect communities together?
We are currently living in a hyper-connected world – in fact the most connected we have ever been in the history of mankind. We are more physically connected than ever with higher population densities per area and intricate networks of circulation and modes of transportation. Social media platforms are valuable avenues where virtual communities are helping to not only reconnect old friends but also provide hope to the previously disenfranchised. I am not naïve to the fact that the digital revolution has created a cultural divide, but we must not hasten to dismiss the good that it has brought, or to lay blame the loss of sense of belonging entirely on this revolution we are all a part of.

I believe the act of acknowledging the realities of what is happening in the natural world right now – for example, melting ice caps, mass extinctions, depletion of natural resources – is a first step towards casting aside our differences and reaching common ground. There are countless campaigns launched with accompanying photographs and documentaries available that disseminate these messages. The visual medium of which the messages are broadcasted across may however need to be reconsidered. As we have grown accustomed to the visual culture, we fail to realise the premise of what photography inherently is: an image of an object or objects being viewed by an outsider. Policy-makers must work with artists and designers to turn abstract facts into visceral and tangible experiences, to transform climate knowledge into climate action.

So, perhaps the question is misleading because it assumes that we are not part of nature. It is only if we dispel that notion, that we begin to appreciate that we are one part of the eco-system we inhabit, and nature is a complex system where multitudes of human and non-human entities have the collective power to transform the world. Justin Zhuang contributed a timely piece in *Cubes* Issue #97 on re-Nature urging the recognition that nature does not operate in a "human-centric" manner. There is an urgent need to redress the wildlife and human conflict, as we expand our concept of how community is to be inclusive of all our fellow living beings.

How does integrating nature within buildings improve people's quality of lives?
Most recently, at the 2018 IFLA World Congress, my colleague Ryan Shubin presented his paper on the restorative value of nature in Singapore's landscape. This was done through the lens of biophilic design, referencing the research conducted by Rachel and Stephen Kaplan in the 1980s. The Kaplans' Attention Restoration Theory (ART) states that a physiologically restorative environment is consists of four components: fascination, extent, being away and compatibility. This theory has been supported through medical outcomes as well as intellectual task attention. The serene and delightful landscapes in the Maggie's Centres comes to mind, where the gardens are just as important as the sun-lit rooms, in creating a holistic environment for palliative and hospice care.

Ramboll Studio Dreiseitl has successfully created endearing

parks and gardens such as Lakeside Gardens at Jurong Lake, Sungei Buloh Wetland Reserve and Jurong Eco-Garden. Lakeside Gardens at Jurong Lake, the first national gardens in the heartlands of Singapore, successfully spirits away oneself from the stresses of everyday life. Like stories and films, the park invites fascination and extent, and can be seen as a robust case study for biophilic values of psychological restoration.

While it seems easier to realise all components of ART within park-scapes and gardens located away from the hustle and bustle of a city, designers of the built environment, be they planners, architects, landscape architects, will have to work collaboratively to creatively design for an integrated nature within buildings. We must strive to create distinct yet shared territories within the built environment, informed by politics attuned to the complexities of social-ecological life.

Greening the city is now part of the DNA of all developments. But are these initiatives truly sustainable and durable or simply marketing tools?

Greenwashing undeniably happens in the building industry, and has become a lifestyle trend and aspiration for many urban developments. While we cannot dismantle the power a tagline has on branding and marketing, neither should we trash the impact it has in bringing attention to the cause.

Our current efforts should bring this superficial understanding of greening into the lived habits of our everyday lives. Landscape architects and architects must work together with ecologists and biodiversity specialists, along with the operators and maintenance teams of the development from the inception of the project, to convince one another of the aspirations of the project and the associated maintenance that comes with it.

In Kampung Admiralty, a diverse landscape is complemented by efficient storm water harvesting and irrigation systems, integrating the blue-green into the development.

Kee Jing Zhi

Co-Founder and Partner, Freight Architects

In addition to being Co-Founder and Partner of Freight Architects, Kee is its Lead Designer and Creative Director.

This means he is closely involved in the design development of all projects, from inception to completion.

Prior to setting up Freight Architects, Kee has worked for multiple award-winning firms in Singapore and across the world.

Most recently, he was based in London with Wilkinson Eyre Architects, winner of the prestigious Stirling Prize.

He was also part of the award-winning team responsible for Gardens by the Bay in Singapore, and has played an integral role in designing numerous high-profile, super-high-rise towers and commercial buildings in China and Europe.

Kee is interested in the study of interstitial relationships between spaces and objects.

The idea of forms intersecting and colliding to form a labyrinth of complex spaces inspired his investigation on in-between spaces.

At Freight Architects, these ideas are explored in projects at different scales, some of which are currently under construction.

Product: **Dekton Baltic**

Kee
Jing
Zhi

ESSAY
Biophilic Liminality

Sengkang Riverside Park Preschool embodies the Singapore identity and architecture.

Just as Singapore is a city in a garden, the school is a preschool in a garden.

It has become an icon for the Sengkang community and a case study on how we can re-use a park, re-site a school and re-engage a community.

Liminality

We explored the concept of liminality in creating a biophilic environment for the preschool.

The design concept touched on creating a fenceless but secure pre-educational facility that blends completely into the natural landscape.

Liminal spaces are a central design topic in our firm. We feel that there is a certain beauty in the transition state and spaces.

Our architecture is an open system that connects buildings with the environment.

This is especially so in the tropics where we need to create buildings that breathe and achieve symbiosis with nature.

We are interested in the experience between the indoor and outdoor.

In this case, the façade is not so clearly defined as it merges with the natural surroundings.

The Site

The old Sengkang riverside park is an open park with only a landmark sculpture.

Due to its proximity to the river, it has a high water table and the trees do not grow well, resulting in an area that is generally flat and nondescript.

The park slopes towards the river and is lined with thick mangrove plants at the river bank, which prohibits activities at the river.

National Parks Board (NParks) is the landowner and together with the Early Childhood Development Agency (ECDA), conceptualised to situate a pre-school in the park to bring learning outdoors.

Together with the operator Skool4Kidz, the curriculum was revised accordingly, thereby allowing the children to be exposed to nature.

The Brief

As part of the Singapore government's efforts to reinvent and improve the learning spaces in the country, it is experimenting locating childcare centres at unusual and interesting areas.

Sengkang Riverside Park Preschool is the first school in a park in Singapore.

Sengkang Riverside Park Preschool has a "rolling hill" concept to merge the building mass with the park.

With a location like this, NParks stipulated many design criteria for the project but the client (Skool4Kidz) gladly took on the challenge.

One of the criterion is for one-to-one green replacement, and the other is for the building to have an organic form.

Design Strategy

We started with the idea of integration and proposed a "rolling hill" concept to merge the building mass with the park.

It also provides a whimsical narrative for the children who attend this "hill school". The building adopts a crescent form around an existing park sculpture with an access road cutting through it.

The green roof is supported by steel ribs that open up towards the edges and merge into the landscape.

The two ends of the hill tapers down to reduce the massing at the edges, while maintaining a very high volume at the central atrium.

We wanted the school to be an "outdoor" school in a park, in line with the curriculum.

Classrooms are situated at both wings flanking a central atrium park. The central park is fully sheltered but opened at both sides for natural ventilation and daylight.

This area provides a garden setting for the entrance arrival and for the children's indoor learning.

The classrooms also open out at both sides to wide, semi-outdoor corridor spaces for sheltered learning and playing spaces like sand/water play and even motor-skills training.

Green Design

This project has many sustainability and passive design features.

The building is positioned with the shortest and smallest surface area towards the harsh equatorial western sun.

Both sides of the hill are opened up for natural ventilation and daylight.

As the periphery spaces are semi-outdoors, rainwater flows into certain parts of the building and is collected for irrigation and learning purposes.

There are central courts at each wing to form shafts for internal hot air to escape.

As it is a building situated in a park, we have designed a bio-diversified green roof with different plant species.

Challenges

It was an interesting process to work with different stakeholders to create a test-bed project within a short span of one year.

As it is the first preschool situated in a public, open park, there were a lot of precedence in planning and regulatory consultation.

> **"Parameters and boundaries are important for architects to innovate and break out of the box."**

All related statutory boards were deeply involved in the consultation and approvals to realise this project.

We adopted a simple approach and seemingly simple form. But the process was not at all simple.

We collected and incorporated all the complex feedback and data and simplified them into a final cocoon form.

The cocoon is very meaningful for the school as it is where children are nurtured and groomed.

Skool4Kidz calls it a "Learning Cocoon".

We used advance computer software to study the roof rib structure. Many iterations were done to manipulate the shape of the building so that it is within URA's height requirements and those laid out by ECDA.

We also needed to understand sight lines, prevailing wind direction

Sengkang Riverside Park Preschool integrates into the surrounds, masquerading as a rolling hill with a crescent form.

and sun path and to combine all these data into a framework to create the building's final form and its orientation.

NParks and URA required the building to be fenceless, so as to foster greater connection with the park.

We therefore had to think out of the box to cater for school security, public accessibility and car movement through the park.

We had to design for safety to prevent the public from wandering up the roof.

Because we could not install fences, we used planting and hedges to limit access.

This project is a breakthrough in many aspects. It provides a new location for preschools and we hope that it can also become a test bed for future preschools in Singapore.

INTERVIEW
General

What do you think is the role of the architect in the 21st century versus the previous century?
The role of the architect in the 21st century is more complex. In the world of social media, information gets transmitted instantaneously and ideas/perceptions change at an alarmingly fast pace. Building is playing catch-up constantly. Architects no longer just operate locally but globally. Hence, we need to change the way we communicate and how our projects can be related to the public.

In the era of robotisation, 3D printing and automation, is the role of the architect still relevant?
The implementation of architecture is different but the role of the architect is still relevant. The architect is still required to create and reimagine spaces and buildings. Robotisation, 3D printing and automation are just different methods in the creation of architecture.

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or catalyst for innovation?
Parameters and boundaries are important for architects to innovate and break out of the box. However, rules and regulations have increased over the years, which have made practising increasingly demanding. There are way too many regulatory submissions in Singapore, which I hope can be reduced.

If you could give one piece of advice to the younger generation of architects, what would it be?
Travel and work overseas to be exposed to different cultures and ideas.

Skylights are cut into the roof of the Sengkang Riverside Park Preschool flooding the interiors with daylight.

Eco-systems

How does integrating nature within buildings improve people's quality of lives?
We want to create a more transparent framework in architecture. Buildings in Singapore need to open up more to merge with the environment. It is no longer just about improving ventilation and air quality. But it is also about enjoying outdoor spaces in a sheltered and protected environment.

Greening the city is now part of the DNA of all developments. But are these initiatives truly sustainable and durable or simply marketing tools?
I think a balance must be struck when it comes to greening the city. Greening also means increasing maintenance and irrigation cost. It is important to green the city as Singapore does not have many natural open spaces, hence it is our role to create a man-made open landscape to integrate with our environment.

Do you face challenges convincing clients and decisions-makers to incorporate sustainable development and features into a project?
Every client likes the idea of green but preferably beyond their fence line. The challenges are maintenance. Plants and trees also take time to mature to reach the intended green coverage, so we will usually need to advise our clients about this. Their buildings will not look complete for a while. Sustainable development does not just mean landscape and greening. Fortunately, clients nowadays are more receptive towards spending more on sustainable products and fixtures to have future energy savings.

Sengkang Riverside Park Preschool has a green roof supported by steel ribs designed using advance computer software to arrive at this final structure.

John McLaughlin

Principal, MKPL Architects

McLaughlin joined MKPL Architects in 2001.

Based in Singapore since 1997, he has been involved primarily in the design and creation of residential and institutional developments of various scales for Singapore's leading developers and tertiary institutions.

These projects have won a number of local and international design awards, including the RIBA international Award, President's Design Award and multiple SIA Design Awards.

He is committed to design excellence in a holistic way, through his hands-on approach to architecture, which sees him deeply involved in the craft of detailing and simultaneous creation of highly-liveable environments.

His focus is on the development of tropical architecture, with a strong emphasis on passive design strategies that enhance low-energy building solutions.

In recent years, in an effort to make construction more sustainable and buildings healthier, he has developed an inclination towards the adoption of building technology to change the way buildings are built, experienced and used.

Every project is approached with a blank page. To him, design is driven by the need to push onwards in developing the ideals that emphasise the user experience and the buildings' place in its environment.

This is motivated by a fearless approach to experiment with new ideas and an enthusiasm for learning. The ultimate goal is to push boundaries in the pursuit of better architecture for the benefit of society.

Product: **Dekton Laurent**

Photography Singapore Management University

John McLaughlin

ESSAY
Building Education Reform

SMU Connexion is an exciting addition to the Singapore Management University (SMU) City Campus.

It provides various distinctive urban spaces, improves connectivity and strengthens the relationship between the campus, city and the adjacent greenery of Stamford Green and Fort Canning.

The facility houses SMU-X, an experimental learning framework that calls for students to take on real world changes by collaborating on projects with corporate, non-profit and government organisations.

In addition, it houses the Institution of Innovation and Entrepreneurship (IIE). This is a practice-oriented program that fosters innovation and entrepreneurship excellence at SMU and beyond.

A new approach to learning deserved a new approach to design and the process of building.

Developed from the SMU Campus Masterplan, which we authored, this building is the latest part of an interconnected campus.

It stitches together our earlier School of Law with the City Campus and joins (via our other ongoing building) directly to the newly pedestrianised Canning Rise.

Constructed concurrently with the redevelopment of Armenian Street, Canning Rise and Stamford Green, the area will fully enhance the public realm upon its completion and cement SMU's place in the city.

The DNA of this project is strongly anchored by a few principle driving factors:

- The challenge to create a new pedagogical approach based around flexible and inspirational spaces;
- The site's clear importance in a significant location and its contribution to the wider audience due to its inherent porosity and openness;
- An embracing of new and novel technology in pursuit of sustainable, low-energy design;
- A change in the approach to building using technology as the driver;
- Collaboration and coordination of key stakeholders and partners in the building process.

> **"I believe that there is a strong correlation between greened space and welcoming space that improves the experience of our everyday lives."**

These make the eco-system in which the project grew.

The evolution of this project was an exercise in going back to basics and abandoning any pre-learned approach to space-making.

To best understand the user needs, a research trip was conducted to review "best in practice" examples of learning facilities from around the world.

A team comprising MKPL and SMU's key personnel visited a number of well-regarded institutes of higher learning in the US and UK and looked to other examples from around the world to develop a brief for the use of space and the integration of technology to aid a dynamic learning experience.

A rigorous process followed to fine-tune the needs of SMU and to develop the bones of the project.

The scheme was originally envisaged as occupying two land parcels with an abundance of flexible spaces but subsequently was revised to just one – the first of many such radical changes to the program.

As the project came to fruition, the challenge that presented itself was the nature of the site and the extremely prohibitive restriction on access.

It is flanked by a major road on one side (Fort Canning Link) abutting the Fort Canning Tunnel; Stamford Canal occupies its other major boundary and, finally, the third side of the triangular plot is occupied by Stamford Green.

The team sought many solutions to this potential construction problem and this occupied much of the design thinking.

This process of iterating the design and then discarding unnecessary or redundant provisions continued until the project was fully realised and signed off in mid-2017.

It was in the middle of 2017 that there was an abrupt, and most significant, change to the focus of the design.

Around this time, SMU was encouraged to look into greater technological adoption supporting

sustainability and to pursue a productivity agenda in line with BCA's newly focussed objectives.

This translated principally into the exploration of Mass Engineered Timber (MET) and the adoption of a Net Zero Energy target.

This was this achieved via a period of intensive research into the use of timber in construction, including overseas visits by the project team and the engagement of specialist advisors to guide us in our adoption of timber.

We were in truly uncharted territory with little reference and nothing on this scale in Singapore.

Technological adoption focused on two branches: systems and construction methodology.

A hybrid structural system of steel frames and cross-laminated timber (CLT) was deemed best suited to this site due to limitation imposed on height control negating the adoption of glulam beams.

The structural system was optimised to maximise the typical bays and reduce column obstruction, but to also facilitate ease of transport, installation and construction.

Given the adoption of a highly prefabricated and modular structural system, we took the opportunity to rethink the approach to façade design.

The key design considerations in adopting this approach were to optimise productivity, reinforce the experimental nature of the school, reflect the natural setting of the site, achieve a sense of openness and porosity and ensure architectural coherence in relation to the School of Law.

A conscious decision to express the building in timber was made to accentuate the principle building material and create a façade that would age and mature over time, like the adjacent parks.

The resultant timber-cladded modular façades are borne from a highly standardised module and this actually allowed us more free play in developing the building envelope's jutting cantilevers and more complex geometry dictated by the wedge-shape plot.

Early in the construction, a further major change was initiated that would radically shape the design.

We were encouraged by SMU (again with BCA's ongoing initiatives) to consider further rationalisation of the M&E systems within the main spaces.

As we were already developing a customised passive air displacement system (PDC), it became apparent that it was possible to consolidate all the services at high level into a singular module.

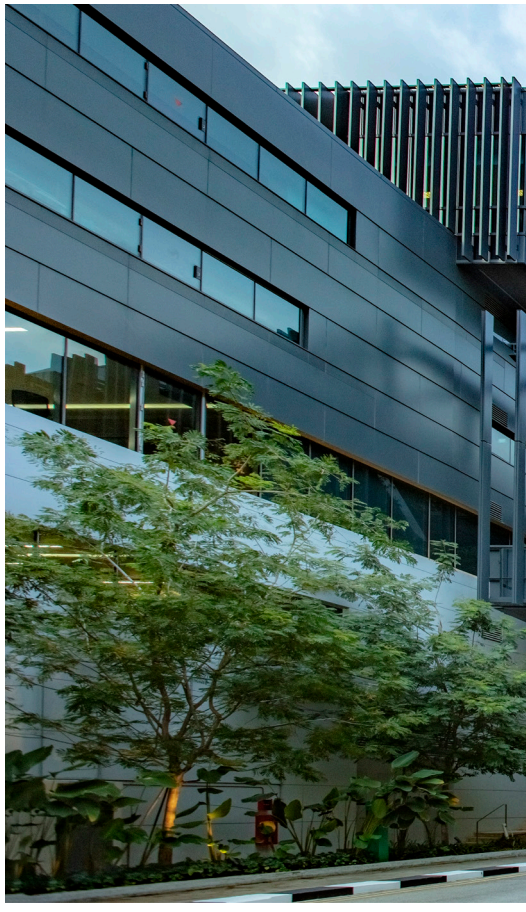
This module could be fabricated off site and be launched, fully complete, into the space.

The problems, though complicated, were not insurmountable.

A concerted effort by the entire team facilitated the change and actually resulted in significant benefits to the construction with a major trade off to the aesthetics in that we freed substantial soffit space – allowing us a more uninterrupted view of the timber structure and an opportunity to showcase the wonderful material. This was definitely a win for all parties.

It is worth stressing that this collaborative approach is not the norm in Singapore and marked a significant departure from the current construction eco-system.

Flexibility was a pervasive theme of the project – both in the sense that the building was designed to adapt to a free



program, and also in the sense that the design underwent numerous, radical changes at various stages.

There was a tangible shift in the process adopted to develop a scheme where there are many unknowns.

This process continued into a new (for us), collaborative construction approach and again demanded extensive time and commitment by all team members to resolve the building's myriad of complex issues.

This is not to mention the trust that had to be placed in newly-formed team members.

The key design considerations of the façade design were to optimise productivity, reinforce the experimental nature of the school, reflect the natural setting of the site, achieve a sense of openness and porosity and ensure architectural coherence in relation to the School of Law.

> **“It is worth stressing that this collaborative approach is not the norm in Singapore and marked a significant departure from the current construction eco-system.”**

An intensive four-month exercise addressed the principle coordination and the building proceeded to site on schedule and on target to meet its fourth quarter 2019 opening target.

The project was successfully completed on time and without compromise. It is already showing that it will be able to meet its key objective as a hub to link this part of the city.

In summary, this project seems to hint at a new, more radical future for building design and development. On one hand, there is obviously the creation of a new typology, technological exploration and a next-generation, sustainable-design approach.

On the other hand, it hints at possibilities for a new working relationship and a challenge to the perceived norms that govern and limit our practice of architecture.

INTERVIEW
General

What is your design philosophy?
Every project is approached with no pre-conceived ideas. Design starts by understanding the wants, needs and aspirations of the client. More often than not, those actual wants are not clearly spelt out and there is a process to extract potential to initiate the design. Unburdening oneself from a standardised approach offers the most potential for new discovery.

What is your greatest source of inspiration?
I am inspired by the hard work and commitment of those people that I spend my professional life dealing with. I believe it was Edison that is credited with saying, "Genius is one percent inspiration, 99 percent perspiration." I love those moments where an idea is crystallised, but I equally adore the grind that is making those moments work. This is something that can only be achieved through teamwork.

What are the three most significant spaces in Singapore for you?
Sungei Kadut/Lim Chu Kang: As an avid cyclist I probably see more of Singapore than most Singaporeans while on rides around the island. I am always particularly struck by this zone that somehow manages to roughly mesh together heavy industry, farmlands, nature reserves and wild landscape. It appears so unplanned and spontaneous. It is the absolute opposite of the image that you see on the Singapore postcard and I think it makes it better for that. Crossing Kranji reservoir and seeing neighbouring Johor really helps to give some idea of our place outside the protective bubble of "City Singapore".

Stadium MRT: While no fan of the National Stadium and its surrounding area (a failed exercise in the development of a public space, if ever there was one), I really enjoy the idea of the celebration of the mundane. The process of dramatically descending into the ground, as the space around you opens and closes up, to take a train somewhere, is strangely satisfying. I think it is something we rarely observe in Singapore. We are often obsessed with the function and efficiency and lack these "moments" in our life.

Finally, my enjoyment of spaces is very much influenced by my stage in life. Currently, the most joy is generated by the weekend traverse through the interlinked void decks at my neighbourhood HDB, daughter in tow and on the look-out for friendly cats. Seeing the "regulars" sitting there with mobile KTV systems and watching people go about their day seems both nostalgic and very much of its time.

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or catalyst for innovation?
Firstly, I think it is necessary to acknowledge that one of the great things about the highly-regulated world of architectural practice in Singapore is that the rules are, in the most part, transparent. Of course, I would like certain rules and controls to be reduced or reworked as they can be stifling to design that pushes forward. There are certainly rules which in implementation, appear to limit the scope of good design in that they look to set a bottom rung of acceptable design outcomes but indirectly limit the upper ceiling for outstanding design. The clever interpretation and interaction with these rules is still the basis for good design in Singapore, but it would be beneficial to the built environment if this were not the only way.

Eco-systems

How does integrating nature within buildings improve people's quality of lives?
In the context of greening the built environment, on one level we have the practical impact of cooling and shading. On another, we are instinctively drawn to appreciate the growth of living things. We seek out the natural. I believe that there is a strong correlation between greened space and welcoming space that improves the experience of our everyday lives.

Greening the city is now part of the DNA of all development. But are these initiatives truly sustainable and durable or simply marketing tools?
Like all things in life, it depends. It depends in part whether the intention to green is done for the right objective, such as to make a city more "liveable" by creating an

SMU Connexion houses SMU-X, an experimental learning framework that calls for students to take on real world changes by collaborating on projects with corporate, non-profit and government organisations.

oasis from harsher aspects of the built environment. On whether this is meaningful or just marketing, I think there needs to be buy-in from users and owners alike, in encouraging the further development of green space. I will add that greening alone is not an end unto itself. It is one factor in making our built environment more people-centric. The improvement of the nation's waterways and the return of wildlife into these areas, the reduction in the need for air-conditioned space and the reduction on the reliance of cars and roads are all parts of a system that requires further development. I am somewhat encouraged by ongoing initiatives but we are far from achieving the required momentum.

Do you face challenges convincing clients and decisions-makers to incorporate to sustainable development and features into a project?

There are a number of proactive stakeholders in the built environment who are championing sustainable design, but they are still in the minority. The cost of development precludes all but a select number of power players from significant progress. As architects, we are burdened with the same conundrum we always have in that we may try to push an agenda that may not be compatible with the commercial realities. ◘

Product: **Dekton Aeris**

Materiality

Materials and textures have expressive qualities that evoke memories and set the tone and atmosphere of a space. The depletion of the earth's natural resources has resulted in more research efforts to source out new and more sustainable materials for construction. Innovation in this field has seen the invention of smart materials and composites not only as façade treatments, but structural skeletons that surpass traditionally-used architectural solutions. Bamboo, timber and the lately developed ultra-compacted surfaces are some examples of such eco-friendly materials. Parametric developments are also pushing the boundaries of materiality and the processes of procuring them. Working with the immaterial should also be a crucial consideration for architects. The way light hits a material at certain angles plays a part in how the material and space is perceived. It is our hope that we will experience continued growth in the field of materiality, enabling functionality to meet beauty.

Matthew Yeo

Director, LAUD Architects

A Registered Architect in Singapore with the Board of Architects, Yeo's diverse experience ranges from small to large-scale residential, institutional, commercial, churches developments and master planning projects.

He was part of the team responsible for designing Tiong Seng Building, a finalist in World Architecture Festival 2018, as well as PCF Large Child Care Centre, a finalist in World Architecture Festival 2018 and recipient of the SIA Design Award 2019.

He is the QP for Punggol Point Woods, which was awarded the HDB Awards 2019 Certificate of Merit Design (To Be-built Housing).

Yeo graduated from the National University of Singapore in 2008 with a Master of Architecture and First Class Honours in a Bachelor of Arts (Architecture).

He was the Valedictorian for the School of Design and Environment (2008) and was awarded the Lee Kuan Yew Gold Medal (2008) and ICI/ Delux Gold Medal (2007).

Product: **Dekton Aeris**

Since becoming a Registered Architect in Singapore with the Board of Architects, Aw has worked on diverse projects such as commercial office developments, institutional developments, residential developments and churches.

He was part of the team responsible for designing Singapore Life Church at Prinsep Street, which was awarded an Honourable Mention (under the Religious category) in the 13th SIA Design Awards, as well as Grace Assembly of God, a finalist at the World Architecture Festival 2016.

Aw graduated with a Masters in Architecture from the National University of Singapore in 2009.

He was also awarded the Best Candidate Award for the 2013 Professional Practice Examinations.

Eugene Aw

Director, LAUD Architects

ESSAY
Creating Joyful Spaces

Our decisions in life are usually dominated by what matters most to us. Architectural practice is the same.

We inevitably fight for things that mean more to us and what we stand for.

Some time ago, the management got together in breezy Sentosa to take a day away from our regular work to spend time setting the vision for LAUD.

Through the facilitated sessions, it became clear that our individual desires aligned, and a few key words were surfaced as representing our collective hopes: family, health, trust, fulfillment.

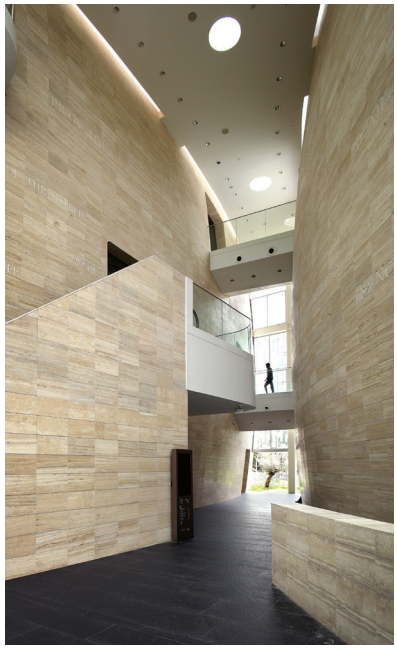
These were the top four words we felt embodied the hopes of our management and staff alike.

At LAUD, we believe that architecture must make a difference to its inhabitants, through spatial experience, and elicit positive emotions. Thus, we believe that LAUD's mission is "Creating Joyful Spaces".

We feature three projects from our recent portfolio to illustrate how this mission guides us in our design and design thinking.

The projects span a diverse range of typologies, including a church, a childcare centre and an industrial/ commercial development.

> **"At LAUD, we believe that architecture must make a difference to its inhabitants, through spatial experience, and elicit positive emotions."**



Photography LAUD Architects Pte Ltd

The central atrium of the Grace Assembly of God (Tanglin Road) church is inspired by the natural rock formations of the passages leading to Petra in Jordan.

Grace Assembly of God (Tanglin Road)

Grace Assembly of God is a strong example of our mission of creating joyful spaces. The project was a design competition won by LAUD in 2009.

The former Senior Pastor of the church had a vision for a new church building for almost 20 years before the actual design competition launched.

The design brief called for various worship spaces, such as a 2,000 capacity Main Sanctuary, 600 capacity Hall for the Mandarin Congregation, 300 capacity Youth Hall, 300 capacity Children's Hall, and ample parking spaces.

The main challenge the LAUD team faced was to create a space that would be the focal point for these different congregations.

This came in the form of a central atrium space created within the void space between the two large volumetric masses of the halls.

The inspiration for the atrium space came from the natural rock formations of the passages leading to Petra in Jordan.

The team was inspired by the spatial quality whereby a person is dwarfed and filled with awe of the space.

As such, a geometric double-curved wall was proposed and clad in natural travertine stone.

To further imbue this atrium space with meaning, the team proposed for the names of God to be carved into the travertine.

These names, which also represent the character of God, are peppered throughout both walls to allow visitors a sense of discovery as they ascribe their own meaning to them.

Natural light was introduced through circular skylights that emphasised different names at various times of the day, throughout the year.

The atrium thus becomes a nexus of the church community, serving both as a pre and post-service space of confluence where members of the church gather for various activities where joy and community is created.

PCF Sparkletots

This project illustrates well the idea of how constraints on construction should not detract from our intent of creating joyful spaces.

Early childhood education is a key component in the development of not just the country's intellectual resource, but also directly related to the workforce numbers.

Parents, especially mothers, who stay home to care for their children are deprived of the ability to work.

In the north-eastern parts of the island, such as the new towns of Punggol, there is a current shortage of childcare facilities to cater for young families.

Thus, the government, through the Early Childhood Development Authority (ECDA), mooted the idea of larger childcare centres that would potentially hold 300, 500 and even 1,000 children under one roof.

PCF Sparkletots is one such centre that has the capacity for 1,000 children.

Our primary focus in its design was to mitigate issues of physical security, medical contingency and play space variety, yet have sufficient segregation that provides suitable quarantine capabilities.

The geometric, circular form is sub-divided with a central trident, which effectively creates three main zones, each with its unique play experience.

Classrooms are arranged along the circular form, affording rooms views outside as well as inside towards the play areas.

A circular ramp brings everyone from the entrance foyer to the second and roof levels seamlessly, allowing one to observe and to be observed as they traverse the floors.

The centre of the circular form is designated as a main dining and multi-purpose space on the first level, and an open landscape garden is found on the second storey.

Lightly floated over the entire plan is a tensile fabric structure that allows daylight and cross-ventilation into the deepest parts of the building, creating a bright and airy environment for play within.

We laid over the plan an orchestrated play of colour mosaics that was adapted from the colour wheel idea.

Since the corridor runs in a perfect circle, each classroom was marked with various colours and these colours would gradate towards the next by the mixing and matching of the mosaics.

We felt that these colours provided an identity for each class and also inject a sense of play into the otherwise neutral palette of colours.

The project has been extremely well-received by the operators, teachers, parents and students alike.

Every building will have different sets of users with sometimes conflicting requirements.

It is to our joy that this space caters effectively to all, yet provides a sense of spectacle for those who enter.

Photography LAUD Architects Pte Ltd

PCF Sparkletots is made up of three main zones divided within a circular footprint, each with its own unique play experience.

Philips APAC Center

Philips was LAUD's first foray into the industrial/commercial headquarter typology.

Up against the big boys in the industry, LAUD won a design competition by proposing a radical idea: to bring the entrance experience to the second storey instead.

This simple move allowed car parking, MEP spaces and other services to be located at the ground floor, yet be suitably hidden from view of visitors and staff alike.

It means that users enter the building at grade and traverse a grand staircase up to the "internal street" on the second storey.

This street is referred as such as it forms the main thoroughfare and heart of the building.

The street is afforded abundance of daylight by a series of skylights atop the five-storey volume atrium.

This open space is surrounded by circulation routes on both sides that facilitate workshops, offices and meeting spaces.

The users going about their business are able to connect with others on different floors and across this atrium.

The client has told us that the common reaction of first-time visitors is a dropped jaw and marvel at how occupants and operations from four buildings can be compressed into one new development, yet offer such luxurious space and sense of openness.

The central street is aided by two cut-outs in the plan to bring daylight to the office spaces, including a larger cut-out for a green courtyard on the second storey, adjacent to the grand cafe.

This gesture allows for the office space to be afforded with access to both unobstructed views out and rich natural daylighting within the otherwise deep floorplate of the open office layout.

Likewise, within each typical floor office layout, a variety of different spaces ranging from small focus rooms, discussion pods, mid-sized meeting rooms, to large conference rooms, are strategically distributed, ensuring easy accessibility as well as freedom of choice, catered to the staff's daily needs.

Wrapping the building is a simple glass enclosure, protected by a fenestration consisting of a mix of circular rods and elliptical aerofoil louvres.

These materials are orchestrated to highlight subtle sweeps and curves, adapted from the original Philips logo.

In the day, these louvres provide sun-shading and protection from solar heat gain, while in the evening, they form the canvas on which Philips' light fittings are trained to create an ephemeral light curtain.

Philips APAC Center is a good example of how basic materials were employed in novel ways, to create an impact that far surpasses the sum of its parts.

Photography Philips Electronics Singapore Pte Ltd

A five-storey atrium anchors the Philips APAC Center, illuminated by skylights cut into the roof.

INTERVIEW
Matthew Yeo
General

What is your design philosophy?

I believe good design is a whole that is greater than the sum of its parts, not only in the tangible aspect of design, but also in describing the collaborative processes that shape the design.

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or as a catalyst for innovation?

Constraints spur innovation. Good knowledge of the rules and regulations can also serve as inspiration for creative solutions.

Have there been any turning points in your career?
A few years back, we had the opportunity to work on designing a series of spaces in the HDB void decks for the charitable organisation Reach Community Services Society. Through in-depth engagement with them, we identified with the strong sense of purpose behind the spaces we were creating. Personally, it was a project that brought my focus of design back to the users; that the spaces created could allow people to experience not only comfort but joy in habitation.

What is your greatest source of inspiration?
My wife, family and friends are important people who inspire me to keep improving. As an office, we are also blessed to be part of a great team where we can bounce ideas freely off one another. This collaborative and collective process has been a great source of creative inspiration.

Materiality

Does materiality contribute to a memorable experience?
Materiality is an intrinsic part of good design. In particular, I find myself drawn to unexpected compositions of materials rather than a single one.

Do you see architects as craftsmen?
Yes, but perhaps less of the actual crafting and more of the orchestrator and alchemist of materials.

What are the materials and/or techniques of the future?
I am looking forward to more eco-friendly building materials, especially through the upcycling of waste materials.

INTERVIEW
Eugene Aw
General

What is your design philosophy?
I believe great design should be simple, clear and easily understood by its users. It should also be user-centric such that they are able to find joy in experiencing the spaces created.

Have there been any turning points in your career?
The turning point in my career was when I completed my first church project and witnessed how people were engaging with the building and space. It dawned on me the actual impact that our work as architects have on people and their lives. From then on, I always remind myself to design with the building's users in mind and put myself in their shoes.

What is your greatest source of inspiration?
I am a father of twin girls. They have always been my biggest source of inspiration as I practise my profession to create a better and more sustainable built environment for them.

If you could give one piece of advice to the younger generation of architects, what would it be?
Stay curious, work hard. Architecture will always be rewarding when you pour your heart into your work.

Materiality

What are your favourite materials to work with?
I do not have a favourite material to work with. I believe different projects have different requirements that call for their own unique material solution.

Does materiality contribute to a memorable experience?
The appropriate choice of materials does contribute to a unique user experience. However, materiality is just one of the many factors that make a memorable experience. I believe the tactile and even sensorial qualities of a space also plays a part in the holistic spatial experience.

Do you see architects as craftsmen?
I believe craftsmanship is a fundamental aspect of architecture. It requires strong dedication and an in-depth understanding of materiality and construction techniques in order to achieve a relevant, bespoke architectural solution. Craftsmanship also humanises our built environment, thereby making it accessible and easily understood by all.

Ko Shiou Hee

Founder and Principal Director, K2LD

Beyond providing shelter, Ko feels that architecture is an expression of our understanding of the world, cosmology and the built environment.

His design philosophy embraces the "sense" and "sensibility" of architecture.

The senses connect the intricate relationships between time, light and materials, to allow spatial freedom that is beautiful in its myriad expressions.

The sensibilities advocate an understanding of the ways the natural beauty of materials can be brought out in construction, enhancing the appreciation of how materials play an integral part in design.

Under Ko's lead, K2LD has grown to an 80-person strong firm with offices in Singapore and Australia since its establishment in 2000.

Its proudest achievements have been the joy, satisfaction and success of its clients, and the privilege of leading fellow architects in collaborative projects.

K2LD is well known for the design of the G Hotel Gurney and G Hotel Kelawai in Penang, Malaysia, where both have won numerous design awards.

Other noteworthy projects include a luxury residential development of eco water villas involving master planning in Zhuhai, China; a boarding primary school for 2,500 students in Shunde, China; Christ Methodist Church in Singapore, which won the SIA Design Award in 2013; and the Happy Bay resort in Shenzhen, China, completed in 2015.

Product: **Dekton Feroe**

Ko Shiou Hee

ESSAY
Sense & Sensibility

I have always been acutely aware of the way materials – in their colours, feel, texture and emotive quality – are able to evoke sensual response.

Materials conjure up the wonders of nature in its mighty creation.

Design inspiration starts with curiosity, not a passive kind of curiosity but one that compels one to ascertain the truth for oneself.

> **“Materials conjure up the wonders of nature in its mighty creation.”**

Glass

In the Coronation Road house (88CRW), investigations were made on the reflectivity and transparency of glass.

It was a very successful attempt to illustrate phenomenology in altering the visual perception of space and an act of blurring with nature with reflection.

The bulkiness of the original three-storey house is made to feel lighter by phenomenally blending into the surrounding tree canopies.

At night, the reverse happens, effectively turning the volume into a lantern.

Stone

In the Winged House, stones of exceptional size and proportion in their raw forms are used to capture their majestic character.

The rustic surface of the granite stones were retained and used instead of treating them with additional manual chiselling.

The marks left behind during the quarrying process were also retained to celebrate the way these stones were harvested for use.

Felled tree trunks were re-attached to the façade of the Windcatcher House to blend in with the existing environment and create memories of the site where a Tembusu tree originally stood.

Metal

In the Golden Box house, metal is used as a mesh, veiling the building façade to dematerialise the volume and scale associated with the proportion of the openings.

Metal has an interesting transformative character as it absorbs and reflects light differently depending on its ambient condition.

The Green House uses copper as a cladding material, together with solid wood trims whenever the metal turns into the opening of the building.

Metal oxidises and tarnishes to give a patina. It literally etches the passage of time on its surfaces, giving it a unique characteristic.

In the design of Christ Methodist Church, a rectangular aluminium extrusion was used to veil the church façade.

A pattern of little crosses was abstracted to create an iconic expression for the new church building.

The aluminium sections were also combined to form a sinuous wave pattern on the east-west façade of the church, acting at the same time as heat filter for the building.

Wood

In both the Windcatcher House and Duo Holland Park Residence, through the concept of reuse, felled tree trunks were re-attached to the façade of the building again to blend in with the existing environment and create memories of the site where the Tembusu tree originally stood.

These projects, humble in their forms, all attempt to disappear either phenomenally or blend in with the environment through the sensitive use of materials.

In the Golden Box house, metal was used as a mesh, veiling the building façade to dematerialise the volume and scale.

INTERVIEW
General

What is your design philosophy?
My design philosophy fundamentally embraces the sense and sensibility of architecture. The senses connect the intricate relationships between time, light and materials to allow spatial freedom that is beautiful in its myriad expressions. The sensibilities advocate an understanding of the ways the natural beauty of materials can be brought out in construction, enhancing the imaginative appreciation of the way in which materials play an integral part in design.

Where did you study and how did it prepare you to start your career?
I studied architecture at Rice University in Houston, Texas and subsequently stayed on to work in the US and Tokyo, Japan before coming back to Singapore. Being in a liberal arts school enabled me to be holistic in my approach to the technically-demanding profession of being an architect. Having worked and lived in Japan also exposed me to the ephemeral existential philosophy. Life is fragile and the force of nature is far greater and will outlast humanity.

> **“Architects must respond in an environmentally sustainable way and also quickly adapt to the ever-evolving lifestyle changes brought about by technological advancement.”**

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?
South-East Asia is heavily dependent on its immediate neighbours for economic sustainability. In the last decade, China and India have grown to be formidable markets. Demand for services and raw materials have also steadily increased. The challenge in this region is whether we can tap on the growing affluence and fast-paced development that will be more sophisticated and complex. Architects must respond in an environmentally sustainable way and also quickly adapt to the ever-evolving lifestyle changes brought about by technological advancement.

In the fast pace development of Singapore's built environment, can we still create meaningful spaces?
Of course we can. Both governing bodies and public and private users must have the common goal of allowing and making (including funding) meaningful spaces that are beneficial to the general population in their intention and design. There are still many urban residual spaces within the city that can be made meaningful if these spaces are not zoned for development to extract the maximum economic return. There are also green areas, like Dempsey and the former Turf Club, that can be left undeveloped for say equestrian activity, within close reach of city dwellers, thus creating a green buffer.

In the Winged House, granite of exceptional size and proportion in their raw forms are left intact and capture their majestic character.

Materiality

What are your favourite materials to work with?
All materials are the same. I love them all. My fear is the substitutes that are flawless, like laminates and ceramic tiles that look better than the real stone; LED lights that produce luminosity that simulate light in a completely different wavelength.

Do you see architects as craftsmen?
I do not know how else to see the architect if he is not a craftsman, an artist and a design-form giver.

What are the materials and/or techniques of the future?
The future is bleak. More artificially-produced, simulated materials shall dominate the market in the name of preserving nature's resources. These new materials shall create new economies but will not curb the fundamental greed of human beings to abuse the environment. There are actually enough resources to go around as long as we use them with restrain and discipline. Truly sustainable behavior is not to stop the use of natural materials by substituting them with artificially-produced replacements. Worse environmental consequences may result from these pseudo-truths that lead to the production of more plastic and inorganic waste that do not easily disintegrate.

A simple, singular, rectangular aluminium extrusion was used to create the veiled façade of Christ Methodist Church.

Wong Zi Xin

Architect, Park + Associates

Wong joined Park + Associates in 2014, where she has spent some pivotal years in her growth to become an architect.

She is embarrassingly and romantically driven by the genuine belief that good architecture – including design that goes unnoticed – has the strange ability to shape our emotions and physiological health.

Architecture, she feels, should be accessible and part of everyday life, and not something reserved for the privileged or elite.

She very much enjoys the problem-solving aspects of her profession, and working and learning from and with other industry professionals. Urban planning and issues are also topics she is passionate about.

Among the noteworthy projects she has completed include House 24 (completed 2016) and 3:2 House (completed 2019), where the memories made while working on them will stay with her for a long time to come.

Product: **Dekton Sasea**

Wong Zi Xin

ESSAY
Creating Meaning In Architecture

Defining Materiality

This is a brief collage of some thoughts that I would like to share relating to the topic of materiality.

In saying that, I hope it justifies the content being at times contradictory and jumbled – even nonsensical. A lot of it is empirical, but I do hope some of them are relatable.

Being assigned the topic of materiality was at first challenging. I sought the help of a dear friend who gave me the wise advice of first defining what materiality meant to me.

Materiality, I decided, for me and in this very moment in my life and practice, is an assemblage of both the material and immaterial in the forming of a building or space.

Materiality can generate the deepest architectural experiences. Oftentimes these are little details that you don't even think about – the unsung heroes that go unnoticed.

Peter Zumthor wrote that one of the most impressive things about Bach's music is the architecture of his composition.

It is clear and legible, and the listener can appreciate the details of the individual elements – melody, harmony, rhythm – without losing the feeling for the composition as a whole.

The role of the whole, as such, is to make sense of the details. I think that is what materiality is in architecture.

Materials that we choose to use should not distract nor should it merely be decorative.

If successful, it should lead to an understanding of the whole building in which they are an inherent part.

During my travels, I have found Carlo Scarpa's architecture, Castelvecchio in this particular instance, to be exemplary in demonstrating this.

The details are legible. They just make sense.

> **"Materiality can generate the deepest architectural experiences. Oftentimes these are little details that you don't even think about – the unsung heroes that go unnoticed."**

Privilege Check

With many projects that we do, we have quite a bit of freedom to select the materials that best fit the design intention and the project.

Being in such a privileged position (because let's face it, comparatively at a global scale, we are, as architects in a very wealthy country, working for very wealthy clients), we ought to use this freedom a little more responsibly, especially in regard to our industry and its environmental impact.

We ought to be doing more, and not be shy about it.

It is certainly not easy to be at that level of being mindful and responsible all the time, because being in a place like Singapore means the deadline is always yesterday.

Haste is worshipped, masked as efficiency, as mindfulness becomes secondary.

We cannot rely simply on legislation, because it becomes easy to fall into the short-sighted trap of ticking boxes, instead of really trying to understand the long-term impact of our decisions.

The problem is systemic.

A Medium of Expression

Diverging a little from materiality in the architectural or building sense, I was listening to a podcast where they were discussing that there is this myth that caring about what you wear, or what you look like is frivolous or unproductive – that clothing and fashion get trivialised a lot.

I do not speak for all of us, but surely most of us, every morning when we wake up and before work, we choose what we wear because we want to project a certain message about our identity to the people we see or meet.

Who often gets associated with fashion?

Subcultures come to mind – goths, punks, hippies, emos – we may even go as far to say women as part of this group of people, who historically have not had much of a platform to share their alternative views and lifestyles, except through their clothing and appearances.

We assign meaning to pieces of cloth we drape onto our skin.

A similar phenomenon applies to the design of our houses and the spaces we try to create.

As architects, materiality similarly has a lot to do with what we want to tell the world – about who we are, what we care about, and our role – what our place is in the built environment.

Someone recently asked us what are some of the key things we look at in a brief.

Besides the functional brief, we also try to gauge the intangibles – the inner desires of our clients, and the message they wish to project to the world.

This is something that people are not always able to communicate. Aspirations, if you will.

And then of course, as architects we have our aspirations too. In our office, the narrative plays an important role in the forming of our projects.

Our desire for a narrative – this need to find some sort of meaning to push the design ahead – I have found personally quite useful in keeping focus on a project, always bearing in mind the original design intention.

This is especially so for projects that span several years from design to completion.

There are of course the nay-sayers that view this as complete rubbish and as one architecture critic wrote, "The search for meaning, narrative, and metaphor is the disease of our time."

I beg to differ. Not so much a disease – I think it is a reaction to the social, cultural, and political climate we live in.

It is perhaps a result of the rise of science, and rapid decline of the role of religion, and with it our belief in a higher purpose.

Maybe it is also a result of late capitalism and how it has taken away much of our sense of purpose.

I think this has resulted in the rise of this thing about finding oneself, and the resurgence of the appreciation for handmade, handcrafted, slow living, slow food and the like, relating to being in touch with our mindfulness.

In the office, we find ourselves increasingly sourcing for materials that reflect the same. Recently we have seen a surge in the use of handwoven rattan.

We are seeing more appreciation for materials and finishes with an added textural quality.

Stone walls, for example, are specified to have a natural, split-face finish that plays with light in a very special way, slowing one's gaze and movement if only for a moment.

Shared World Views

I think sometimes we feel embarrassed about our aspiration or desire to make meaning out of our work, so we say something along the lines of, "Nah, I just know how to bullshit."

Maybe it is us trying to project a sense of humility, but we cannot pretend that a bit (or a lot, depending) of what we do has to do with our ego, our desire to leave some kind of mark or legacy somewhere.

Think about it, our sketches, drawings and thinking cease to exist only in our head and on paper.

> **"I think we often forget that architecture and the role that materiality plays in it has that ability to move us in the way that a Mark Rothko painting might move you, or how that one Radiohead song can overwhelm your emotions."**

What we have been looking at on paper, on screen, and often fighting for with clients, consultants, and contractors ...they become part of the real, physical world. And that is really, really powerful.

Of course though, we should not forget that architecture is more than just a message or symbol – it is for our collective built environment, an envelope and background for life that goes in and around it. Every interpretation is legitimate, and we cannot control that.

For example, our perception and experience of materials and spaces are inextricably linked to our emotional sensibility.

More than just form, texture, colours, or patterns, we make sense of materiality

In reconsidering the conventional entry sequence of residential dwellings, the entrance pavilion of 3:2 House was conceived to create a layered arrival experience, marking the transition between indoor-and-outdoor and public-and-private realms.

by assigning and attaching meanings to them based on our lived experiences and individual world views.

Here, the work of artists Christo Vladimirov Javacheff and Jeanne-Claude, and Do-Ho Suh, to name a few, come to mind.

The way they use their material of choice – and I refer in this case specifically to their use of fabric (type, scale, colour...) – coupled with our individual lives and histories, all affect the way and layers in which we are able to understand, move through and experience their works. I am not trying to put our profession on a pedestal, but I think we often forget that architecture and the role that materiality plays in it has that ability to move us in the way that a Mark Rothko painting might move you, or how that one Radiohead song can overwhelm your emotions.

Or even how when you are at the beach with just the sea, waves and horizon in front of you, you feel so, so small.

These are the things – however transitory – that intervene in our daily lives and enrich it for a day, and if lucky, a lifetime. Sometimes, not at all.

Since emotional sensibilities and memories, and hence perceptions and interpretations, are so personal, the most beautiful part of architecture, or life, is when you have someone come up to you to tell you that they get it.

They get what you are trying to do.

They seek you out because they identify with your world view.

I suppose it is a little about knowing that you are not alone. Life is best when shared.

INTERVIEW
General

Where did you study and how did it prepare you to start your career?
My formal architecture education was at the University of Melbourne in Australia, where the curriculum was very much theory-based. There was a lot of focus on architectural theories and histories in school, and I remember hand-drawing all my design presentations until I was in my fourth year. I think that shaped me in that I have a soft spot for the more empirical qualities of design and architecture – the story behind a design, our senses, our feelings. It was during this time and an especially pivotal summer spent studying art history in Rome, Italy that I developed much of my worldview. All these experiences really helped – mostly probably unconsciously – to prepare me for the professional world.

What is your greatest source of inspiration?
The media where ideas are discussed and debated – books, podcasts, and great talkback radio. I often take long walks and bike rides, and those help tremendously too.

What are the three most significant spaces in Singapore for you?
The podium car park at People's Park Complex: I don't think it is accessible to cars anymore, so it is often used for events but it is one of my favourite things to do on a weekend night to visit and watch over the lights of Chinatown over a couple of bottles.

The cycle route from Marina Bay to Changi Village: I have spent many hours cycling there while catching up on podcasts and having naps by the beach. I feel incredibly recharged after a ride.

My balcony: I spend most of my time at home there with a book and my cat. A lot of time has also been spent there trying to keep my plants happy.

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?
I think one of the biggest challenges is to find the right balance between economic development and how we can address climate change. This is of course a problem not unique to South-East Asia but I think it hits harder for developing countries like those in our region. In architecture, there is already legislation in place such as the Green Mark in Singapore, but we can certainly do more. There are a myriad of ways in which we can address something as big as climate change – even in basic ways that we seemed to have forgotten, such as passive design (orientation, ventilation and the like). We live in the tropics and we should design and behave so. The construction industry is up there when it comes to carbon emissions – we often underestimate our contribution to climate change.

The extensive use of timber in 3:2 House represents a continuation of Park + Associate's exploration of what timber craftsmanship may look like in contemporary architecture, especially in our local climatic context.

Materiality

What are your favourite materials to work with?

I enjoy working with natural materials that allow us to craft – timber and stone come to mind. There is something earthy and grounded about them, and we often find ourselves returning to them. There are so many ways to interpret these raw materials into something that really come into their own.

Does materiality contribute to a memorable experience?

Yes. I am a big believer in the inherent role that materiality plays in shaping our spatial experiences and memories. Peter Zumthor is probably the master of this and he has written and spoken about it extensively. Choosing and assembling materials can be so arbitrary. We should be reminded that the materials we choose to use should not distract nor should they serve merely as decoration. Instead, they should lead to an understanding of the whole building in which they are an inherent part of.

One of my earliest memories is being at home waiting for my parents to come home – I would get bored as a four or five year old child does, and climb the metal grille gate, peering out in hopes of catching a glimpse of my parents' car arriving. What I remember most vividly are the deep forest green colour of the gate, how the grille felt sharp and cold on my feet, and the sound of the Yale lock as I climbed and shook the gate. I think the smallest of choices we make as designers and architects, and how they shape the experience and memory of a person, is endlessly fascinating and inspiring.

> **"We should be reminded that the materials we choose to use should not distract nor should they serve merely as decoration."**

What are the materials and/or techniques of the future?

It is hard to predict but one thing is for sure – digital technology will play a much larger role than it already does. As a romantic, I feel that there will always be a place for an architecture for the senses – mindful, sensible, responsible, human-scale architecture that resonates with us on a much deeper and human level.

The courtyard screen of House 24 was envisioned as a refined and rhythmic façade, drawing attention to its delicate scale, even as a structure that is over two storeys high.

Product: **Dekton Rem**

Typology

There has been an ongoing development of social housing typologies since the inception of Singapore's version, the HDB. As such, unique residential typologies have emerged to adapt to the patterns and behaviours of today's society. Instead of a one-size-fits-all solution, the concept of customisation is growing, which is an exciting prospect for many. The idea of a "sharing" economy is also becoming more popular not only among the millennials, but also for all generations, including families and the elderly. Co-living and co-working spaces are some examples which show that the people are generally more keen to have access rather than assets, and seek a more social lifestyle in work and recreation. Co-working spaces allow flexibility in usage as well as the convenient sharing of knowledge and ideas with people from various fields. To cope with the quick change of occupancies, the other alternative to demolition is to design architecture which anticipates reconfiguration. Architecture can then be in constant evolution, with the ability to be reversed and transformed as needed. Time will tell if this is truly an age of reform for the architecture industry.

Razvan Ghilic-Micu

Associate, HASSELL Singapore

An advocate of evidence-based design and research-centric practice, Ghilic-Micu has a keen interest in innovation and agility.

He has over a decade of professional experience working in Singapore, Shanghai, New York City and Toronto on award-winning workplace, mixed-use, educational, residential and cultural projects.

Based in Singapore, yet active across Asia, his design approach arises from a deep belief in collaboration.

Ghilic-Micu balances practice with ongoing involvement in the Singapore Institute of Architects, where he serves on the Publications Committee as the Features Editor of *The Singapore Architect Magazine*.

He is also a studio guest-lecturer at the National University of Singapore School of Architecture, where he leads the Hassell design studio unit, and sits on the M.Arch Thesis jury.

As a speaker, curator and moderator he has been involved in the Venice Biennale, Singapore Design Week, SingaPlural, ArchiFest and Saturday Indesign, among other forums, and continues to champion good design through inter-disciplinary collaborations and public engagements.

Product: **Dekton Rem**

Razvan Ghilic-Micu

ESSAY
Live, Work, Learn, Play

We see an increasing blurring of boundaries between the way we live, work, learn and play.

These dramatic shifts are spurred in part by globalisation, rapid densification as well as fast-changing technologies.

This can only mean that the expectations we all have of the spaces of tomorrow are much higher and more different than what we've come to know as norms.

At HASSELL we believe that four key factors will underpin successful developments when faced with new paradigms:

1. Experience

Successful developments and particularly workplaces are defined by the experiences they create and foster.

Expectations are set high, and the old mentality of "build it and they will come" is no longer a guarantee of relevance, let alone success.

Experience is the software that brings to life the hardware of our physical environments.

Photography The Work Project, Asia Square, Singapore - E K Yap

A good plan needs a great programme; a set of desirable destinations needs to be connected by equally interesting journeys; planning space is supercharged by planning the time one spends in it.

2. Hyper-amenity

In the new economy of talent-sharing, a new generation of workers does expect workplaces offering the comforts of home, and the amenities of a hotel.

Our co-working projects in Singapore for The Great Room and The Work Project re-imagine the office experience by employing premium hospitality-style service and design, innovative technology and a curated approach to the tenants' activities.

The varied workplace settings are seamlessly blended with breakout spaces, offering them places to focus, collaborate or have a moment of respite.

The same goes for the GlaxoSmithKline Asia House in Singapore, where we designed the architecture, interiors and landscape as one integrated effort to unlock the power of teams under one roof.

3. Space as service

Gone are the days when facilities managers could simply divide the floor area to a fixed square metre ratio per employee and deploy a sea of desks and chairs across the space. The quality of space goes beyond this.

The Work Project re-imagines the office experience by employing premium hospitality-style service and design, innovative technology and a curated approach to the tenants' activities.

Many tenants nowadays demand swing spaces as part of their lease negotiations. Developers work harder than ever to provide agile real estate solutions that address the uncertainties of today's business environments.

New, flexible, block-and-stack models are becoming the norm in workplace design, in order to increase the nimbleness of the real estate proposition to the varying spectrum of organisational types.

4. Authenticity

New generations of employees care deeply about the values of the organisations they work for, and how they ethically align with their vision and ethos.

Design can give shape to the authentic purpose of an organisation, reflect its values and signify through space and design qualities that are very personal to each organisation.

HASSELL has worked very closely with Arup on many projects, and it was a privilege to design Arup's offices in Sydney, Melbourne, Perth and recently Singapore, with Kuala Lumpur currently underway.

Each design journey, while at its core focused on creating places that could only be Arup, has drawn deep inspirations from the urban context and company culture specific to each place.

It's all about the people

While the future of the workplace is indeed driven by the economy, its success is enabled and underpinned by space design and technology.

John Naisbitt is quoted in Frederic Laloux's book *Reinventing Organizations*, remarking, "The most exciting breakthroughs of the 21st century will not occur because of technology, but because of our expanding concept of what it means to be human."

For many enlightened organisations as well as co-working entrepreneurs like The Great Room and The Work Project, workplace success in a crowded market is down to one key fact: putting people first.

For far too long has typology in general – especially in an efficiency-driven model like the workplace – been all about metrics, numbers, space capacity, allocations and utilisation.

HASSELL designed GlaxoSmithKline Asia House in Singapore, conceptualising the architecture, interiors and landscape as one integrated effort to unlock the power of teams under one roof.

Photography GSK Asia House, Singapore - Peter Bennetts

Good design goes beyond square meters and putting people in chairs at desks. The old Fordist paradigm focused on mathematical efficiency is anachronistic, running against the contemporary Humanistic ideals of unlocking human capital.

Good design is about creating community in a genuine and meaningful way and harnessing the creative power of teams.

Innovation is not to be sought in new technologies, but in new ways of thinking about space and working together.

Al Zollar states, "Knowledge accidents happen when people run into each other at places like the water cooler, exchange information, and realize an opportunity for collaboration and a synergy between the projects they're working on. We need to make knowledge accidents happen on purpose, regularly and, most importantly, with intent."

Over the past decade, the laptop-enabled dream of "working from home" has steadily eroded for one simple reason: as social beings, we all do our best work when we are together, and the most serendipitous discoveries do need to balance the alone-time needed for deep work with the creative chance encounter at the watercooler.

It is a matter of skill, insight and imagination to choreograph spaces that enable the social networks of a workplace to best tap into the potential of teams and code-in the right amount of agility to adapt to an evolving activity-based lifecycle.

For co-working space operators, it is a matter of true vision to curate clearly and with purpose communities that work, getting their tenant chemistry right, instead of deploying repetitive formulas on a trope.

Design based on evidence, not on trend

Workplace design is not an aesthetic proposition to be commodified based on the latest trends. That is perhaps the shortest path to guaranteed obsolescence or failure. What works for one tenant, may not work for another.

Although we are no longer bound by traditional occupancy metrics, space is ultimately a complex service that does have to enable a variety of activities in a swift and efficient way, specific to the community it is designed for.

> **"Good design is about creating community in a genuine and meaningful way and harnessing the creative power of teams."**

An agile practice of architecture and design cannot rely on aesthetic skills alone to solve a complex problem that requires among others the knowledge of a sociologist, a design strategist, researcher and experience designer.

The most successful contemporary workplaces are designed by creatives who broaden their horizon to make the best use of complementary consultants, and go through the painstaking process of change along with their client, creating bespoke spaces based on evidence.

Conclusion

So, why co-working?

The impact and proliferation of co-working spaces are too often summed up in trendy beautiful images, while entirely missing the positive, humanistic aspects of how delightful and social work spaces can truly fulfil and unlock the potential of human capital.

People expect more of the places they love, so design must deliver not only through sheer aesthetic devices, but rigorously based on evidence.

Ultimately, the co-working disruption challenges our own imagination and agility as designers, and it is a welcome shake-up to how we perceive typology and our role as creatives.

INTERVIEW
General

What is your design philosophy?

I believe in design emerging from evidence and conceptual clarity, distilled through a rigorous process of interrogation and refinement. I am personally averse to design as an imposition of preconceived ideas and the notion of a "designer style" as an aesthetic signature. Each project has a unique potential that requires both a holistic creative approach and a thorough design process for that full potential to be unlocked and turned into a place

that people will love and a meaningful work of architecture. In that sense, the most rewarding designs are often unanticipated at the outset, yet inevitably effortless once realised.

In the era of robotisation, 3D printing and automation, is the role of the architect still relevant?
More than ever, without a doubt. I think we fear robotisation, 3D printing and automation precisely because we don't know yet how to use them to our advantage. A recent topic of conversation in Singapore and internationally has been the loss of craftsmanship and craftsmen. In reality, architects have relinquished true agency and control over the built product many centuries ago when from master masons and master builders, we evolved to become less involved in the actual making of our designs. Meanwhile, a long lineage of craftsmen and qualified trades prolonged our misplaced confidence in our ability to "make buildings". Robin Evans aptly stated in his 1986 essay "Translation from Drawing to Building" that architects don't make buildings, they make drawings.

With the rise of fabrication, I see many more architects grasp better and take more control of the actual optimisation and making of their designs, which in turn sparks more creativity. With increased automation and computation, we are also able to spend our time meaningfully orchestrating decisions that require true insight, not simply performing menial tasks – like calculating GFA and finding unprotected openings on elevations. For all these reasons, I believe technology empowers us and keeps us relevant at the forefront of our discipline.

Where did you study and how did it prepare you to start your career?
I got my Masters of Architecture from Princeton University after obtaining my Bachelor of Architecture from Ryerson University in Toronto. This is a very relevant question, and I come across it often also at the National University of Singapore, where I currently teach in the Department of Architecture. I believe we still have a misconception about the role of universities, which many see as places where you get taught comprehensive skills that you can immediately apply to a job. Our profession is changing at a massively fast pace so any skills you may learn in school will be obsolete by the time you graduate. If anything, universities should be educating intellectuals to develop the ability to think critically, take ownership of their agency as professionals and drive the discipline of architecture forward. That is true agility and relevance in education.

In that respect, the Princeton School of Architecture was to me a great environment for debate and stimulating intellectual collisions with the leaders of the discipline: Liz Diller, David Adjaye, Stan Allen, Alejandro Zaera-Polo, as well as incredibly inspiring classmates. I believe it fostered a climate of agency, passion and determination that the profession really needs globally, so I did feel it prepared me to find my way and my position in the profession once I graduated.

What is your greatest source of inspiration?
Logic and the processes of unpacking an argument, an issue, a fact and turning it into a generative source for design. Logic transcends scale: from the daily rituals of one person using their home or their workplace, to the large-scale patterns of how an urban fabric or a landscape eco-system works. I am inspired and stimulated by figuring out how things work, and where in the logic of things we can infiltrate to mine completely untapped territories for imagination and delight.

The Work Project at Asia Square offers flexible zoning for a variety of activities, such as relaxing, having meetings and working alone.

Typology

Are there any new emerging typologies in Architecture? And if yes, what are they?

Typology as a concept is becoming slowly eroded by the disruptions we see in how we all live, work, learn and play. For decades, typology seemed to be both monolithic and static. Typologies inherently had very little variation within themselves and they rarely changed, but that is not the case anymore.

Driven by economic factors, we see new models branching out of traditional typologies, like co-working and co-living. Empowered by technology, we also see complete typological hybrids, such as The Academic Workplace, where universities prefer their commons, staff offices and graduate student facilities to function more like a workplace, or education-centric workplaces, such as our recently completed office hub in Singapore for cosmetics giant Shiseido, where learning and hands-on training is at the heart of the workplace.

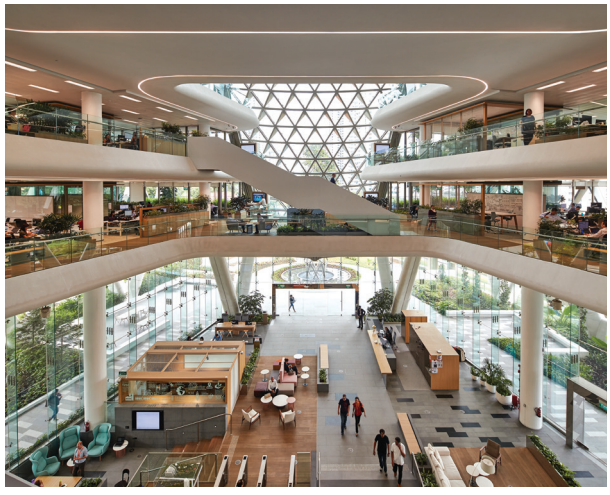
I would hesitate to call them "new typologies". I would rather see them as activity-based models, where the architecture and interior design simply do not fit into the former canons of one particular typology, so they have to respond to a wealth of needs and factors. That is definitely more exciting for designers.

Can buildings be thought of as reversible entities for easier evolution and adaptation?

It depends on how universal the structure and space of a building is. The more specifically designed for a particular function a building is, and the more its overall massing, structure and other physical attributes can respond optimally to only one type of use, the less conducive it becomes for retrofit. Aldo Rossi wrote extensively about his notion of "immovable elements of architecture" that transcend time and place. In today's context, as typology is ever changing and evolving, I believe we should design buildings for obsolescence and subsequent retrofits as a way of future-proofing and ensuring a sustainable use of the embedded energy each project has. Thinking of each building's ability to be evolved and adapted seems like the only responsible way forward in a world faced with programmatic fickleness and existential climate resilience priorities.

Does form follow typology?

Yes. Take a stepped arena: the bleachers are great for watching a game of tennis, but pretty terrible for actually playing tennis on them. There are many parameters defining the range of optimal geometries for a variety of human activity, documented in building codes and ergonomic guidelines. As we unlock new typologies, we constantly find new uses of form, proximity, furniture and architectural elements that define how we inhabit and use spaces. Philip Johnson emphatically stated, "Architecture is the art of how to waste space". I would like to counter that with architecture is the art of how to form space such that it constantly evolves and adapts to the shifting needs of the programmes that inhabit it. To that extent I would agree that form follows typology, but occasionally typology may just find itself comfortably at home inhabiting new forms in ways we did not previously anticipate.



HASSELL designed GlaxoSmithKline Asia House in Singapore, conceptualising the architecture, interiors and landscape as one integrated effort to unlock the power of teams under one roof.

Quck Zhong Yi

Partner, ASOLIDPLAN

Quck is an integral part of the award-winning design practice ASOLIDPLAN that loves creating spaces that are evocative and can connect with the environment and beyond.

He believes that design, across all scales, has the power to affect human relationships.

From interiors to houses and stage design, he has worked on a wide range of project typologies.

Prior to joining ASOLIDPLAN, he accumulated experience in urban design in URA, defence architecture in DSTA, and small-scale architecture in Formwerkz.

Quck graduated with a Masters of Architecture from ESA Paris, and worked briefly with experimental practice R&Sie in Paris.

He is also an adjunct tutor at Lasalle College of the Arts.

Product: **Dekton Trilium**

Quck Zhong Yi

ESSAY
Typological Intersections

"Architecture (...) is not only described by types, it is also produced through them... (The architect) is initially trapped by the type because it is the way he knows. Later he can act on it; he can destroy it, transform it, respect it. But he starts from the type."
- Rafael Moneo, On Typology, 1978

Is typology – the classification of buildings and designed spaces – an objective, science-like taxonomy or a subjective cultural interpretation?

Is there a universal type for "house" or "public space" and what are the elements that define each type?

How far away can a spatial type veer from the current established understanding before it no longer belongs to its type or serves its typological purpose?

Can boundaries between types be blurred, and of what type is the newly-created space of both or of neither?

In our practice at ASOLIDPLAN, we often find ourselves asking these questions in our design process.

During our pursuit to answer these questions, we sometimes nudge the typological boundaries, pushing the design to the limit of what is considered acceptable in its type.

In the occasional moments when the boundaries cross with another type, resulting in what we call "typological intersections" – the spot in which the project appears to belong to two different types – the work may appear unusual, perhaps a little uncomfortable.

At a typological intersection, a project looks and functions less like its primary type, and a little more like the secondary.

Sometimes the secondary role takes a life and identity of its own, and the primary is subsumed under it.

Notable examples by other architects include the Marina Barrage in Singapore by Architects Team 3 (a pump station for a barrage with a spiral green roof that has become the preferred spot for picnics and kite-flying in Singapore) and the recently-completed CopenHill Power Plant in Copenhagen by BIG (a power plant with a ski-slope roof).

Both are examples of typological intersections between a utility building and public leisure space. Both projects surprise, delight, and question.

More importantly, could these two works give rise to something new in the typological spectrum?

It is with this exciting potential in mind that we pursue typological intersections in our projects. We are constantly asking ourselves if one type can be another.

Through the four selected projects below, we illustrate how our pursuit for typological intersections result in interesting design outcomes.

National Day Parade 2018 Stage Design – Intersection of Stage and Public Space

The National Day Parade in Singapore is held annually on the Float at Marina Bay, a floating platform on the bay with the signature city skyline as a backdrop.

From the start, Creative Director Boo Junfeng envisioned a stage that is visually porous and allows performances on the water to be seen by the audience.

Being architects with some background in urban design, we shared this vision and wanted to create a stage that respects and responds to the morphology of Marina Bay.

We used urban design strategies throughout the design of the stage: creating a tier up from a flat main stage to a step-ramp topography for a strong visual connectivity between the stage and the audience; a visually-porous vertical backdrop of pivoting screens flanked by fixed LED screens to balance between the need for film projection and transparency.

The openness of the pivot screen backdrop also allowed for lines of sight between the audience and the public on the waterfront promenade behind the stage, hence creating a sense of connection between the stage and the bay.

Like in urban design, the materiality of the stage was critical to ensure coherence of the stage with the bay.

We picked the colours of the bay – nine greys, greens, and blues of the water, building façades, sky and reflections – to apply onto the stage, in a tessellated pentagon pattern

derived from the performance in Act 1 of the show.

The result is a stately, elegant stage that sits harmoniously in front of the city skyline, as if it was an integral part of the public space in Marina Bay.

Under A Cloud – Intersection of House and Institution

This unbuilt proposal of a Good Class Bungalow was designed for a pair of twin brothers and their respective families.

The brief called for a pair of houses and generous shared spaces for entertainment and for the children of the growing families to play and learn.

We saw this unique brief as an opportunity to explore symmetry, an unusual direction in contemporary residential design.

A pair of externally identical but internally individualised houses flank a double volume grand dining hall in the centre.

The three blocks are bound together by an expansive cloud-like roof that provides shelter and diffused daylight down into the covered spaces.

The grand dining hall planned for guest chefs abuts a deep veranda that stretches from one house to the other.

The veranda connects via a set of grand steps to an Olympic length pool that would cascade into the lush tropical greenery of the adjacent Green Corridor (a former railway reserve).

> **"As society becomes more complex and dynamic, as technology opens more possibilities, and as climate change forces us to rethink the way we design and use resources, it is vital to constantly question established typological norms."**

The upper floor of the central block would house a children's activity room with attached roof terrace, functioning like a crèche for the potentially 10 children of the two families.

With the programme comprising spaces of institutional proportions, it is little wonder that the house presents institutional qualities, perhaps like a contemporary palace.

Founders' Memorial Competition Entry – Intersection of Courtyard and Landform

The Founders' Memorial is planned to be a memorial for the founding figures and values of Singapore.

The site is at Bay East, the undeveloped eastern part of the three-part Gardens by the Bay, across the Marina Channel from the famed conservatories and supertrees of the Gardens.

Our competition entry was inspired by the epitaph of Sir Christopher Wren – *Si monumentum requiris, circumspice* (If you seek his monument, look around you) – and wanted to create a landform-like gesture to ground the proposal and remind that the land is the monument.

We took the wavy paths of the existing landscape master plan of the garden as a starting point, rationalised it into a grid, intensified it at the centre of the site, and finally lifted up parts of the

ASOLIDPLAN's concept for the Founders' Memorial takes the wavy paths of the existing landscape master plan of the garden as a starting point, rationalises it into a grid, intensifies it at the centre of the site, and finally lifts up parts of the ground to house the programme.

ground to house the programme.

The brief highlighted five founding figures and the values they represented.

We took this cue and designed five courtyards to punctuate the landform to create introspective and evocative spaces.

These courtyards would form part of the gallery journey, along which visitors would experience alternating spaces of informative galleries indoors and contemplative courtyards outdoors.

The visitor experience is a result of this intersection of the courtyard and the landform type.

The Holey Moley – Intersection of Corridor and Activity Space

With the interior architecture of this HDB (Singapore's public housing agency) apartment, we shuffled the internal layout to optimise views of a beautiful waterbody outside of the living and dining spaces.

This resulted in a long corridor across the apartment connecting bedrooms on both ends.

We turned this problem into a design concept by asking ourselves if a corridor can be a fun and active space.

This led us to explore the skin between the corridor and its adjacent bedroom: mini windows between the bedrooms and outside for visual connectivity, recessed shelves for display and for the resident cats to play in, and similar apertures in the ceiling for lighting.

Building on the language of playful apertures, we chose a colourful terrazzo tile to be used throughout the corridor.

While the terrazzo is confined to the corridor, an exception is made with the kitchen/dining island block, as if it was a volume that popped out of the corridor.

In this project, the corridor type is redefined and intersects with that of an activity space, resulting in a delightful new space in the apartment.

Through these four selected projects, we hope to demonstrate the potential of approaching spatial design through typological intersections.

As society becomes more complex and dynamic, as technology opens more possibilities, and as climate change forces us to rethink the way we design and use resources, it is vital to constantly question established typological norms and perhaps the approach of creating typological intersections may be a possible way to do this.

A colourful terrazzo tile is used throughout the corridor of a HDB apartment designed by ASOLIDPLAN.

INTERVIEW
General

What is your design philosophy?
We believe in contextual design – that each project has a unique context that is a confluence of site, client and time. A design concept derived from the unique context would then be relevant and coherent.

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?
Climate change with rising sea levels will affect many of the major cities in South-East Asia, especially the coastal ones. We need to design with principles of waste and carbon reduction to stop contributing to climate change, and we need to actively consider the implications of a changing climate in our designs.

> **“Meaning in spaces is created when there is an intentional effort to connect to something bigger and beyond: to a person, an event, another space, another time, a story, a history or even a projected future.”**

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or as a catalyst for innovation?
All thriving metropolises around the world e.g. Paris, New York and Tokyo, have been developed through strong urban planning and urban design regulations. We see them as just one of the many forces shaping design: natural forces like gravity and climate; economic forces like cost and business viability; social forces, and even the emotional forces of clients. These make up the context that informs the concept and design.

In the fast-pace development of Singapore's built environment, can we still create meaningful spaces?
Meaning in spaces is created when there is an intentional effort to connect to something bigger and beyond: to a person, an event, another space, another time, a story, a history

The National Day Parade 2018 stage design respects and responds to the morphology of Marina Bay.

This unbuilt proposal of a Good Class Bungalow is an exploration in symmetry, an unusual direction in contemporary residential design.

or even a projected future. It does not need to be overly designed or excessively nostalgic. Sometimes the absence of a design intervention is the most meaningful. It is not the pace of development that threatens the creation of meaningful spaces, but the ease of copy-and-paste "design" with its resultant dilution of identity.

Typology

Are there any new emerging typologies in Architecture? And if yes, what are they?
We see hybrid typologies emerging. Perhaps in an era where architects feel complicit in the resource-consuming industry of development and construction, we try to opt for the next best thing, which is to do more with the same resources of space and materials.

Can buildings be thought of as reversible entities for easier evolution and adaptation?
Reversible in time, indeed. After all, there seems to be a certain order of longevity and adaptability in the elements of construction: substructural, superstructural, architectural, mechanical and electrical and interior. Stripped of its architectural elements, like walls and façade, a building is left with columns and slabs that can be repurposed for other uses.

Does form follow typology?
To paraphrase Rafael Moneo, the architect starts from the type, and is initially trapped by it, but can later destroy, transform or respect it. While the making of form may or may not eventually follow typology, the reading of the form is still very much informed by typology.

Theodore Chan

Senior Director, CIAP Architects

Chan joined CIAP Architects in 2000 and has been instrumental in the design and implementation of several award-winning healthcare projects.

These include Mt Elizabeth Novena Hospital, NUHS Medical Centre and Yishun Community Hospital.

In 2019, he was a Finalist at the World Architecture Festival, Amsterdam and recipient of the Green Architect Award that is jointly presented by Singapore Green Building Council and Building Construction Authority.

Prior to joining CIAP Architects, Chan had 11 years of experience in several distinguished architectural firms, such as Tangguanbee Architects and SAA Architects.

He was directly involved in several award-winning projects, which included The Picture House (Cinema Complex), Bungalow Houses at Mountbatten Road (Honourable Mention Award from the Singapore Institute of Architects in 1992), World Trade Centre Harbour Pavilion (SIA Design Award), Hotel Rendezvous (URA Conservation Award) and Jalan Besar Stadium (Structural Steel Society Design Award).

Outside of his practice, Chan served as President of the Singapore Institute of Architects from 2012 to 2015, where he developed the curriculum for the Architectural Practice Course (Board of Architects and Singapore Institute of Architects) and the National Competency Standards for Architectural Practice (Workforce Development Agency).

He also served on several key industry panels, such as the Board of Architects (Education Review & Accreditation Panel), BCA Green Building Master Plan Advisory Committee and URA Conservation Advisory Committee.

Chan is a member of NParks UNESCO World Heritage Management Board overseeing the Singapore Botanic Gardens.

Product: **Dekton Liquid Shell**

ESSAY
Future-Proofing The Profession

It has been widely anticipated that by 2050, 65 percent of the world's population will be above 65 years old and living in an urban environment.

This urban silver tsunami will place unprecedented strain and challenges on the built environment, especially on the way we consume the earth's natural resources.

Tight spaces and dense environments make designing sustainably extremely difficult.

Riding The Sixth Wave of Technology

History has shown that since the late 1700s, economic growth has always followed technological breakthroughs.

From the advent of the steam engine then, right through to the early 2000s (advent of the Internet/Information Communication Technology), there have been five major "technology waves" of approximately 50-year cycles that have driven economic development.

We are currently riding the sixth wave – that of intelligent technologies driven by environment-related technology, bio-technology, nanotechnology and healthcare technology.

If architects are to stay relevant in the future, it is imperative that they take seriously this sixth wave of technology when designing the built environment of the future.

The thinking behind this latest wave of technology embraces the following design paradigms:

1. Waste = Opportunity: Manage it, Reduce it, Recycle it, Use it.
2. Sell the service; not just the product.
3. Alignment with the digital revolution and embrace all that it entails.
4. The digital and the natural will converge.
5. When in doubt, look to nature.

In our work as orchestrators of the built environment, architects must adopt the same paradigms or risk becoming obsolete.

> **"If architects are to stay relevant in the future, it is imperative that they take seriously this sixth wave of technology when designing the built environment of the future."**

Alignment With United Nations Goals For Tackling Climate Change By 2030

Another key objective that architects must pay attention to are the 17 United Nations Sustainable Development Goals to be achieved by 2030.

Out of these, 10 are linked with the built environment:

1. Good Health and Well-being
2. Clean Water and Sanitization
3. Clean and Renewable Energy
4. Decent Work and Economic Growth
5. Industry, Innovation and Infrastructure
6. Sustainable Cities and Communities
7. Responsible Consumption and Production
8. Climate Action
9. Life Below Water
10. Life On Land

Again, these are yet another set of existential design challenges that architects must face bravely.

Recent Pritzker Prize Winners

But all is not lost, as we begin to see the emergence of new, relevant initiatives by recent architectural heroes who are giving new meaning and direction for architects to emulate.

A look at the work of the recent Pritzker Laureates Wang Shu, Shigeru Ban, Alejandro Aravena and Balakrishna Doshi reveals a trend that community-based work (excellent architecture focused on community well-being) is what is needed most; far more urgent, important and significant than the glamour of form or aesthetics.

But perhaps, the most telling incident of this trend of wellness and meaningfulness in architecture is the final design of Tokyo's 2020 Olympic Stadium.

Japanese thought-leaders, after what I believe to be an intense soul-searching review, passed over the flamboyant, opulent and budget-bursting architectural design of Zaha Hadid for Kengo Kuma's design.

The final product is very much infused with overtones of traditional Japanese architectural craftsmanship, albeit interpreted in modern contemporary style.

For me, this says a lot about the future trend that architecture should take, when Japanese society (arguably one of the most technologically-advanced societies, yet proud of their traditions of craft and design) makes such a design call.

Identifying The Challenges In The Urban Built Environment

While we in Singapore have, for the past 50 years, made remarkable progress in our "city in the garden", it has come at the expense of the softer, humane side.

I think it is now time that we pay more attention to the following forgotten aspects of our built environment:

1. Our heritage architecture is being either eroded or gentrified (losing the organic ground-up feel of architecture). We must not allow a disconnect with our past, given the intense commercial forces of en bloc redevelopment.
2. Commercialism is unjustifiably downplaying the importance of community-gathering spaces for spontaneous recreation and creative expression. This must be rectified.
3. Embracing sustainable technologies that enable buildings to be constructed faster, safer and cause less nuisance to existing neighbourhoods.

Embracing New Technologies For New Modes Of Urban Development

For the next 50 years, the relentless onslaught of the next wave of technology (on which future economies will ride on) will be driven by environmental, bio, nano and healthcare technologies.

These will leverage upon digitisation and an exponential rise in computational power to create circumstances for new and probably disruptive products and services.

I believe that these will empower our work as architects as we research into the following new modes of urban development, some of which our provocative pioneer architects have begun to initiate:

1. Re-urbanisation (Tay Kheng Soon): Satellite micro, comprehensive settlements that include developments for housing, agriculture, education, commerce and nature in an area of one to two kilometres in diameter. This will reduce the need for mass-travelling and resource-intensive, overcrowded mass centralised townships.
2. Skylands (Tan Cheng Siong): A second or third stratum of the city is elevated over harsh ground transportation networks that are limited at grade level.
3. Greenfloats (Shimizu Corporation): Comprehensive floating high-rise settlements extended over our coastline. Given we are unaffected by severe natural disasters such as earthquakes, tsunamis or typhoons, Singapore is ideal to test bed such innovations.

Chan's private residence in Singapore adopts a slew of passive design techniques, including cross-ventilation and optimal daylight penetration. Classic building materials are also used in an unadorned state.

New Rules For Buildings In Equatorial Climates

A low-lying fruit that we can harvest at this moment would be to research into ideal equatorial façades.

Singapore arguably is the most developed city in the equatorial belt, yet there has been no concerted effort into researching and developing ideal equatorial façades that can mitigate weather elements of sun, rain, ventilation and more recently air-pollution from haze conditions caused by indiscriminate burning of neighbouring countries forest.

More air-conditioning simply cannot be the answer. We have the resources and talent to rise to this challenge.

When we strike a right balance and derive optimum solutions for these ideal equatorial façades, Singapore architects will be poised to be leaders taking the world of architectural design into the next big thing of the future.

Imagine the potential.

The Architect's Response

Our work as orchestrators of the built environment has thus been cut out for us for the next 50 years or so.

It is now time, more than ever, for architects and designers to re-define their role in society, reminding themselves of their ordained primary role of creating a built environment to sustain life.

In this respect, they must arm themselves with the talent to design architecturally sublime forms.

> **"It is now time, more than ever, for architects and designers to re-define their role in society, reminding themselves of their ordained primary role of creating a built environment to sustain life."**

More importantly, they must understand the technology and be equipped with skill sets required to deliver such architecture, with an enlightened consciousness to produce evidence-based solutions that use resources optimally and sustainably.

Les us remind ourselves that great architecture is:

1. Serious and thoughtful
2. Socially responsible
3. Simple to build and easy to maintain
4. Sustainable use of resources in a circular economy
5. The addition of wellness and meaning to humanity at large; and not just those who can afford it

Only then will architects survive the future by reclaiming their long-lost relevance and stewardship by becoming healers of the built environment and future-proof their profession.

The National University Hospital entrance has deep canopies that are a contemporary interpretation of classic equatorial architectural elements. The façade design has been proven to provide up to 75 percent of shade annually.

INTERVIEW
General

What is your design philosophy?
Beauty is intrinsic in the search for an optimal design balanced between function and delight. Every element that I include in architecture must stand the scrutiny of function, meaning and be evidence-based. I am a firm believer that it is the architect's duty to be responsible in their use of technology and resources to heal the built environment.

What are the three most significant spaces in Singapore for you?
My favourite building is the Concourse, designed by Paul Rudolph. In my opinion, it is the best high-rise architectural form in that the higher floors protect the lower floors in modules of three. That, to me, is a sublime architectural response to our equatorial climate.

I also love The Padang. The classic plaza-field formed the neo-classical architecture of the former Supreme Court and City Hall, flanked by the Cricket Club and Recreation Club, and is the power space of Singapore for me.

Finally, I love all the old British military estates, designed by engineers and architects of the British Forces during our colonial era (Dempsey Camp, Changi Camp, Seletar Camp etc.). They really teach and embody the meaning of sustainable architecture, back in the day, before air-conditioning was invented.

> **"I am a firm believer that it is the architect's duty to be responsible in their use of technology and resources to heal the built environment."**

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or catalyst for innovation?
It is a barrier to me. All the increased weight of regulations are turning off our talented designers from becoming architects. The new regulations do not necessarily translate into better or safer buildings; the authorities should trust our architects more and not over-legislate the processes, which I feel is the current situation. We are matured enough to understand our professional responsibilities, without imposing draconian, punitive measures.

Yishun Community Hospital is a study in naturally-ventilated architecture. Its interior ambient temperature is kept between five and seven degrees lower than the outdoors, due to effective sun shades that provide up to 70 percent of shade annually.

If you could give one piece of advice to the younger generation of architects, what would it be?
Be conscious and claim back our role as the master builder. To do this, arm yourself with deeper knowledge of building technology and practices, and an attitude that architects are healers of the built environment.

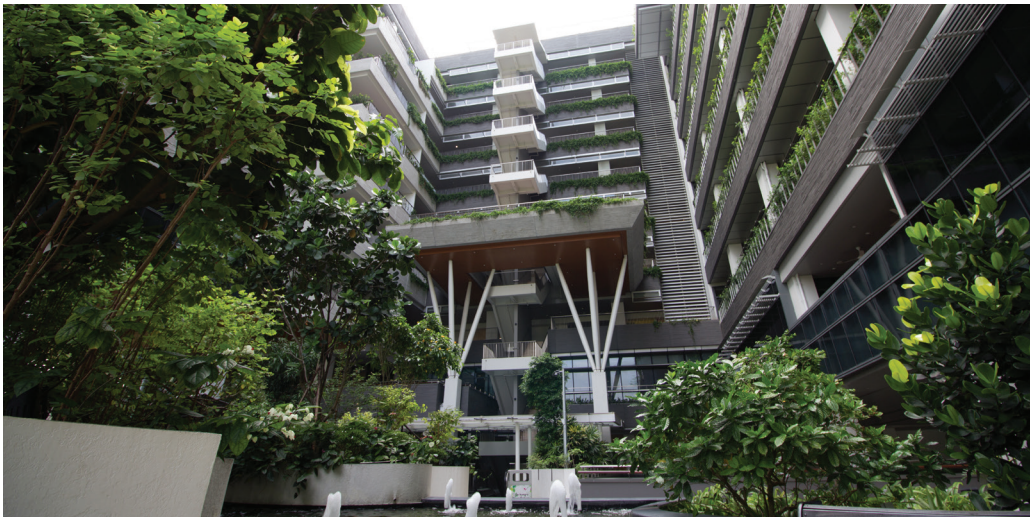
Typology

Are there any new emerging typologies in Architecture? And if yes, what are they?
I think modular construction will really take off in Singapore. At the moment, because of the limitations in 3D printing in building, architectural forms in modular construction are rather standardised. Inevitably, 3D printing technology will come in a big way in construction. When that happens, forms in architecture are only limited by imagination.

Can you share with us a great example of an adaptive reuse project?
I think the evolution of the old Supreme Court and City Hall into the National Art Gallery is perhaps the most outstanding example of adaptive reuse in Singapore in recent times. Some of the parts of our older HDB estates also have great potential for adaptive reuse; so too do our first-generation post-independence school buildings. Many are derelict and unused. Why not turn them into facilities for the promotion of artistic and design pursuits and businesses?

Does form follow typology?
A well-designed building informs people of its intended use or function through its architectural expression; via its form, via its façade/elevation, technically or aesthetically. As such, yes, form follows or, more importantly, is the result of the typology of the architecture. Because it could also depend on historical and cultural references, form is therefore constantly evolving.

Case in point is church architecture. Contemporary places of worship look very different from those built in the past. This is due to the evolution of faith practices, rites, rituals and building technology. But in the face of these changes, its design intention remains the same: to be a spiritually-quiet space that evokes reverence, peace and calm, where the faithful can gather to worship and communicate with the Almighty.



Lush greenery is integrated in the courtyard of the Yishun Community Hospital to evoke the ambience of a garden. Studies have shown that long-stay patients exposed to nature recover faster.

Product: **Dekton Liquid Sky**

Human Factor

Inclusive design involves so much more than just ensuring accessibility for people of various capabilities and needs, but to allow the reconnection of communities across ages and from all walks of life. The level of design innovation can be seen largely in the two extremes of the age spectrum: the very old and the very young. The often-neglected silver generation requires spaces to help them feel like an engaged, contributing member of society. Schools are starting to challenge the design of conventional classroom settings as an effective means to help children learn valuable lessons about the world around them – things which often cannot be taught in textbooks. Therefore, schools are increasingly becoming more connected to their surroundings to encourage learning beyond the classroom. Millennials are also changing the way the built environment is experienced and altering the consumption of spaces. Could the future of our built environment be spaces led by social innovation and adaptive evolution?

Khairudin Saharom

Principal/Director, Kite Studio Architecture

Khai established Kite Studio Architecture and Kite Studio Workshop in 2010 to provide architectural and interior design services that strive to seek an invigorating approach to design and heighten spatial experiences.

He is determined to bring an incomparable level of craftsmanship and detailing to his works, while providing strong client support, consultancy and project management services.

It is in this passion and spirit of constantly approaching design with vigour and relentlessly pursuing high standards of service that the foundation for Kite is built upon.

Chrysanthemum Collection, the furniture arm of Kite, was founded in 2016 as an extension of the company's vision to create a holistic solution to design, based on craftsmanship and seamless continuity of the design thought process.

Prior to setting up Kite Studio, Khai helped re-establish Aamer Architects and led the firm's signature projects.

Some of the most notable ones include high-end residential developments in Singapore's prime districts, as well as The Landmark, a 30-storey mixed development in Penang, Malaysia.

In 2018, Khai was selected as one of the leading architects under the age of 45, as part of the Urban Redevelopment Authority's "20 under 45" initiative. He was identified by The Business Times as one of eight to look out for.

Product: **Dekton Liquid Sky**

Khairudin Saharom

ESSAY

Humanity in Architecture: Honouring Beliefs, Respecting Context, Forging Relationship

In this era where technological advancement is being embraced for its efficiency and accuracy, there is a strong, growing need to ensure that humanity is still preserved and celebrated.

This becomes more crucial in architecture as we use Big Data and integrate AI (Artificial Intelligence) and VR (Virtual Reality) in our processes and design work. At construction sites, there is a constant need to automate laborious work, introduce robotics and modulate building parts to improve construction efficiency and accuracy.

However, there are concerns that these will potentially affect the human factor in architecture, as values of craftsmanship and the "soul" of a building gradually disappears.

At Kite Studio, we believe that balance is key. Technology should be harnessed in a way that it releases us from repetitive laborious work so that we can concentrate on developing our craft and giving soul to our work.

We do not subscribe to any particular style or trend. What molds our design processes are factors that we believe celebrate humanity.

This manifesto can be summarised in three prongs:

1. Honouring Beliefs

Culture and tradition characterise us as people. Often, they give us identities and colour our lives and environment with intangible and tangible elements.

There are many ways how these elements can be articulated in architecture.

In Asia, *feng shui* plays a critical role in setting up of the design process.

As *feng shui* requirements may sometimes ascertain spatial organisation and orientation, it is always important that these requirements are identified early at the drawing board, so that articulation is smooth and can be abstracted seamlessly in design.

> **"Technology should be harnessed in a way that it releases us from repetitive laborious work so that we can concentrate on developing our craft and giving soul to our work."**

Sometimes these *feng shui* requirements can be unusual and defy convention. When this happens, we take it up as a challenge to think of ways to elevate it to become unique features that define the work.

In Jade House for example, the central courtyard that anchors the spaces was initially designed as a lush garden with trees and ferns. However, the *feng shui* for the home dictated that no plants are supposed to be planted in the ground of the courtyard as the roots will "suck up" all the good *qi* from the ground.

Instead, we inserted a hanging garden. A structure consisting of self-irrigated planter boxes of varying sizes mounted onto a steel frame was hung above, with platforms extended from the upper floors.

The structure turned out to look like a treehouse in the middle of the courtyard. It fulfilled the initial intent of creating lushness in the courtyard, while still adhering to the *feng shui* directive.

In another home, we skewed the entire courtyard orientation to align to the direction of Ka'ba, the direction of prayers for Muslim.

Besides allowing activities to spill out fluidly, this courtyard is also used for praying together with family and relatives.

The courtyard assumes the datum for the rest of the functional spaces. The slant of architectural elements set against the orthogonal boundary provided the house with an interesting yet meaningful narrative driven by respect for belief.

Jade House is anchored by a central courtyard embellished by a hanging garden.

2. *Respecting Context*

This is about acknowledging that every site is different and embracing what it presents to us in our design process.

At Kite, context often provides inspiration for design, as we attempt to decipher its potential by understanding strengths and weaknesses.

Maya is one of the projects that was blessed with an amazing site. The house was to be built on the top of a hill overlooking lush greenery and great vistas beyond.

However, the greatest challenge was to fit in the brief that required rather an extensive built-up area.

The last thing we wanted to build was a huge house that stands out like a sore thumb on a hill and disturb the quaintness of the neighbourhood.

Our strategy to tackle this was to create a landscape basin allowing part of the building to be sunken.

This reduced the mass of the house, while providing a unique basement that opens up to lush greenery that is the landscape basin.

This allowed us to come up with a home that respects the streetscape, preserve mature trees that provide sense of scale, while taking full advantage of the hillside context.

We have also encountered challenging, uninspiring sites. But we believe that even for the most boring of sites, there will always be ways for architecture to present itself in ways that excite.

For the Jelita Gallery House, we extrapolated good vistas that could be framed at every level.

The form of the house is conceived by rotating the plans at every level to capture and frame the best vistas the site can offer.

If a space needs to be propped up to enjoy a good view, the levels and surrounding walls shift. This narrative gives the house its dynamic form.

The house opens up most southwards at the second floor, as this is where the expanse of a green belt can be experienced.

This is also where the pool is placed, together with the family entertainment deck.

In another project that we named Naga (which means “dragon” in Malay), we experimented with folded forms and twisted planes that responded to site context.

The form folds outwards and opens up to good vistas and lush gardens. It folds inwards to block off undesirable views, shun away from the hot western sun or when the spaces require privacy.

This strategy where the floors fold up to become walls, and walls fluidly become ceilings and the roof, resulted in a dynamic form that blurred the definition of conventional architectural elements.

3. *Forging Relationships*

As architects, we must think about the impact of what we design – how the actual built form responds to the surroundings and vice versa.

We are responsible for ensuring that what we design contributes to the surroundings positively. This will ensure the longevity and sustainability of our work.

The concept for the Festival Pavilion that we designed for ArchiFest 2018 was inspired by public housing’s void deck, perhaps the most iconic public space in Singapore.

The void deck is a flexible space that is most transformative. You may

Maya, a house built on the top of a hill, has a landscape basin that lets part of the building be sunken.

attend the wake of a neighbour today, and yet celebrate a wedding tomorrow at the same space.

It is where the community gets together over different occasions, informally or formally.

This was the unique quality that we attempted to extract and abstract for the pavilion.

Even though the pavilion was a temporary structure, we wanted it to become an interactive public space that allows flexibility in use.

The structural datum mimicked the conventional void deck, but the slanted orientation and raw expression of exposed re-bars attempted to address flow of people at the promenade and convey the message of sustainability respectively.

> **“We are responsible for ensuring that what we design contributes to the surroundings positively.”**

At the same time, there were movable portals that could be arranged to create a desired level of privacy for activities being held.

Just like a typical void deck, the passageways were fluid and non-restrictive even when private seminars or closed-door functions were being held.

While the physical boundaries between public and private were blurred, the psychological boundary was maintained via social respect and communal understanding.

This delicate relationship between architecture and people is truly special and precious. It is this relationship that celebrates humanity.

Sometimes this relationship is already present in the current context.

For instance, we discovered this same relationship as we began our design process for the St. John’s Home For The Elderly.

The brief was to demolish the existing building and develop a new, bigger facility that can accommodate more seniors.

The existing facility had already established a strong relationship with people living within the same neighbourhood.

Most of the volunteers are the residents of the surrounding homes. There is a strong sense of community within the existing compound.

Even the children in the neighbourhood treat the elders like their own uncles and aunts.

Our scheme aimed to preserve this relationship by overlapping spatial functions and creating interstitial spaces that allow ease of intermingling, yet still maintaining the need for privacy.

Even the construction of the modules for the brick façade was conceptualised to allow public participation.

The façade was designed in repetitive modules and put together like a kit-of-parts.

Members of the public could help to build the modules at the staging area. This created a sense of ownership and in return, forged a strong community spirit.

The Festival Pavilion for ArchiFest 2018 is inspired by Singapore’s public housing void deck.

INTERVIEW
General

What do you think is the role of the architect in the 21st century versus the previous century?
Changes are happening too fast in our environment that we might have difficulty creating memories and allowing the organic growth of our spaces and cities. In the 21st century, the architect's role must not just be about designing new buildings. It also needs to be about preservation and retention, making good of what is already there and improving it. We should ride on technology and big data to assist us in this endeavour. This role has not really changed, but it has become more urgent now. It is about building responsibly and making sure buildings and spaces have a soul.

In the era of robotisation, 3D printing and automation, is the role of the architect still relevant?
The architect is and must always be the human factor in the entire equation and because of that, we will always be relevant. I like to believe that technology should be harnessed to help us become more discerning designers. It must be used to assist us in laborious tasks, so that we can concentrate on sharpening our craftsmanship and honing our design senses – to bring out the human factor in our works.

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?
The biggest challenge is to retain our uniqueness – our cultural identity and craftsmanship. The notion that the west is more superior is still prevalent among us. This problem might be further aggravated with globalisation. As architects, we need to show more appreciation and respect towards our intangible culture, as well as historical and social context. Our uniqueness and heritage must still continue to guide and inspire us as we harness new technologies in building and construction. Japanese architects, for example, have been very successful in institutionalising their own language of architecture by incorporating their culture and tradition in the articulation of spaces and forms. There is a lot of respect for local antiquities and craftsmanship. We should learn from the Japanese.

If you could give one piece of advice to the younger generation of architects, what would it be?
Be original and never be slaves to trends or styles, because in this era of social media and Pinterest boards, it is easy to succumb.

> **"There are limitless ways to evince human factor in designs, many of which are still unexplored."**

Human Factor

Do you believe in a human-centric approach to design?
I don't think that term should even exist for a few reasons. If interpreted superficially, the term gives a sense of selfishness – that everything must meet our human wants and needs, rendering other factors in the design approach secondary or unimportant. I believe that balance is key in every design approach and as architects, we need to explore design directions that should not just meet the clients' design briefs but also sit well with the environment, add value to the surroundings and contribute to dynamic sustainability.

There are limitless ways to evince human factor in designs, many of which are still unexplored. For instance, it is a misconception that hi-tech reduces the human factor. In fact, the contrast it creates may sometimes heighten the human factor. Technology has allowed the less-abled be more mobile and independent, creating a more inclusive environment. The way is it adapted into our design to enable us to live better is by itself a celebration of the human spirit and resilience.

Is participatory design key to successful projects?
It is key to good architecture but how effective it becomes very much depends on how, when and where this element is being introduced. The participatory element in design can happen at any stage of the entire building project. It can happen at the design stage where stakeholders are invited to contribute to the design process and form up the project brief. It can take place even during construction, especially in projects where volunteers or even end-users are involved in the building process of erecting or putting together simple building parts. The participatory element in completed buildings is often strategised to give them the dynamism

they need, the sense of time and place and flexibility to grow organically with the end-users and surroundings. When done correctly, participatory design can give soul to spaces, making buildings more meaningful as memories created live on beyond the physicality of the building.

For the ArchiFest 2018 pavilion we designed, we introduced "Walls of Connection", where the general public was invited to complete giant murals on the brick façades of the pavilion. All proceeds from the purchase of paint tubes were given to the Singapore Red Cross for their relief efforts in the tsunami-struck regions in Indonesia. In this respect, I believe the participatory element provided the pavilion not just spatial and façade dynamism, it also helped raised awareness of humanitarian issues and global warming.

In the more individualistic world of the 21st century, how can architecture be a solution to reconnect communities?

I strongly feel that architecture must resist rapid change and it does not need to evolve on par with technological advancement. Rather, it must evolve with human values, community growth and cultural appreciation. Changes are so furiously rapid and rampant in some cities that future generations will not be able to make or retain memories and forge connections with their own communities. Changes in our work landscape, evolution of the Internet Of Things and common entertainment platforms, while exposing us to many different cultures and communities, are blurring our own cultural and community definitions, leading to homogeneity. When this happens rapidly, there will be lesser reasons for us to explore and connect.

It is imperative that we design and build sensitively and allow our cities to grow sustainably. Definition of urban growth must not be defined by the evolution of the city skyline or the rate and intensity of construction. Cities must put in more effort to preserve buildings, spaces and places that provide a strong sense of identity and pride, and retain and create an urbanism that speaks of the people and their culture that give it life.

Jelita Gallery House is conceived by rotating the plans at every level to capture and frame the best vistas the site can offer.

Fiona Tan

Architect, Zarch Collaboratives

How can we use Architecture (both the permanent and the temporary) as a vehicle to shape society and provoke change? This is what interests Tan when it comes to her practice.

The Registered Architect with the Board of Architects, Singapore obtained her Bachelor of Arts in Architecture at the National University of Singapore in 2011, before pursuing her Master of Architecture at the Bartlett School of Architecture, UCL under the Design Singapore Overseas Scholarship in 2013.

In her personal capacity, Tan enjoys creating and building installation works that straddle the blurred boundaries of art and architecture. Through Zarch Collaboratives, she has worked on projects such as Pathfinder (2019), which was a part of the Singapore Bicentennial Experience.

Product: **Dekton Khalo**

ESSAY
The Architecture of the Temporary

The age old Vitruvian ideals of *Firmitas* (Durability), *Utilitas* (Function) and *Venustas* (Beauty) have long been celebrated as core tenets of good architecture.

Building upon this framework, one may consider and argue if there truly is a universal proportion and order associated with beauty; or if architecture should be form follows function or function follows form.

Surprisingly, while the profession has gone to great lengths to discuss the concept of *Utilitas* and *Venustas*, the concept of *Firmitas* or building with structural integrity and longevity is, however, one that is often less contested.

Permanence in architecture is traditionally viewed as its natural order. However, this begs the question of how permanent is permanence?

In John Ruskin's seminal work *The Seven Lamps of Architecture* written in 1849, he firmly declared, "Without Architecture, we cannot remember."

The context of this remembering referred to buildings lasting 300 years and more; some of which even existing as a ruin.

While there is a place for constructing with permanence in mind, it may be about time we question architecture's obsession with it, especially in the case of a landscape where buildings often last only 30 years or at best 99 years.

Is permanence in architecture the only way we can remember?

I would like to posit that the discipline's intrinsic power to create delight and physically alter the movements and emotions of its user need not necessarily be restricted to the realm of permanent architecture but should encompass also that of the temporary.

The charm of the temporary lies in its unexpected and momentary existence within our static and often over-planned urban environments. Temporary architecture functions as very necessary counterparts to the permanent.

It is a vehicle in which architects may test out new ideas in materiality and building techniques, question conventional ways of negotiating our city and environment, and inject delight into urban spaces that may otherwise be forgotten.

It is with this design ethos and framework that our practice has actively worked in the realm of both permanent and temporary architecture. A sampling of these temporary projects is featured here.

SS NIMBY, for OH! Open House, 2015

Context: Joo Chiat, Singapore
Duration: 15 days
Collaborators: Randy Chan, Zenas Deng, Fiona Tan and Residents of Joo Chiat

The site, 136 Tembeling Road is a no man's land - a contested public-yet-pseudo-private leftover space located at the back of the iconic row of colourful shophouses in Joo Chiat.

It is used daily as an extension of the residents' backyard for the airing of laundry and neighbourhood gossip.

The inspiration for SS NIMBY! stemmed from Mr Boon, a long-time resident in Joo Chiat and his beloved decommissioned Boat.

The work was conceived as a modern-day Noah's Ark and memory vessel of sorts for the residents of Joo Chiat.

They were asked to share a personal belonging/artefact which they treasure in response to the question "If today were your last day on earth, what would you bring with you (on board the SS NIMBY)?"

From a wooden chair to a typewriter and a single sterling silver earring, unique stories of transition and separation, simple pleasures, love and loss are anchored in each memento and displayed around a labyrinthine-mesh structure and within the vessel itself.

Visitors to the SS NIMBY may choose to leave messages responding to the items and memories of the residents, thus connecting strangers through their stories to each other.

The unexpected docking of an orange coast guard vessel right at the "backyard" of the shophouses and the construction of a lightweight black mesh "docking station" transformed the otherwise overlooked space into a show-and-tell corner for the residents, and where the gathering of conversations took place, if only for two weekends.

Singapore Inside-Out (SGIO), 2015

Context: Travelling showcase to Beijing, New York, London, Singapore
Duration: 5 days in each city and 9 days in Singapore

Collaborators: Zarch Collaboratives, Clara Yee, Mok Cui Yin, Various Creatives

The inaugural Singapore Inside-Out was commissioned as a travelling showcase by the Singapore Tourism Board in celebration of Singapore's Golden Jubilee.

Zarch Collaboratives served as the overall creative director and architect, bringing together a collection of multi-disciplinary Singaporean creatives and showcasing their works within a travelling Pavilion that featured in the cities of London, New York, Beijing and back home in Singapore.

The sites within the four cities presented an intriguing challenge — how to create a temporary architecture with the flexibility for on-site permutability and adjustment?

The distinctive quality and character of each of the sites — the grounds of an old power station (751 D-Park in Beijing), the gardens of Madison Square in New York, the artistic buzz of London's Bricklane Yard — also inspired a search for an appropriate formal intervention.

The project was thus conceived as a modular scaffold construction that may be easily assembled, disassembled and reassembled.

Metaphorically, the imageability of the enveloping white modular scaffold reflected the buzz of experimentation, possibilities and constant progress.

Within the lattice framework of white towering scaffolds lay a black box, a library, two stages and courtyard spaces that featured a host of multi-disciplinary artists.

Beyond a mere static display, the modular structure of the SGIO was designed as a framework for expression.

From sound artist Zul Mahmod's kinetic composition of everyday objects that interact with scaffolds and each other to create rhythms, to the edible walls of glowing lollipops by dessert chef Janice Wong, an experiential dialogue as curated between the architecture and the works themselves.

Organised within the SGIO showcase was a slew of pop-up events: live music, poetry reading, panel discussion and dance, thus guaranteeing a different experience to the audiences during each visit.

> **"I would like to posit that the discipline's intrinsic power to create delight and physically alter the movements and emotions of its user need not necessarily be restricted to the realm of permanent architecture but should encompass also that of the temporary."**

Beyond the project itself, the ease of tearing down and rebuilding as afforded by strategically-crafted temporary architecture also suggests a potential of rethinking how our built environment may be made more sustainable, flexible and adaptable.

Pathfinder, for the Singapore Bicentennial Experience, 2019

Context: Fort Canning Hill

Duration: 6 months

Collaborators: Zarch Collaboratives, Beatrice Chia-Richmond, Michael Chiang, Kenny Wong, Cheah Wei Chun, Kingsmen and SBO office

Pathfinder was as a series of temporary pavilions set within the lush gardens atop the historically-significant Fort Canning Hill, designed as part of the Singapore Bicentennial 2019 celebrations.

The pavilions invited visitors to explore 700 years of Singapore's history through a spatial experience that combined artefacts, maps, flora and the written word.

Commissioned by the Singapore Bicentennial Office, the brief was to create a free-and-easy outdoor experience where visitors may meander through at any time of the day.

The seven pavilions were constructed from a white, three-dimensional steel lattice, which volumetrically expanded and dissolved in response to the site's landscape.

The de-materialisation of the architectural form coincided with a curation that sought to present an experience unlike a museum's for visitors to enjoy the content within an open park setting at their own pace.

At the pavilion's core was a central node where a "searchlight beam" was placed around which the other structures sat.

Each night, at a specific time, it would feature soaring dancing lights, the colour of which corresponded to the most popular public vote via a 'live' poll featured in the adjacent main Time Traveller experience.

With no definitive edges, the structures appeared ambiguous from afar – as a form with no form – however, on approach, the axes of the pavilions revealed themselves, guiding the visitor through a series of directional passageways. These axes were based on a geographical

mapping of Fort Canning and its connection to locations of historical and national significance.

The grid, in itself representing a unit of cartographic measurement, was then mapped onto these ordinates and extrapolated three dimensionally.

Given its temporary nature, added flexibility was afforded in experimenting with expressing the formal integrity and lightness of the steel lattice, without the constraints of conventional architectural insertions of doors and windows.

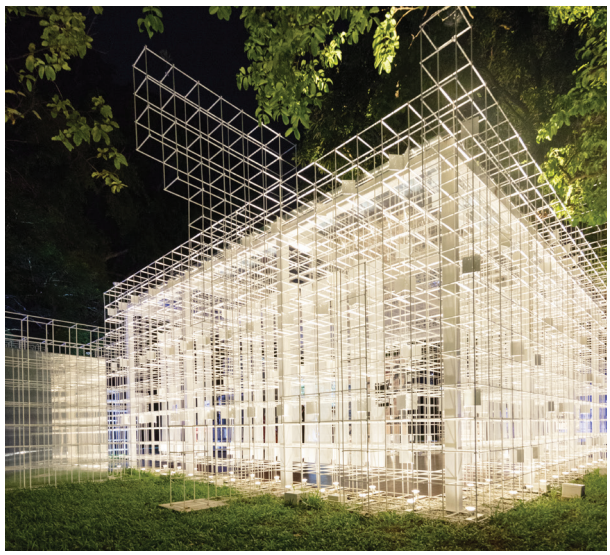
The extrapolation of the grid provided the necessary formal consistency across all seven pavilions, while allowing a degree of curatorial interaction based on the content on display.

The lattice evolved and adapted, transforming itself into seating, tables for writing or vessels for modular attachments such as kinetic wind sails, planters and pools.

Beyond the larger scale corporate commissions mentioned above, temporary architecture may also take on a much smaller scale on the other spectrum of low-budget, ground-up pop-ups.

One such initiative is the annual Parking Day hosted by the Urban Redevelopment Authority of Singapore, where parking lots across the island may be transformed for a day into community spaces.

The open call to build small-scale, self-funded temporary structures within a public space presented itself as an invigorating opportunity for myself and fellow architect Dawn Lim, as a weekend building project to realise architectural installations quickly, without the barrier of authority clearances or the need for a client.



Photography Pathfinder - Finbarr Fallon

One of seven pavilions that made up Pathfinder, an exhibition to mark the Singapore Bicentennial in 2019.

I KNOW YOU DON'T KNOW, 2014, URA Parking Day

Context: Parking lot at Ann Siang Hill

Duration: 12 hours

Collaborators: Fiona Tan and Dawn Lim

The I KNOW YOU DON'T KNOW vending machine made its way to Parking Lot number four at Ann Siang Hill.

Dispensing fun facts about all things Singaporean, it transformed the 2.4m x 5.4m parking space into a community corner, if only for a day.

Designed and built out of scrap recycled materials, the idea was to have a structure that could be readily constructed and easily recycled at the end of the day.

Passers-by pressed the colour coordinated buttons for their choice of fun fact as showcased on the display cabinet and waited as the machine printed out a random fact — things they might want to know, wish they knew, or don't really care about knowing.

Operated by the makers (Dawn and Fiona) behind the cardboard façade, the public was enticed to exchange their own fun facts about Singapore through the "will revert" slot or belt out their favourite Singaporean tunes for a chance to collect additional limited-edition, specially-designed fun-fact cards.

A quirky conversation starter between strangers and friends alike, the I KNOW YOU DON'T KNOW vending machine met with interesting responses from the unsuspecting passers-by — some sceptical that anyone would be giving out anything for free and others actively exchanging new fun facts with it.

THE FLOAT HOUSE, 2016, URA Parking Day

Context: Parking lot outside Telok Ayer Market

Duration: 12 hours

Collaborators: Fiona Tan and Dawn Lim

The Float House is a 2m x 2m x 2m mobile microstructure, which can be readily assembled and disassembled within a confined perimeter of a single parking lot.

Made up of hundreds of inflatable cheer sticks manually inflated by the makers, its playful and colourful façade and form can be manipulated to form varying degrees of enclosures and openings, thus creating intriguing landscapes.

A sequel to the earlier I KNOW YOU DON'T KNOW vending machine, The Float House affords space for habitation within the canopy of cheer sticks and hanging fun facts that the public can take home with them.

A space of creative contemplation while celebrating the vibrancy of the city's streets, it is envisioned to offer a breather amid our fast-paced everyday life and bring some cheer to the working crowd in the area.

Conclusion

Unweighted by the programmatic functions of traditional buildings, temporary architecture creates the opportunity question and provokes the status quo.

While short-lived in their lifespan, it nonetheless creates lasting memories through its examination of how public space can be enjoyed.

INTERVIEW
General

What do you think is the role of the architect in the 21st century versus the previous century?

In an age of disruptive economies, rapid changes in technology and new patterns of use, the timescale in which it takes to construct a building may render it obsolete by the time of its completion. This poses a challenge to the architect of the 21st century to consider how architecture can be designed with unprecedented flexibility to accommodate ever-changing functions and user-patterns. Beyond the natural order of architecture as building with permanence in mind, the architect may do well to also consider a paradigm shift to embrace the wide-ranging possibilities that temporary and transient architecture may serve – such as to inject the element of social consciousness, surprise and delight into our otherwise predictable and over-planned urban landscape. The architecture of the temporary should begin to be accorded equal importance to its permanent predecessors as a necessary counterpart to the new architectural landscape. The architect of the 21st century also grapples with a world quite different from that of the previous century — the rise of terrorism and security threats or the advancement in technology, suggest wider parameters of consideration in architectural design. These responsibilities often fall beyond the abilities of the architect himself/herself, suggesting that the assumption of the role as master-builder requires further rethinking.

What is your greatest source of inspiration?

All man-made creations are mere imitations of Nature and the Creator's hand. I find my greatest source of inspiration outside of architecture, in the interaction with the community and the wonders of the natural world. I have realised as well the advantages of going on silent retreats at least annually to recharge the creativity bank away from the distractions of deadlines and noise.

Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or as a catalyst for innovation?

I believe that the framework of rules

The Float House is a mobile structure that fits neatly into a single parking lot and is affixed with cheer sticks and hanging fun facts.

and regulations have generally served Singapore's urban environment well. Given our small land area, many of our urban planning guidelines and policies have contributed to the safeguarding of a considerably high quality of urban living. Some of these include the Landscaping for Urban Spaces and High-Rises (LUSH) sky-rise greening programme, where incentives are given to developers who provide greenery and communal spaces, and the Walk Cycle Plan that allows enhanced connectivity across Singapore's extensive Park Connectors, among other well-strategised initiatives. As a young architect, I view a large percentage of rules and regulations as important parameters that serve to enhance the spatial quality of our spaces for the public good. Having said this, it must be acknowledged that the execution of approval processes and authority submissions are often times unnecessarily lengthened and unpredictable. Beyond having a prescriptive checklist, a more performance-based approach may better enhance creativity.

In the fast-paced development of Singapore's built environment, can we still develop meaningful spaces?
While technology has allowed us to move faster, the development of meaningful spaces still requires thoughtful deliberation and iteration. It is still possible to develop meaningful spaces however, only if we are able to safeguard blocks of time outside of running contracts, project management and client interfacing to sit still and design.

Human Factor

Do you believe in a human-centric approach to design?
Yes. A human-centric approach is critical in ensuring that an architectural project goes beyond the wants of the architect and/or the quantitative profit calculations of the client to encompass important considerations of user habits, preferences and patterns.

Is participatory design key to successful projects?
Participatory design cultivates an open feedback channel from the end-user to the design team in the design stage of the project. This empowers the community and generates a greater sense of ownership to the finished product. Importantly, this also challenges any pre-existing assumptions of the designer and provides important brief pointers that may have otherwise been overlooked by the client. However, it must also be recognised that the success and importance of participatory design in architecture differs depending on the scope and nature of the project in question. Often times, the myriad of different and conflicting opinions from various stakeholders, and the assumption that each user may know exactly what they want, may dangerously lead to unnecessary stalling of the project and diverting the architect's focus away from the complex technical design work itself. The success of the project thus depends on many other factors – while participatory design may contribute to this, it may also be less constructive in other instances.

> **"A human-centric approach is critical in ensuring that an architectural project goes beyond the wants of the architect and/or the quantitative profit calculations of the client to encompass important considerations of user habits, preferences and patterns."**

In the more individualistic world of the 21st century, how can architecture be a solution to reconnect communities?
The nature and physicality of architecture has the innate power to effect and influence people since the start of time. Aside from the basic needs of shelter, the shaping of well-thought-out spaces can foster community interaction and social cohesion. Given the density of today's cities, the design of these precious slivers of community and public spaces are made all the more important. As a counterpoint to the permanent initiatives such as public parks, community roof gardens and public squares, pop-up temporary architecture plays a distinct role in adding an element of surprise and accidental joy to our otherwise more predictable cityscape.

Tan Cheng Siong

Principal, Archurban Architects Planners

A serial trailblazer in Singapore's architecture and urban planning landscape over the last 40 years, Tan is Singapore's idealist thinker on the future of liveable housing environments, under the exigencies of diminishing land holdings and rising expectations about the quality of life.

He designed Singapore's first super high-rise housing, the iconic Pearl Bank Apartments, as well as first condominium, Pandan Valley.

He oversaw the design of the Development Guide Plans for Jurong East in 1991 and Pasir Ris in 1997.

Over the years, his firm has won many design competitions and received many accolades both in Singapore and China.

In recent years, he promoted Skyland, championed Voluntary Conservation, suggested plans to revitalise Kallang River and the transformation of Singapore's existing waterways into "River Front Settlements".

Then came Creative Conservation, where he postulated that three "gold mines" (Pearl Bank Apartment, People's Park Complex and the Pinnacle) and three parks (Pearl's Hill Park, Duxton Plain Park and Vanda Miss Joaquim Park) be amalgamated into a creative urban district.

He also advocated the Owner Development Plan (ODP) for existing condominium communities to continue and provide them with updated facilities, amenities and spaces. In this way, Pandan Valley Condominium may be saved.

More recently, he proposed for the Draft Master Plan 2019 to include Community Connectors and ODPs for condominiums.

Now over 80 years of age, Tan's energy and passion for architecture and urban planning remain youthful and vigorous.

His unwavering pursuit of excellence makes him a role model for younger generations.

Product: **Dekton Liquid Embers**

ESSAY
Time For Citizens To Own Architecture

Architecture, community and capitalism will be stakeholders of the future. This is something I believe will happen.

Whether it is a good thing or not, remains to be seen.

Having practiced architecture for more than 50 years, and seeing how it has evolved in Singapore, I am in a strong position to see where we are headed.

But before we look into the future, let us turn our gaze backwards to the past.

Architecture did not fail. Historically, it has done its job.

People built their homes with their own hands, humble structures that remained connected to the land and their communities.

> **“Architecture did not fail. Historically, it has done its job.”**

Only kings and gods commissioned palaces and temples – the Todaiji in Kyoto and the Duomo in Florence are just two examples.

Today, these buildings have become part of our heritage and are carefully preserved without hesitation.

Golf & Gallery Towers in Hangzhou, China

The Challenge

Fast forward to modern times, marked by post-colonialism and the opportunity to build a "brave new world" shrugged free of the past.

Brasilia in Brazil, designed by Oscar Niemeyer, and Chandigarh in India, designed by Le Corbusier, are testimonies to good urban planning and architecture practices.

In Singapore, we expressed our "brave new world" through Housing Development Board (HDB) New Towns.

These have done well, governed by sound finance and management.

Yet, with the exception of the HDB New Towns, much of modern architecture, especially the residential typologies, have fallen into disrepair or worse, demolished prematurely.

Today, in cities around the world, the new temples and palaces of the 21st century are sleek skyscrapers that house offices and hotels but neglect the most important factor: people.

Hong Kong is an example of this.

True architecture has been forgotten – people feel disconnected from their communities, forced to live in pint-sized homes.

It is clear that the economic system and public policies have relegated the human factor to a position of low priority, though there is no shortage of civil and civic support.

Developers are concerned primarily with the bottom line, and public policy appears to stand behind them rather than for the people.

A good example is how Pearl Bank Apartments fell prey to the system – specifically to the en bloc trend and then the wrecking ball.

The building was allowed to deteriorate and strict rules were enforced that worked against its conservation.

For instance, the criteria for it to be conserved instead of being demolished was that all its owners had to agree to it – something that was a near-impossible feat to achieve.

I spent three years trying to save it, going so far as to appeal to the Ministry of National Development and considered calling on the National Parks Board to provide an adjacent plot within Pearl Hill Park to offer to the developer in exchange.

It was all to no avail.

"It is clear that the economic system and public policies have relegated the human factor to a position of low priority, though there is no shortage of civil and civic support."

In the end, the value of Pearl Bank Apartments' architecture and contribution to our built heritage was insufficient to convince the authorities and developer that it should not be pulled down.

The Solution?

From my vantage point, it appears that the system has surrendered so much that collapse might be inevitable.

There is a crisis.

How can this be prevented? There are simple solutions available, which I have studied and analysed, giving the man on the street a say and putting the human factor back front and centre.

To rectify the issue of demolishing our modern built heritage in the residential space, we should start a dedicated "bank", funded by the MCST's management and sinking fund.

Alternatively, we could persuade the government to form the Condo Bank as they did with POSB bank.

The key is finance and applying the banking system to facilitate upkeep, renew and grow.

We have about 300,000 condominium units in Singapore at the moment and on average, each owner pays about $5,000 a year in management fees to the MCST.

Combined with what they contribute to the sinking fund, in one year, the Condo Bank can easily receive $2 billion of deposits.

This can go a long way to help with the maintenance and upgrading of a condominium's architecture and its grounds, and empower the people to enhance urban living.

The idea is similar to how HDB uses the Central Provident Fund that all Singaporeans have to contribute to, to create and sustain public housing.

Singapore must create a dedicated bank to facilitate and finance our condominium assets to ensure they are attractive, productive and liveable.

The people, the informed citizens and our business-savvy government are the best architects to do this job.

I throw down this gauntlet; I hope you will pick it up and work together to create a solution for citizens to own architecture or the modern city will perish.

Great China International Exchange Square in Shenzhen, China

INTERVIEW
General

In the era of robotisation, 3D printing and automation, is the role of the architect still relevant?
Robotisation, 3D printing and automation are means of construction. While architects concern themselves with this, we also deal with the intangibles, such as creating communities and shaping the way of life. We craft with our hands, introducing details into a project that are refined, elegant and delicate. These capabilities are unique to us and will ensure we, as architect, will never be replaced by machines.

What are the biggest challenges the South-East Asia region will be facing? How should architects tackle them?
South-East Asia faces problems of housing, cities, rising sea levels and over-population. The present developments in unaffordable real estate, broken communities and unemployment challenge citizens and governments. The architect should plan, design and urbanise without destroying nature, while working within the boundaries of land scarcity. For instance, retrofit a building instead of demolishing it. This solution is more sustainable and preserves communities linked to it.

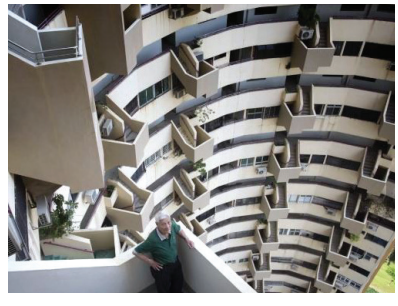
Singapore is known to have a strong set of rules and regulations when it comes to the built environment. Do you see this as a barrier to creativity or as a catalyst for innovation?
Rules and regulations – often time driven by the motivation to make money – produce fixed mindsets. Singapore faces the danger of being trapped in the box, making thinking out of it an alien concept. Challenge that and you risk getting side-lined. Is it therefore surprising that the result is the curtailing of creativity? You might argue that we do have innovation in the city's built environment, but I feel that most of it is just skin deep. True innovation is transformative and its effect can only be felt over time.

What's next for you?
I have proposed to authorities in Singapore's architecture and urban planning space since 2013 projects such as Skyland, Voluntary Conservation, Riverfront Super Condos and concepts for Community Connectors. I have written research papers to the relevant authorities to try and change mindsets and encourage more sustainability for communities. For instance, I have tried to show them there are alternatives to demolishing buildings. Locally, I am encouraging the Owner Development Plan that changes the way people own a building. At an ASEAN/Asian level, I am traveling the region to give talks on how to design architecture with nature in mind.

Human Factor

Do you believe in a human-centric approach to design?
Yes. Humans have evolved and technological advancements like smartphones cause isolation. Since there are many factors that can cause loneliness in our contemporary conditions (unlike that of my growing up years living in a rural village or kampong), design should counter that isolation with a human-focused response. For instance, we should make passing through shared spaces part of our everyday commute, than make them destination-centric.

In the more individualistic world of the 21st century, how can architecture can be a solution to reconnect communities?
Being alone is an undesirable condition. Architecture must attempt to increase people-to-people contact and interaction. The Pearl Bank Apartments I designed was an attempt at super-high-rise living and community-making but was destroyed by a capitalistic system where making money takes priority. Pandan Valley condominium demonstrates that singularity can be transformed by pluralistic design over space and land. I designed many different types of units to suit different needs, and optimised the grounds with shared spaces and living in harmony with nature. This allows



The curved architecture of the Pearl Bank Apartments means residents can look into each other's units and maintain a connection.

residents to constantly be in touch with their neighbours.

> **“Being alone is an undesirable condition. Architecture must attempt to increase people-to-people contact and interaction.”**

Can architecture contribute to well-being and life satisfaction?
Absolutely. Being an integral part of living, spaces and places are determinates and influencers of one’s behaviour, mood and emotions. Architecture, being the total setting, has a big role to play in human life. It is the synthesis of many things, including understanding how people live together, climatic conditions, construction methods and how a building ages. An architect has to be on top of all these ideas, making him/her a combination of psychologist, sociologist and economist. Every line we draw will inevitably have an impact on how people live, their future. If we are not mindful of this, it will result in a negative impact on well-being and life satisfaction. For instance, apartments are getting smaller but it is our role as architects to defend the community and say no to shoebox living. We should stand up and offer alternatives that can satisfy not only the client, but also the people who will eventually move into these residences.

Pearl Bank Apartments, completed in 1976, was demolished in 2019 despite it having a significant contribution to Singapore’s built heritage.

About Cosentino

The Cosentino Group is a global, family-owned company that produces and distributes high-value, innovative surfaces for architecture and design. Through the involvement of its customers and partners, this leading company imagines and anticipates design solutions that offer value and inspiration to people's lives.

This goal is made possible by pioneering brands that are leaders in their respective segments: Silestone®, Dekton® and Sensa by Cosentino®. These technologically-advanced surfaces allow for the creation of unique spaces and designs for the home and public spaces. The Group has based its development on international expansion, an innovative research and development programme, respect for the environment and sustainability, an ongoing corporate commitment to society and the local communities where it operates, training, equality and job security. Cosentino distributes its products and brands in more than 110 countries, from its headquarters in Almeria, Spain.

It is currently present in 40 countries, with its own assets in 30 of them. The group has eight factories (seven in Almeria Spain and one in Brazil), one intelligent logistics platform in Spain, and more than 140 commercial and business units throughout the world.

Innovative Materials For Architecture And Interior Design

The Cosentino Group has its origins in the quarrying, processing and sale of marble from the Sierra de los Filabres mountains in the province of Almeria, among which the variety White Macael is particularly outstanding. Since 1979, the company's process of expansion and research has led it to apply the latest technology to produce innovative materials and high-value solutions for the world of architecture and design.

Many architects and designers have shown their interest for Cosentino materials and developed diverse projects with its brands.

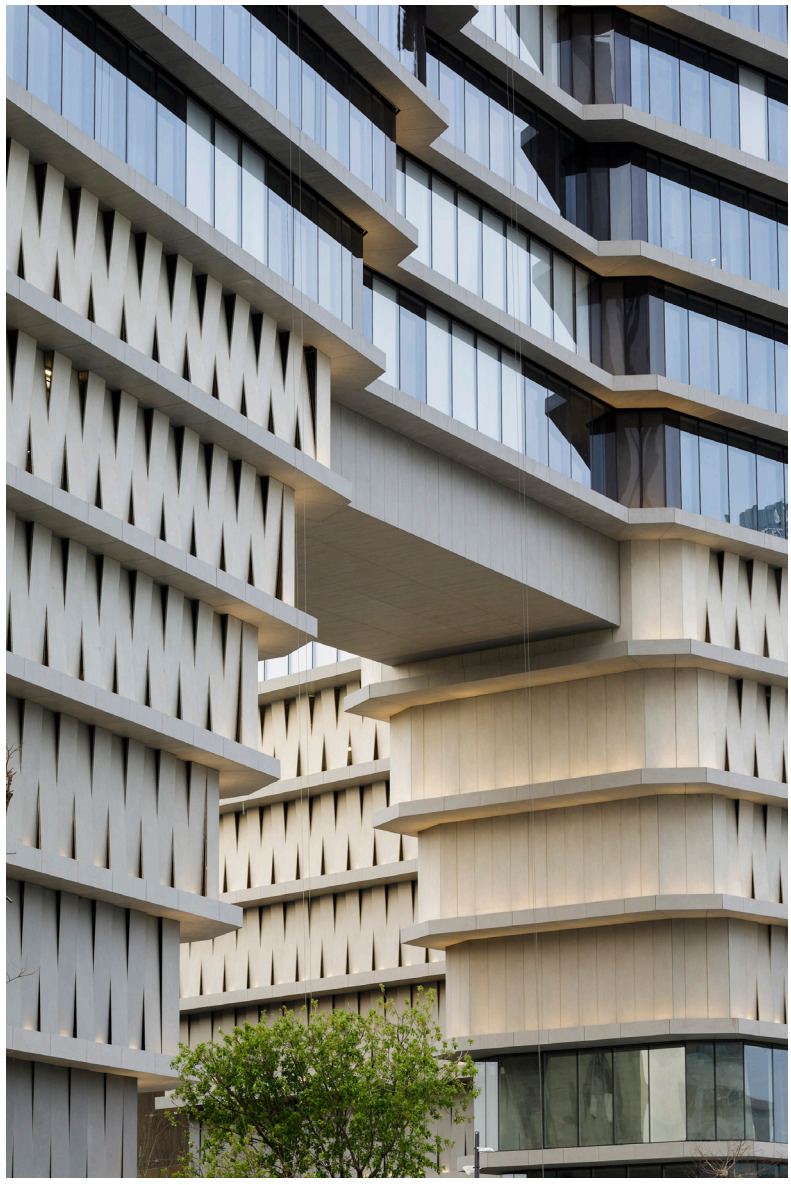
DEKTON
designed by COSENTINO

Description
Ultra-compact surface that brought a revolutionary new category of surface to the market when it was launched in 2013.

Manufacturing process
Manufactured with the exclusive Sinterized Particle Technology (SPT) developed by the Cosentino Group company dedicated to R&D. It involves an ultra-compaction system that imitates the way stone is produced by nature.

Uses
Its excellent performance under ultraviolet light, heat and thermal shock makes it suitable for both interior and exterior use. It is the ideal product to use in façades, floors and floor coverings, swimming pools and gardens, cladding, countertops and furniture cladding.

Characteristics
- It possesses advanced technical properties such as exceptional resistance to ultraviolet rays, scratches, stains and thermal impact, and has a very low water absorption rate.
- Produced in large formats and different thicknesses.
- Customisable using inkjet printing.
- It comes with a 25-year guarantee.
- Over 50 different colour references in nine collections: Solid, Industrial, Tech, Natural, Wild, XGloss Solid, XGloss Natural, XGloss Basiq and XGloss Stonika.



Façade, Toha Building by
Ron Arad Architects, Dekton
Strato and Totzeret 1-6

SILESTONE by COSENTINO

Description

- World leader in the quartz surfaces category.
- Composed on average of 90% natural quartz.
- Launched in 1990.

Manufacturing process

It includes the innovative N-BOOST technology patented by Cosentino, which features technological advancements that improve the functionality, quality and beauty of the surface. It makes daily cleaning and maintenance easier, and gives it a rich colour and extraordinary brightness.

Uses

World benchmark for kitchen and bathroom countertops, one-piece sinks (Integrity line by Cosentino), washbasins, shower trays, walls, flooring, stairs or thin cladding.

Characteristics

- Highly resistant to stains, impacts and scratches; and a low liquid absorption rate, adaptability and easy cleaning.
- Extraordinary durability and resistance.
- It comes with a 25-year warranty.
- Manufactured in 75 colours, four textures and a range of formats.
- Option to use large slabs without joints.

Wall Cladding & Vanity Top, Silestone Eternal Noir

SENSA by COSENTINO®

Description

Cosentino's range of exclusive high-quality quartzite and granite surfaces that feature the innovative Senguard NK anti-stain protection.

Uses

An excellent choice for kitchen worktops and other household surfaces, interior vertical cladding, floor cladding and façades.

Characteristics

- Undergoes a revolutionary protective treatment making it highly resistant to stains.
- Ensures a long-lasting and durable surface without the need for special maintenance.
- The surface is unaffected by sunlight and UV radiation, guaranteeing it for use in both interiors and exteriors.
- Available in a wide range of colours for use in any decorative and architectural project.
- It comes with a 15-year warranty.
- Exclusive designs created by nature.

Backsplash, Countertop & Island, Sensa Taj Mahal

Cosentino, An Example of Sustainability

A section of the green belt inside the Cosentino Industrial Park.

At Cosentino, environmental balance is both an essential pillar of our daily activity and now, our overall philosophy and strategy.

Working for sustainability is an ongoing challenge that pushes us to be more efficient, consistent and coherent in our actions and the impact they have.

The protection of sustainable growth, while protecting the interests of the organisation, is all part of Cosentino's mission.

As proof of this commitment, Cosentino is firmly aligned with the 2030 Agenda promoted by the United Nations to achieve Sustainable Development Goals (SDGs).

Aware of its worldwide leadership in the manufacture and distribution of innovative surfaces for the architecture and design sector, Cosentino fulfils its role in boosting sustainability on a local and global level.

It achieves this by implementing strategic objectives such as innovation (Sustainable Development Goal 9) and sustainable production (Sustainable Development Goal 12).

Cosentino employees cycle around the company's headquarters to reduce their carbon footprint.

With this policy framework, Cosentino strives to be a benchmark in terms of sustainability, and to move towards a circular economy model that encourages a shift towards efficient economy in the use of resources.

The company uses the best available technologies for waste minimisation and assessment, allocating significant personal and financial resources to promote and lead this change from the company headquarters in Almería, Spain.

> **"Working for sustainability is an ongoing challenge that pushes us to be more efficient, consistent and coherent in our actions and the impact they have."**

It prepares an Environmental Strategic Plan every year, in which it sets out the lines of action to be taken in this regard.

A quarterly follow-up is then made of the different parameters at all group facilities, to which are added the internal audits conducted by qualified personnel and external audits associated with certification processes and legal requirements.

As a result of this commitment, the company has reached several milestones; like the daily reuse of 70,000m^3 water for a "0" Water Discharge; consumption of 100 percent certified renewable electric energy; and the recent construction of Cosentino's own Waste Management Plant inside the company's industrial park.

Additionally, in 2016, Dekton® obtained the Environmental Product Declaration (EPD), a prestigious certification by The International EPD System.

EPD certification was also obtained in 2019 for all the Silestone® colour ranges.

The environmental commitment of the company is reflected in the Environmental Management System and is summarised in the following actions:

- Continuous improvement of processes and final products, using the Environment and Quality Management System as a tool.
- Compliance with environmental regulations and the requirements of the market and society.
- Efficient and rational use of resources, and the adoption of the most suitable management systems for the waste produced.
- Adoption of the necessary measures for the prevention of possible soil, air and water pollution.
- Developing employee involvement and awareness of environmental protection and respect.

An outstanding feature of the Environmental Management System, which holds the international certification ISO 14001:2005, renewed in 2017, is the company's active policies in air control and dust and VOC reduction.

This includes water management with the achievement of continuous reuse and "zero discharge"; the reuse of waste as raw material for recycling into new products; landscape restoration through an extensive green belt within the Cosentino Industrial Park in Cantoria (Almería, Spain); and waste management to find solutions for the assessment of generated waste.

The Cosentino Industrial Park has its own Waste Management Plant.

A Big Family Around the World

USA
Cosentino ANAHEIM
Cosentino ATLANTA
Cosentino AUSTIN
Cosentino BOSTON
Cosentino CHARLOTTE
Cosentino CHICAGO
Cosentino CINCINNATI
Cosentino DALLAS
Cosentino DENVER
Cosentino DETROIT
Cosentino FORT LAUDERDALE
Cosentino HAWAII
Cosentino HOUSTON
Cosentino KANSAS CITY
Cosentino LONG ISLAND
Cosentino LOS ANGELES
Cosentino MILWAUKEE
Cosentino MINNEAPOLIS
Cosentino NASHVILLE
Cosentino NEW JERSEY
Cosentino NEW ORLEANS
Cosentino ORLANDO
Cosentino PHILADELPHIA
Cosentino PHOENIX
Cosentino PITTSBURG
Cosentino PORTLAND
Cosentino RALEIGH
Cosentino ROCHESTER
Cosentino SACRAMENTO
Cosentino ST. LOUIS
Cosentino SALT LAKE CITY
Cosentino SAN DIEGO
Cosentino SAN FRANCISCO
Cosentino SAVANNAH
Cosentino SEATTLE
Cosentino SPOKANE
Cosentino TAMPA
Cosentino VIRGINIA
Cosentino WASHINGTON DC
Cosentino HUB HOUSTON
Cosentino HUB NORFOLK
Cosentino HUB WEST COAST*
Cosentino CITY LOS ANGELES
Cosentino CITY MANHATTAN
Cosentino CITY MIAMI
Cosentino CITY SAN FRANCISCO

CANADA
Cosentino CALGARY
Cosentino OTTAWA
Cosentino QUEBEC
Cosentino TORONTO
Cosentino VANCOUVER
Cosentino WINNIPEG
Cosentino CITY MONTREAL
Cosentino CITY TORONTO

MEXICO
Cosentino MEXICO DF

PUERTO RICO
Cosentino LO PUERTO RICO

MALAYSIA
Cosentino KUALA LUMPUR

SPAIN
Cosentino A CORUÑA
Cosentino ALMERÍA
Cosentino BARCELONA
Cosentino BILBAO
Cosentino CASTELLÓN
Cosentino GIRONA
Cosentino GRANADA
Cosentino MADRID
Cosentino MÉRIDA
Cosentino MURCIA
Cosentino SAN SEBASTIAN
Cosentino SANTANDER
Cosentino SEVILLA
Cosentino TOLEDO
Cosentino VALENCIA
Cosentino VALLADOLID
Cosentino VIGO
Cosentino ZARAGOZA
Cosentino CITY BARCELONA*
Cosentino CITY MADRID

PORTUGAL
Cosentino LISBOA
Cosentino PORTO

BRAZIL
Cosentino GOIANIA
Cosentino LATINA VITORIA
Cosentino RIO
Cosentino SANTA CATARINA
Cosentino SAO PAULO

UK
Cosentino BELFAST
Cosentino DARLINGTON
Cosentino EAST LONDON
Cosentino GLOUCESTER
Cosentino HOOK
Cosentino MANCHESTER
Cosentino NEWMARKET
Cosentino SCOTLAND
Cosentino CITY LONDON

DENMARK
Cosentino DENMARK

FINLAND
Cosentino HELSINKI

GERMANY
Cosentino BERLIN
Cosentino DÜSSELDORF
Cosentino MÜNCHEN
Cosentino STUTTGART

IRELAND
Cosentino DUBLIN

ITALY
Cosentino CATTOLICA
Cosentino LAZIO
Cosentino MILANO
Cosentino TORINO
Cosentino VENEZIA
Cosentino CITY MILANO

FRANCE
Cosentino LYON
Cosentino MARSEILLE
Cosentino PARIS
Cosentino RENNES
Cosentino STRASBOURG
Cosentino TOULOUSE

AUSTRIA
Cosentino WEIN

BELGIUM
Cosentino BELGIUM

NORWAY
Cosentino OSLO

SWEDEN
Cosentino GÖTEBORG
Cosentino STOCKHOLM

SWITZERLAND
Cosentino ZÜRICH

NETHERLANDS
Cosentino THE NETHERLANDS
Cosentino CITY AMSTERDAM*

ISRAEL
Cosentino CAESAREA
Cosentino CITY TEL AVIV

TURKEY
Cosentino ANKARA
Cosentino ISTAMBUL
Cosentino IZMIR

SINGAPORE
Cosentino SINGAPORE
Cosentino CITY SINGAPORE

AUSTRALIA
Cosentino ADELAIDE
Cosentino BRISBANE
Cosentino MELBOURNE NORTH
Cosentino MELBOURNE SOUTH
Cosentino PERTH
Cosentino HUB SYDNEY
Cosentino CITY SYDNEY

NEW ZEALAND
Cosentino AUCKLAND
Cosentino LO CHRISTCHURCH

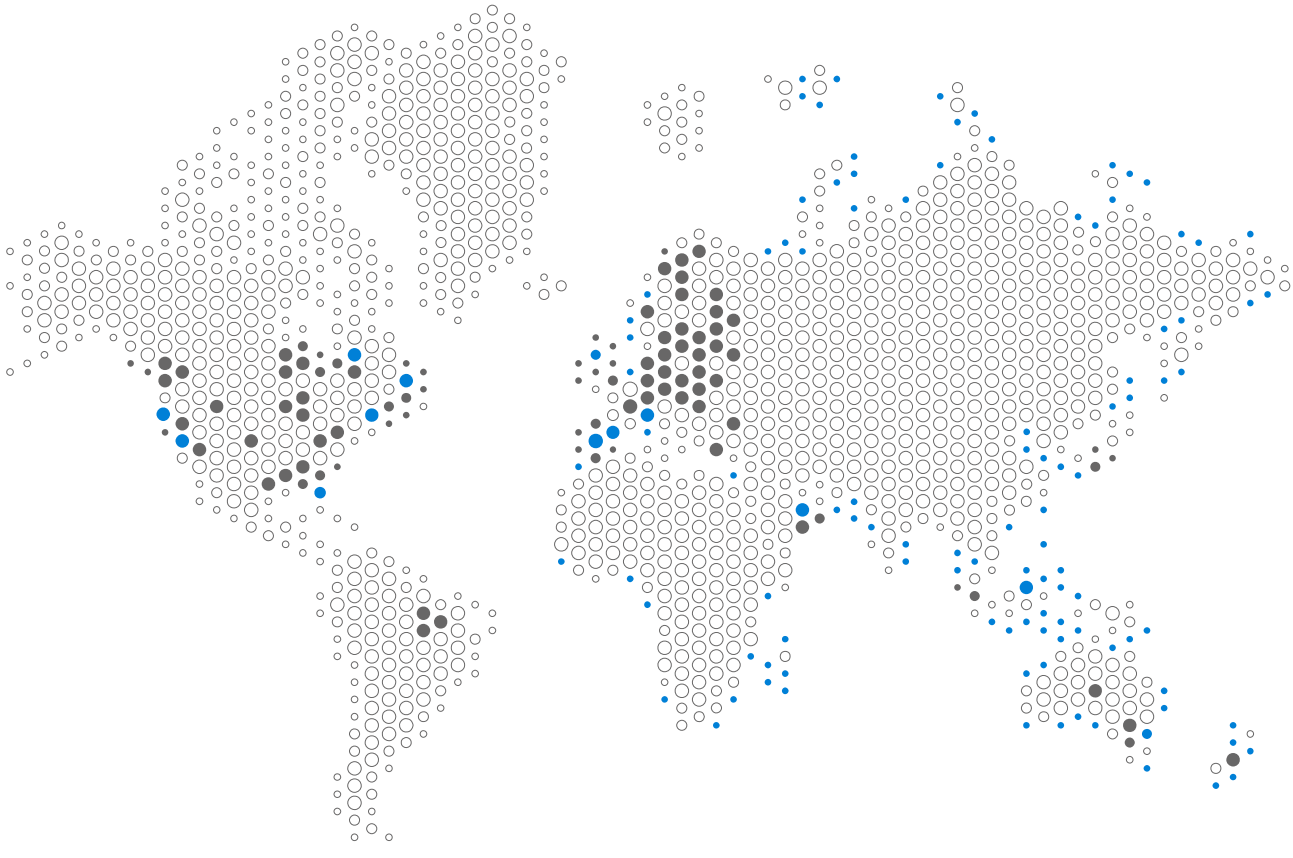
JAPAN
Cosentino LO TOKIO

SOUTH AFRICA
Cosentino JOHANNESBURG
Cosentino LO CAPE TOWN

UAE
Cosentino LO DUBAI
Cosentino CITY DUBAI

POLAND
Cosentino WARSAW

* Coming Soon



COSENTINO CITY