ISSUE 05 · 2016

Skyline

Insights into planning spaces around us

City hacks

Fresh ways to improve our living environments

Jurong Lake District gears for greater innovation | How to inject life in your neighbourhood

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Blissful tranquility: The Chinese (above) and Japanese Gardens will be integrated with Jurong Lake Park in future as part of Jurong Lake District. We explore the exciting plans for this district on page 18.

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Cover | Art Installation along Hindoo road at Little India. These 'umbrella trees' are designed by Ms Marthalia Budiman as part of the Urban Redevelopment Authority's 'My Ideas for Public Spaces: Forgotten Spaces' competition in 2015.

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Rise of the innovative city

Cities need a tremendous amount of innovation to navigate major forces shaping the global economy. How can Singapore harness creativity for impactful change?

Writer **Jennifer Eveland**

Cities are the cauldrons of innovation. Research shows that the more smart people you have and the closer they are in one place, the more innovation you're going to get, says Jonathan Woetzel, McKinsey Global Institute (MGI) director and senior partner, Shanghai.

In his book No Ordinary Disruption: The Four Forces Breaking All the Trends, Woetzel and his co-authors, fellow directors at MGI, have analysed years of MGI research to present an authoritative analysis of the major forces transforming the global economy and shaping our world; forces that will require a tremendous amount of innovation to navigate successfully.

According to Jonathan, one major force of particular relevance to Singapore is the country's trend towards a rapidly ageing population. On the one hand, it's a good indicator of the strides that have been made in public health and longevity. On the other hand, a maturing society affects economic growth.

Over the last couple of hundred years, says Jonathan, economic growth around the world has been driven by two things: per capita productivity and population totals. If the latter engine is slowing down, he says, then productivity has to accelerate in order for economic growth to be sustained. An important question for Singapore then is how can it increase productivity in a rapidly ageing society?

Ripe for innovation

"Singapore should continue to have the aspiration, even as it matures, of being a relatively high growth society which can and will innovate to improve the quality of life and benefits for all of its citizens," he says.

Such innovation is likely to happen in a city, says Jonathan, who has observed that while urbanisation, another major force shaping the world, creates the ideal environment for innovation, the process of urbanisation itself presents opportunities for the development of

Above | Panasonic Factory Solutions Asia Pacific (PFSAP) indoor farm produces 81 tonnes of soil-based and pesticide-free vegetables per year. Photo credit: Panasonic Factory Solutions Asia Pacific (PFSAP)

creativity and invention. This is especially true in emerging economies, he adds.

"The actual physical design of Singapore will condition how innovation takes place in the city," he says. "You will see it in the neighbourhoods, coming from the civil, private and public sectors. It's about the quality of the interactions that the city has."

"We do see a lot more capacity at an individual level to innovate, for example using information sharing technologies," he says. "The level of transparency and greater availability of data should enable citizens and civic groups as well as businesses to contribute more effectively and in so doing create better solutions."

It's this kind of interaction that the city of Antwerp in Belgium is banking on.

Improving everyday lives

"Antwerp wants to be a smart city," says the city's Mayor Bart de Wever, "thus we have to open up our urban infrastructure."

A pocket-sized port city with 175 different nationalities, Antwerp plans to transform itself into Europe's largest urban living lab through the City of Things project. Working with the Flemish digital innovation institute iMinds and leading communication and tech companies, Antwerp is creating a citywide network of sensors and beacons for entrepreneurs, students and digital developers to test new products and technologies.

"Digitalisation and the fast development of technologies like blockchain [databases that allow public access but protect data from tampering] allow us to take giant leaps forward in civil services and work efficiency. They give the opportunity to see important metropolitan challenges from another perspective, to improve the quality of life of inhabitants in terms of housing, education, mobility or healthcare," says Mayor Bart, adding that "local governments have to be the pioneers and give breathing space to private initiatives to develop themselves."

Regarding the Internet of Things, Jonathan says he has his eye on products and services that will enhance the value of time and the value of life.

"Those are the things that move the needle in a consumer economy," says Jonathan. "Things like traffic control, healthcare, water resources, emergency response – things that will kill you if they're not done right. They make a difference to urban populations as we seek to become more productive, the tools that enable productivity by essentially allowing us to control our environment."

This relates to another global force that Jonathan observes – the dramatic pace at which technology is advancing.

"Being open to technology allows you to be competitive for the capital and talent that flows globally," says Jonathan, citing examples from industry-level development such as Jurong's consolidated port and energy efficiency programmes in manufacturing to technology that affects the personal lives of everyday citizens and how they get around, how they recycle and where their water comes from.

Ecosystems for innovators

But while Singaporeans can be early adopters of technology, Jonathan believes that Singapore's

My advice for Singapore is it needs to set aspirational targets to achieve real performance, to have a real impact at the citizen level. This is incredibly important and needs to be the mindset for innovation going forward.

Jonathan Woetzel,
Mckinsey Global Institute (MGI)
Director and Senior Partner, Shanghai

strength lies not in the development of consumer-facing industries, but in developing industry clusters, a critical mass of activities, talent and investment within an innovation ecosystem necessary to bring new technologies to market. He points to Singapore's approach to developing a water treatment industry as an example of how a global scale is not necessary to be excellent competitively.

The discussion then becomes about how city governments can enable innovation, or more specifically, how it can enable the innovators themselves – from inventors like Jack Ng, inventor and founder, SkyGreens, who are championing industry solutions through the use of technology and science, to civil servants who are working passionately to champion creative solutions for the delivery of public goods and services, to social entrepreneurs who are championing sustainable approaches to tough development problems, and even citizens themselves, who have the potential to create value for every project when given the opportunity to participate.

Citizens first

"The truth is we cannot rely on government to be innovative and come up with these solutions," says Ronni Kahn, founder and CEO of OzHarvest, a highly successful social entrepreneurship that has defined the path that Australia will take to end food wastage. "We have to collaborate with government, and government can facilitate innovation and ideas and people, and invest in them," she says.

Despite the glitter of technology and allure of trend-setting approaches, the success of any innovation ultimately comes down to people.

"Innovation is great but it also has to actually benefit the average person and it's not doing that," says Jonathan. "Innovation needs to translate into improvements in household income and the quality of environments."

"My advice for Singapore," says Jonathan, "is it needs to set aspirational targets to achieve real performance, to have a real impact at the citizen level. This is incredibly important and needs to be the mindset for innovation going forward."

Opposite | Antwerp's initiative engages its citizens in turning data streams into valuable information which can be used by new applications. Photo creadit: City of Things
Above | Residents at Tampines Changkat's neighbourhood renewal programme rethink how their living environment can be planned and designed. Photo credit: Participate in Design

Working towards active mobility

From tackling tree roots to changing mind sets, a group of dedicated planners, architects and experts are creating smoother and safer active routes, one pathway at a time.

Writer **Jennifer Eveland** | Photographer **Donn Tan**

In July 2016, Prime Minister Lee Hsien Loong launched Phase 1 of a new cycling and walking path in Ang Mo Kio. Though just four kilometres long, the crimson path was the culmination of two years of meticulous planning and signified the start of a 20-kilometre network that will connect major points within Ang Mo Kio and set the standard for other towns to follow.

By 2030, all HDB towns will have similar cycling and walking paths based on these standards. At the same time, a web of cycling paths will connect towns with each other and even connect HDB towns to the city centre. In addition, a 60-kilometre Round Island Route will encircle all of Singapore, making up a total of 700 kilometres of cycling track islandwide. Each kilometre will be planned with good practice safety standards for cyclists, pedestrians and motorists alike to make the choice for active mobility an easier one for Singaporeans.

Behind each of this pathway and network are teams of many passionate planners and experts who are creatively shifting our mindsets and landscapes.

Pong Shi Min, a URA executive planner is part of a team of up to 50 people from urban planners, to architects, civil engineers, quantity surveyors, a tree surgeon and other experts who tackled the challenge in turning Ang Mo Kio into a model walking and cycling town head-on.

First, the team had to get the support of residents. “We had a full-fledged exhibition and a lot of residents turned up,” says Shi Min. “We were not sure if residents would accept our ideas and so we wanted to do something more engaging and interactive to help people imagine the possibilities,” she says, “we created an installation with two bicycles in front of a video that played

Above | Bird’s eye view of Ang Mo Kio’s dedicated cycling path, marked clearly in red leading the way for a car-lite Singapore.

a moving image of the future cycling path to give people the illusion that they were actually cycling on it. It was a hit!"

While children peddled and had virtual races with each other and the MRT trains that ran beside, parents and onlookers were canvassed for feedback. Exhibition materials showcased the proposed cycle paths and had translations in different languages. Over the following six months these materials were on display at various community centres throughout Ang Mo Kio, while focus group discussions with residents, students and cycling groups provided further feedback about cycling paths, design treatments and safety concerns.

Every metre considered

In designing the dedicated cycling paths, the team considered every metre of track - the ideal width of the footpath and cycling path, how to treat minor junctions and informal road crossings to make them safer, how to slow cyclists as they approach areas where cyclists and pedestrians coincide, and what kind of signage and where to place them.

"A lot of our considerations had to do with human behaviour," says Shi Min. "For example, how people move around bus stops. Here we had to create pedestrian priority zones, which are a different colour from the red path to signal to cyclists that pedestrians are also using this space, and they must slow down and give way." In addition, before a bus stop, the red cycle path includes rumble, or speed reduction, strips and clear signage to alert cyclists as well as pedestrians.

For trees that may obstruct the pathways, the team has found creative ways around this that involved cantilevering the slab over roots to give them ample space to live and grow. "The trees are an important part of the streetscape," says Shi Min, "we want to make sure that the paths will not affect their health."

James Foo, an Ang Mo Kio resident who cycles once or twice a week for leisure and exercise, and sometimes for shopping has tried out the new "red carpet" and is excited for more to be rolled out. "I'm looking forward to the day I can cycle around the island off the roads," says James. "Separation from roads and cars is always welcome."

Above (top and bottom) | Bus stop with pillars before the cycling path was introduced and after implementation, where it has become a pedestrian priority zone.
Right | Artist Zoe Lin with pillar art created for Ang Mo Kio viaduct, bringing vitality to the public space.

Those who cycle

While pathways and networks are being built, more are already embracing active mobility on their own.

Earlier this year, Lyn Ahmad, an executive secretary at the Royal Bank of Scotland and a Yishun resident began cycling to work a few times a week from her home to her office in the Central Business District (CBD). The 42-kilometre journey takes her through Bishan via Ang Mo Kio, then along Thomson Road towards Orchard Road via Cavenaugh Road, then to Cross Street via North Bridge Road. The entire journey takes her about 50 minutes in the mornings, but about an hour and 15 minutes during the evening peak traffic period.

She feels that cycling is good therapy, helping her to relax from the chaotic atmosphere of the trading floor, which is where her desk is. “I’m fortunate that my office building has spacious bicycle parking which is monitored by CCTV,” she says. “My office has a shower facility, too. I have heard from other cyclists who want to commute to work but don’t have either of these two facilities at their office buildings.”

Good secure parking and shower facilities are a must for Martin Reimann, managing director of Edrington Asia Pacific, who says his building is new and geared for cyclists.

Martin clocks in around 250 to 300 kilometres per week on his bicycle. This includes a daily commute from his home in

Bukit Timah to his office in the CBD, following a path that varies and sometimes even meanders intentionally just for the pleasure of the ride.

"I always ride on roads, never on pathways," says Martin. "This is due to my view that they are safer as the majority of pedestrians today are 'plugged into' some device and have no awareness of their surroundings."

Ang Mo Kio resident Kenneth Tham and his cycling advocates have been "encouraging whoever we can, whenever we can, to start cycling for the past few years," he says. "The time and effort to collaborate with the various government agencies and non-government groups is finally paying off with these new initiatives."

Under the Walking and Cycling Plan announced recently, government agencies are also encouraging the provision of bicycle parking lots and "end-of-trip facilities" such as showers and lockers in developments. These facilities will complement the extensive cycling routes that will soon be rolled out within towns and between towns.

Martin believes that encouraging active mobility in Singapore is a matter of attitude and government endorsement of activities such as the provision of dedicated cycling lanes; regulations requiring all new building and infrastructure projects to include cycling facilities such as safe parking, showers and lockers; government incentives to encourage the buying and using of bicycles and to discourage car ownership; school programmes to teach safe cycling to children and overall programmes to build awareness of the benefits of cycling – benefits that include fitness, joy and a better environment.

Opposite | Lyn Ahmad leading the pack as part of the charity cycling event Ride for Rainbows in July 2016
Above | Martin Reimann joins the Edrington Cyclists in Taiwan in preparation for the charity ride from Taipei to Kaohsiung in November 2016. Photo credit : Lyn Ahmad and Martin Reimann

Creative hacks to public spaces

Turfing over parking lots temporarily or reusing a back alley space for a block party can have a profound impact on the way we interact with each other and our sense of place.

Writer **Justin Zhuang**
Photographers **Wilson Pang and Donn Tan**

Tampines Changkat residents are redesigning their park space. Marsiling Rise seniors have created their own void deck space in SilverCove. And piano enthusiasts have brought piano playing to the streets.

Creative hacks to public spaces are emerging, whether these are re-purposing void deck spaces, the patch of grass opposite our homes or a side alley.

The design and use of such "third spaces" including areas like playgrounds, parks and hawker centres where people interact in are increasingly important for liveable cities, says Deputy Prime Minister Tharman Shanmugaratnam at the World Cities Summit held in Singapore in July 2016. Given that these are public and common spaces used by everyone, citizens and individuals have a major role to play in shaping such spaces, he added.

And more are doing it, with the help of active groups like Participate in Design and COLOURS and programmes like Our Favourite Place.

Co-designing the public space

Involving residents in determining the types of public spaces they want can throw up new ideas, says Jan Lim and Mizah Rahman, founders of Participate in Design, a non-profit group working to empower citizens in co-designing community spaces. They did something different for Tampines Changkat's Neighbourhood Renewal Programme in 2015

as the then Member of Parliament Irene Ng wanted to involve her residents more.

Instead of just surveying residents and checking off key facilities and spaces as part of upgrading the public housing estate, they got residents to tour their neighbourhood mapping out existing issues and drawing up proposals themselves. And they came up with a whole host of upgrading ideas, including turning part of their park into a nature playground for kids. "If we had started from the survey, unless you had it written down, 'Park play with nature', that would not have come up because there was no room for things that did not belong to the standard, such as link ways and pavilions," says Jan. "But because we had a workshop [with the residents], we had room for innovative ideas."

How to harness the creativity of communities in designing community spaces themselves has always been on Jan and Mizah's minds even when they were architecture students at the National University of Singapore. "We were always wondering why we weren't doing more in our school projects to understand the people around there. Aren't the people one of the most important things? Especially when you're talking about architecture and space, when they are the ones using it," says Jan.

For their Master's thesis, Jan and Mizah experimented with this idea of co-designing spaces with residents in MacPherson and were hooked. That led to more projects and commissions. And in 2012, Jan left her job in a design studio to start PiD, together with Mizah, now an associate lecturer at Ngee Ann Polytechnic. Over the last four years, the duo have worked with residents, senior citizens, and even children on other community design projects, while still tackling issues from transport to neighbourliness in MacPherson.

New meaning in ordinary spaces

Founders of Collectively Ours (COLOURS) Chong Keng Hua and Kang Fong Ing see this co-design process as a way for residents to find new meaning in ordinary common spaces around them that can be used to address real issues. Formed in 2013, Keng Hua and Fong Ing, currently an assistant professor and an adjunct assistant professor respectively at the Singapore University of Technology and Design, started COLOURS after their encounters of the "entrepreneurship spirit" in the United States where citizens were actively addressing problems on the ground themselves.

One of their first project was 'Our City! Safe Streets' in 2013, a collaboration with Singapore University of Technology and Design students, Participate in Design and ReallyArchitecture (re:ACT). Working with residents, they turned four curbside parking lots along Circuit Road into artificially turfed lots framed by plants and signages for two days as a way of supporting the global PARK(ing) Day movement started in San Francisco. The initiative sought to raise awareness on the need for safer streets, trigged by an incident where a lorry collided with a cyclist at a junction along Circuit Road. The converted lots as community gardens and a safe zone for pedestrians to cross Circuit Road demonstrated the possibility of re-purposing spaces meaningfully.

Opposite | Local groups and individuals are re-imagining public spaces around Singapore for greater community bonding from carpark lots to the back alleys of Everton Park
Above | Dr Chong sharing a moment with Allan Ho (NTUC Health) who runs Silvercove's daily operations

Ground-up activation

Such conversions of car park lots into purposeful spaces for a day as part of the global PARK(ing) Day has now been extended island-wide, supported by URA from 2014 as a way of inspiring more ground-up interest in activating public spaces everywhere. Because of Our Favourite Place, a URA programme initiated since 2013 to encourage more ground-up efforts to rethink and activate public spaces around us, groups are also taking the initiative to start something on their own.

Play it Forward and local environmental solutions company Innoverde placed pianos and ping pong tables in different parts of the city in 2015 to liven up spaces and bring people together. Yan Chang, a URA architect and one of the co-founders of Play it Forward shares his passion: "In bringing pianos to public spaces, urban spaces become social spaces for interaction. We have brought together ordinary folk who give away their pianos for a good cause, beneficiaries who can now experience the joy of music with the donated pianos, local artists and designers who lend their creative talents to transform old pianos into art pieces and Singaporeans whose faces light up when their friends play a tune, and musicians now have a place to practise and perform."

Instilling a greater sense of place

Beyond just re-purposing a space, residents who come up with their own designs and solutions also begin to develop a greater sense of place and a stronger desire to want the space to work. This is evident in SilverCove, a senior activity centre in Marsiling Rise that Keng Hua and Fong Ing were deeply involved in. The people behind the design of the centre's health and dental check-up facilities, a senior-friendly gym, a reading corner,

gardening walls and a bright and airy sitting area are some 30 residents living in the studio apartments above. Instead of commissioning a top-down design solution like in previous centres, NTUC Health commissioned COLOURS last year to work with the seniors to design the spaces.

The result is a strikingly different solution despite the similar budget, says the organisation's senior manager Allan Ho. "This is better because it has the input of the residents so they feel that people are listening to their ideas," he says. "Some of them are members because they have went through with us the design from the very beginning."

Pointing to SilverCove's gardening wall of assorted plants, including periwinkles in bloom, Fong Ing adds: "You see the plants, they are doing so well! Even better than those in my house!" As the residents badly wanted a garden in the centre, COLOURS successfully figured a way of turning its 40-centimetres wide window ledge into a platform for gardening. "It's very memorable to see people taking care and continuing the vision that we set," adds Fong Ing. "We only lay the foundation, but the residents are the ones that carry and continue it on."

Breaking down barriers

This sustainability extends to the community itself too. Designing together breaks down barriers amongst neighbours who hardly know one another nowadays, says Jan. Through a survey, P!D found that most people in Singapore would solve problems themselves or report it to the authorities, but not work with their neighbours. The reason, Jan speculates, is that people simply hardly know one another or their skills. Working together builds communities and also helps them realise the complexity of issues and see from the perspective of others.

When P!D worked with residents of the Geylang East Home for the Aged to enliven a space outside their centre, they soon realised their initial proposal to attract youths was problematic when some in the group pointed out how rowdy they could be. "That was a very pivotal moment not just for us as designers to understand, but for the participants in the group to realise that there are many other points of view and it's not as simple as I want a youth centre," says Jan.

In guiding residents to discover their own solutions, Jan and Keng Hua think it is important to spend time understanding the underlying issues and simply listening to what they have to say. This can be challenging with reticent Singaporeans. Both groups have developed ways to tease out opinions and feedback, for instance, using scale models and visuals instead of having open discussions that can either turn silent or be dominated by a few vocal figures.

To ensure their efforts are inclusive, the designers also conduct workshops in small groups so that everyone can contribute, and provide accessible materials in different languages for the different ethnicities, seniors and even children to understand. Ultimately, to design with a community is about leveraging on their unique abilities, says Jan. "It's not just looking at the flaws, like what is not working, which is very much a part of the nature of design — what doesn't work, let's fix it. But it's also looking at what already works, and can we create spaces that can use these skills and celebrate them."

Everyone has a part to play

While many question why they should go into an area which is traditionally left to design professionals or the government to address, says Keng Hua. "A lot of times we feel that the responsibility lies with whoever has the authority. That probably is right in the past because we need things to move very fast and solve a lot of urgent issues," he says. Today, "responsibility" needs to be redefined from having the "power to respond" to the "ability to respond", adds Keng Hua, and every one of us can play a part in designing our spaces.

Other government agencies leading the way include the Housing and Development Board, which is working with COLOURS to create the very first void deck with mobile instead of fixed furniture, and even the National Arts Council, which has worked with P!D to spread their participatory approach to the arts community too. Such partnerships are vital to ensure cities are designed from both the ground up and on a policy level, says Jan. "Participation is not just about we do our thing and we do it independently. The ideal state is where it is balanced. It's both from the top and the bottom, and people are hand in hand working together."

Interested in activating a public space yourself or working with communities? Reach out:

URA's Our Favourite Place programme
ura.sg/ourfaveplace

Participate in Design
participateindesign.org

Collectively Ours
col-ours.com

Opposite | Residents who co-designed Silvercove, a senior activity centre enjoy gathering in the shared space and strengthening the bonds they share

Bringing back the kampong spirit

Photographer Mindy Tan explores the activities and significance of spaces around us.

Writer and photographer Mindy Tan

In the days of the kampung, our lives spilled out to the streets. Today, we are a much more private and organised people, keeping to ourselves in our cloistered enclaves. Yet, we need to go back to the basics – giving life to our public spaces is the way to go in fostering a community spirit and play spaces for our living needs, for variety and energy within our city.

Creating community spaces gets people to come out to play and gather, especially in land-scarce cities like ours. “I sense a change, I see swings popping up around the city,” says Chris Fong, who was cycling past 8Q at Sam and spotted a piano in the courtyard, a result of Play It Forward, a project that places donated pianos in public spaces for everyone to enjoy. The skilled pianist gamely got off his bicycle and onto the piano seat for a long practice session belting out melodious tunes. “This (piano) would be a hit over the weekends,” he says.

Architect Bryan Lee adds: “Based on Singapore’s culture, public spaces need to be accessible, encourage social activity while being comfortable both in terms of environment and space. Public spaces should cater and encourage change throughout its lifespan…that’s the only way it will continue to be used and engaged.” Bryan suggests exploring the use of ‘small plots of undefined land within urban spaces’ existing as residual space such as spaces under MRT tracks and expressways like the Benjamin Sheares bridge.

Above | Decorated park bench painted by NAFA students, as part of the Bench Art project

Above (clockwise from top left) | Hawker centres serve more than food, they are also places for gathering, relaxation, watching tv, reading the newspapers and for a tea break. / No matter the time of day, there is always a game of chess going on at Smith Street, Chinatown. / Artists in a live drawing session at Waterloo Street. / 'Adopt a book' outside the substation, as part the post museum's take over exhibition 'survey'.

Above (clockwise from top) | Mr Chris Fong stops by 8Q at SAM to try out the piano that is donated as part of the 'Play It Forward' project / Skaters, stunt bikers and parkour at the skate park, where pop-up events like the Black Market are sometimes being held. / Skate Park in Somerset, ever a crowd favourite.

People come first

How one mayor finds innovation within communities.

Writer **Jennifer Eveland**

For Mayor Dato' Maimunah Mohd Sharif, people hold the key to problem solving within their communities. Overseeing Seberang Perai, a cluster of towns on Malaysia's mainland just opposite Penang island, she has initiated several successful programmes to enliven public spaces within her district, including the Butterworth Fringe Festival, an annual celebration of local and international arts; the JKKK Butterworth City Ride, an annual 25 km cycling event to encourage active lifestyles and community spirit; and Aspen Vision City, an eco-metropolis built from ground up.

After she took office in 2011, her constituents asked for improved public spaces in the neighbourhoods where they lived and worked. To date, 23 out of 67 targeted open spaces are completed and adopted by various organisations and agencies the likes of Sony and Sunway Hotels. Another two are in progress and eight are approved. The results have been tremendous.

How did you do it?

We have limited resources. But all this time, while we've been doing public-private partnerships, we haven't been engaging the people. Once we did, we were surprised. There was an open space next to a temple, and the temple committee said they would like to take care of it. They offered to improve and even maintain it.

In order to do this in a transparent way, we came up with a standard operating procedure for anyone who wants to take over a public space. They can submit an application and proposal on how they want to design or improve the space and provide a budget. Once it's approved by our committee and technical department, it's presented to the public in an open council. If it is approved, they can improve and manage the project for five years. Previously, we had a problem with vandalism and people burning park equipment, but it was because we didn't ask people what they really wanted. Now, vandalism has decreased because people have a sense of belonging.

As mayor, what is your philosophy?

In terms of priority, I put people first, then spaces and buildings, in that order, meaning that normally we put the building first then only think about the people. Now we think about the people, then we look into the building.

To me, the first thing that leaders must have is a vision, and then they must understand the cities they are leading. In order to understand, they must go to the people, because that's where community engagement is. Sometimes we underestimate the ability of people on the ground to solve challenges in very simple ways.

I challenge the idea of "think global, act local". I would like to change it to "think local, act global" because as a mayor, if I don't understand what is at the local level, how can I implement global policies? I have to think local as a city and then try to bring these ideas to the global, national or state level, where ideas can become policies.

Who inspires you?

My staff ask me, "Dato', what vitamin do you take that you can have so much energy?"

I tell them I take Vitamin P.

"Vitamin P?" they ask. "You've got multi-vitamins. You've got zinc. Vitamin E, but which one is P?"

Then I tell them it's Vitamin Passion! Passion to do my work!

I owe a lot to my late parents. They were very typical kampong folks. They taught me that whatever level I achieve, I must do my best and always be humble.

Photo credit : Majlis Perbandaran Seberang Perai

A district of the future

Throughout the second half of 2016, multi-disciplinary teams of urban development experts will be drawing up concept master plan proposals to develop Jurong Lake District into 'A District of the Future'.

Writer **Jennifer Eveland** | Photographer **Wilson Pang**

An area best known for industrial activities and public housing estates, Jurong has been a town in transition for over 25 years.

By 1990, Singapore was an emerging economic force in Asia, the nation's major highway system and the first Mass Rapid Transit (MRT) line were nearing completion. In line with these developments, the Concept Plan of 1991 outlined a strategy that would decentralise economic activity, creating commercial centres in Jurong East, Woodlands and Tampines, bringing jobs closer to homes in the heartlands and relieving the downtown urban core of commuter congestion.

The URA Master Plan of 2008 developed this notion further, with a blueprint that would transform two precincts: Jurong Gateway, centred around Jurong East MRT station, and neighbouring Lakeside, surrounding Jurong Lake, into a commercial hub and leisure destination, respectively. Eight years on, anchor developments such as JCube, JEM, Westgate and Genting Jurong Hotel have added retail, office, leisure and hospitality facilities to Jurong Gateway. The Devan Nair Institute for Employment and

> Culture is very important to generate identity – the cultural identity when people have the idea that we are living not somewhere in the outskirts, we are living in a city centre and it's our city centre. When people feel, 'We are from Jurong' not just somewhere in Singapore.
>
> Jurgen Rosemann,
> School of Design & Environment
> National University of Singapore

Employability has signalled a movement of social and government-related agencies to the area. Meanwhile, in Lakeside, the Public Utilities Board's Active, Beautiful and Clean Waters programme, National Parks Board's revitalisation works at Jurong Lake Park and the Chinese and Japanese Gardens to transform them into Singapore's third national gardens, and plans to develop a new science centre in the medium term are enhancing the leisure attractions of the area.

A second business district

This year's request for proposal includes a new mixed use business precinct, Lakeside Gateway. Located between Jurong Gateway and Lakeside, this area will be built around the terminus for the High Speed Rail, which is anticipated to be an economic boon for both Singapore and Kuala Lumpur. Also significant is the mega port planned for Tuas. These two developments add economic heft to the district's bid to become a viable business district.

"Singapore should make the step to decentralise beyond only one business district," says Jurgen Rosemann, visiting professor at the School of Design & Environment at the National University of Singapore. "We have 5.34 million people here now, what will happen when we have seven million people? The current central business district will grow and grow, concentrating the problems in that area."

An example can be found in the Randstad, a metropolitan region in the Netherlands which combines the cities of Rotterdam, Amsterdam, The Hague and Utrecht and their surrounding areas, all of which are very highly connected, says Jurgen.

While the Randstat's total population is 7.1 million, each city within the region is compact – Amsterdam has about 850,000 people while Rotterdam has only just over 600,000. Populations are kept deliberately small to avoid congestion and encourage active mobility such as walking and cycling.

"Instead of growing these cities, they make new towns where half of the people who live there also have a job there. This creates non-commuting communities," says Jurgen. But the alleviation of traffic jams isn't the only rationale for a second business district. It is also key for economic development, says Jurgen.

Adaptable spaces for the future

"An important issue is elasticity," he says. "This refers to a city's ability to adapt to new developments. With one Central Business District there is no elasticity since the flexibility of existing built-up areas is limited because of the time and expense of demolition and rebuilding."

A secondary city centre, and even a third or fourth, he says, makes it easier for a country to adapt to changing economic needs because of access to undeveloped land.

Adaptable spaces that can meet future challenges is a core goal of the Jurong Lake District project, which means the incorporation of future-ready and flexible spaces that can accommodate a mix of businesses including research and development facilities, education and training institutes, small- and medium-sized enterprises, business incubators and investment firms.

The Jurong Lake District Master Plan will also contain car-lite and connectivity plans, public space strategies, plans for the use of underground

Opposite | J-walk, an elevated and seamless pedestrian link bridge connecting Jurong East MRT to key developments in Jurong Gateway and Lakeside including Westgate and Big Box.

space and environmental sustainability strategies. District-level infrastructure, utilities and urban systems such as a district cooling system, a common services tunnel, a pneumatic refuse conveyance system and urban logistics also become possibilities.

A sense of belonging

Besides economic considerations, another core goal of the project is to create an inclusive district for the community, because the success of Jurong Lake District relies only partly on the success of the businesses there. It has to also serve the heartland community that calls Jurong home.

"Think about how Jurong can be more than just a business district," says Jurgen. "Culture is very important to generate identity – the cultural identity when people have the idea that we are living not somewhere in the outskirts, we are living in a city centre and it's our city centre. When people feel, 'We are from Jurong' not just somewhere in Singapore."

According to Jurgen, urban planning can help create identity through stimulating architecture and facilities that host world-class exhibitions or internationally acclaimed concerts, events and places that would make the district a destination that generates pride and excitement within the community. It is a pride that Jurgen says should strive for resonance beyond Singapore, reaching international recognition for Jurong. This kind of city branding he says generates a lot of value for businesses who wish to invest there.

The steering committee will select the best concept master plan in February 2017.

Above | Poised to become a district of the future, Jurong Lake District will not only help drive Singapore's growth in the future economy, but be a wonderful, inclusive destination for the community.

Unlocking value from data

While invisible to the eye, data is charting significant terrains for cities.

Writer **Cherie Thio**

Research from the International Data Corporation has shown that data is growing at an exponential rate, and the size of all data in the world is expected to double every two years. In 2013 alone, about 4.4 zettabytes of data – that's about 4 trillion gigabytes – was created and copied from sensors, mobile phones and computers from all over the world.

Making sense of data

"Cities are now generating data at an unprecedented rate. But the mere production and collection of such data in itself is not value-generating. What is value-creating is connecting the dots to make new discoveries and applications. It is the analytics and the applications that would turn data to gold," says Ying Shao Wei, chief operating officer of DataSpark.

DataSpark is a data analytics subsidiary of Singtel which leverages its telecommunications and other sources of data to provide geolocation analytics on tourism, retail marketing, public transport and others. In developing their data analytics systems, Shao Wei's team realised that knowledge of movement patterns of a large and representative sample of the population would be of great interest to planners.

Called GeoAnalytics, DataSpark's system provides a deeper look at commuter patterns and behaviour. Picking up on digital trails automatically generated by smartphones as their users move about the city, their data scientists can give details on when and how people travel to and fro in their daily routines, the amount of time they take in their commutes and so on. This allows them to determine information such as how crowded an MRT station is at any given time, locations of workplaces and homes, and how close people live to an MRT station.

Consolidating and analysing this data across their sample can shed light for planners on first-mile and last-mile connections as well as how to increase the effectiveness of the public transport network. "Such quantitative findings can either confirm certain observations, or reveal unknown patterns, particularly around more localised events," says Shao Wei.

Data-driven planning

For urban planners, transportation data is just one piece of the tapestry. Planning today requires a holistic understanding of all the branches in the city ecosystem, such as age demographics, land use and distribution of amenities.

With a comprehensive three-year plan to digitise its planning processes, URA is building up a comprehensive digital repository for smarter planning. In addition to the vast amount of planning data that URA has already collected, digitised and geo-tagged over the past year, it will also be digitising all 37 million of its historical planning records that are currently archived on microfilm, and integrating data from various sources such as other government agencies and public domains.

"We are making a concerted effort to deepen our planning capabilities for the future by building robust data architecture and developing various advanced digital planning tools. The comprehensive three year digitisation plan will also allow us to redesign our planning processes to be more effective and productive, and strengthen our collaboration with other agencies and the industry," says Peter Quek, chief information officer of URA.

In parallel, with this planned repository of different datasets, URA planners are also experimenting with digital planning tools that can bring together a whole spectrum of data onto a

single platform. These were recently exhibited at URA's latest Urban Lab edition called "Our Digital World", along with other projects that similarly harness and apply data in innovative ways to drive improvements in public services.

The GIS-Enabled Mapping, Modelling and Analysis (GEMMA) platform is one such planning tool. Shared across agencies, it can overlay multiple sets of data on population demographics, infrastructure, and transportation and so on to form a multi-dimensional view of the city. Armed with this sharper perspective, it is easier for planners to uncover new relationships and patterns that will help them identify optimal sites for various land uses and future development when working on the Concept and Master Plan.

Based on the stitching together of these multiple datasets, GEMMA can also potentially generate multiple planning scenarios that planners can test and evaluate in order to provide optimal services and infrastructure for our citizens.

Gearing the community

Tapping on data to build more liveable cities is not just for planners. "The best way that data can be used is to empower individual citizens to make good choices and build good communities," says Dr Erik Wilhelm, who was the principal investigator of the National Science Experiment (NSE).

He explains: "If, as we did in the NSE 2015 and 2016, we provide students with personal data about the carbon footprint that their transportation decisions made, the statistics become much more personally relevant and will lead to greater awareness and hopefully, better and more sustainable decisions."

NSE is an island-wide outdoor science experiment to inspire and educate young Singaporeans in exploring data and its potential. In its first run in 2015, over 43,000 students tracked their own carbon footprint, travel mobility patterns and the amount of time they spent indoors and outdoors over four days. This was data they had collected themselves by wearing a sensor on a lanyard while going about their daily activities.

While the collected data would prove meaningful for planning, the students are reaping the greatest benefits. As data increasingly becomes a driving force in the country, it is also becoming more essential for the community to learn what big data can do and how it can shape our lives and environment.

Above | Students from Raffles Institution using the SenSG device to measure environmental data from their surroundings, such as temperature and light intensity. Photo Credit : National Science Experiment

Above (top) | Students from Hong Kah Secondary School experimenting with the SenSG device. Photo Credit : National Science Experiment
Above (bottom) | Students from Wellington Primary School logging into the National Science Experiment website to explore their individual data such as steps taken and carbon footprint

"The major urban challenge the project was designed to address and successfully tackled is to teach students about the increasingly important concepts of 'Internet of Things' sensors as well as how to understand the data they generate," says Erik.

The data that the students collect are transferred wirelessly to a central online portal where students can log in to study their individual data and the combined data of their peers. From there, students will be able to know how many steps they take in a day and what their carbon footprint is like compared to the rest of their peers.

This hands-on approach to studying their own data provides more interesting learning opportunities as students figure out why something is a particular way in the data that they are seeing. Teachers can also leverage on the data to teach concepts and develop interesting physics lessons. For instance, students at St. Gabriel's Primary School can now derive plots and charts from their data and use them as evidence to support trends they had observed.

This year, the project team will also launch a 'Big Data Challenge' competition where students can play around more with consolidated data sets and come up with their own analysis to interpret the data. The aim is to educate students on data as well as familiarise students with the use of data analytics and tools.

Drawing the right conclusions

In the second run of the NSE this year, students would be able to track when and where they felt happy simply by pressing a button on their sensor in the second run this year. Such personal user-generated data can provide a new avenue in understanding the public's experience with services as well as potentially obtaining valuable indications of the ground sentiment.

Erik says this information would also help explain the causality behind relationships that they have derived from the data, which he cautions as a possible pitfall when examining large sets of data.

"As with any statistical analysis, the most difficult step is determining the causality behind the correlation. Once we know a relationship exists, (for example, students often go to bed after 10:30pm over a certain period), it is then our role to use the data to help tell the story about why that relationship stands (the students are partaking in the experiment at a busy period around their examinations)," he explains.

When interpreting data, planners should also be aware of potential biases that they may like to see in the data. "The best strategy to overcome these biasing challenges is to write down explicit questions, and apply mathematical rigor to find the answers – and to be brave enough to say 'we don't know' if the results are inconclusive," he says.

Connecting the dots and drawing the right patterns also depend on whether we can continue to be ahead at the forefront of data research and keep up with technology advances.

"A challenge that a company like DataSpark faces in exploiting data analytics would be the need to innovate on the technology front so we become better and faster in picking up patterns and anomalies in any sensor dataset," says Shao Wei.

Securing privacy

Working with user-generated data from mobile phones and students such as in DataSpark and the NSE naturally raises questions about data privacy, which both parties say is one of their top priorities.

Before Singtel hands over the data to DataSpark, all of it would already be anonymised to avoid identification of the customers. DataSpark would also present an aggregated set of data to further reduce the risk of identifying individuals. For example, instead of reporting a specific number of people in a location, they would generalise it to perhaps less than 200 people in the location. All Singtel customers have the option to opt-out as well.

"Once consent is explicitly withdrawn, none of their customer data will be used by DataSpark for such analytics," says Shao Wei. Singtel also ensures that they are complaint with Singapore's Personal Data Protection Act.

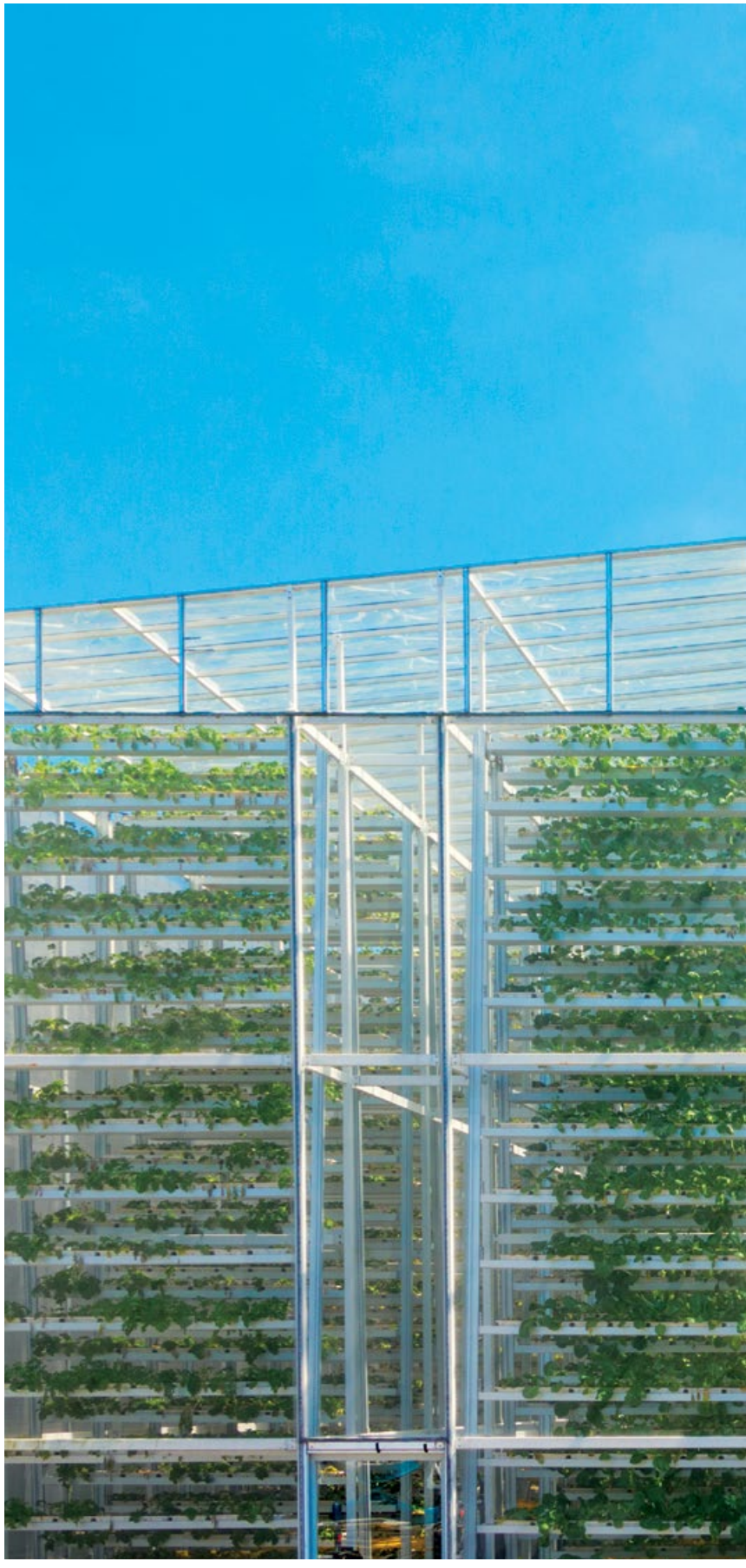
While the data in the NSE does not constitute as private data under Singapore's Personal Data Protection Act, Erik says that protecting the individual privacy of the students participating is one of the things that his team was most concerned about. They do not know who is carrying which sensor when they analyse the data and only publish aggregate anonymous results.

"We are extremely cautious when handling the data since location trajectories can also reveal identities when correlated with other information (for example, where were you likely to be at 2:00AM?). As such, we employ industry-standard security measures designed and implemented by our partners at the A*Star IHPC, and we never release high-resolution trajectory data for publication. The question of how to anonymise such data is still a very active research problem which we are also investigating, but until we have a good answer, the data will stay in its secure vault," he says.

Urban farm to table

How technological innovation can help land-scarce Singapore build a viable food-production industry.

Writer **Jennifer Eveland** | Photographer **Shan Tsing**



By 2050, we will need to produce 70 percent more food than what we are producing today, says the United Nations and Agriculture Organisation. By then, nine billion people will call earth home according to the World Health Organisation, and 70 percent of them will live in cities. As issues of food security come to the fore, food production researchers, entrepreneurs and industry players are looking at technological innovation and urban development solutions to ramp up food production, drive economic growth and benefit the environment simultaneously.

"Land scarcity for agriculture is more acute in Singapore than in other Asian countries, as we are essentially an island nation that is largely urbanised and reliant on imports for most of our food," says Jack Ng, inventor and founder of Singapore-based Sky Greens, the world's first low-carbon, hydraulic-driven vertical farm.

Case for vertical farming

Jack, a retired engineer, began experimenting with vertical farming prototypes in 2009, and a year later had already signed a collaborative research agreement with the Agri-Food and Veterinary Authority of Singapore (AVA). Together they developed a vertical faming solution that could be deployed on building facades and in green buffer zones and industrial estates – basically within the working and living spaces in Singapore and other cities.

The system consists of growing troughs that are mounted to an aluminium A-frame. The troughs rotate around the frame, providing plants with uniform access to sunlight, water and

Above | Sky Greens' 'A-Go-Gro' tower can reach up to a height of 9m with each rack of vegetables getting 30 mins of strong sunlight every day.

nutrients. Frames can reach up to nine metres, accommodating 38 tiers of troughs, which can support either soil or hydroponic media.

In 2012, after successful test-bedding, Sky Greens began commercial operations.

According to Jack, there are many constraints to local food production that can be addressed with this technology. He says that according to the AVA, Singapore currently imports over 90 per cent of its food. The island has limited arable land to produce vegetables and current farmers' average productivity is only about 100 tons of vegetables per hectare using predominantly traditional cultivation methods. Since land is a finite resource, efficient and sustainable methods of growing vegetables need to be adopted to boost productivity.

Another constraint, he says, is water. "Singapore does not have natural water resources, relying on rainwater catchment, imported, new water and desalination plants," says Jack. "Food production requires very high water resource and this will compete with domestic consumption and industrial needs."

Then there is the difficulty of hiring labour in the agricultural sector, as food production is a traditionally strenuous and labour-intensive activity.

All of these issues are addressed by Sky Greens' innovations.

"Our vertical farming system is able to produce up to 10 times more than traditional farming using the same land area," says Jack. "Furthermore, due to our closed-loop irrigation design there is zero agricultural run-off and cultivation can save up to 95 percent of water resource as compared to traditional open field farms. Our system is also more ergonomic in that it enables farmers to work in a less physically demanding environment yet more productive manner."

Rethinking food production

Making the best use of resource-efficient technology is the way to solve the world's food production problems, according to Dr Peter Smeets, senior research scientist and agriculture masterplanning specialist with the Metropolitan Food Clusters and Sustainable Development team at Wageningen University in The Netherlands.

"A lot of these technologies are becoming soil-independent, for example greenhouse and high-productive livestock production are no longer dependent on soil and soil quality like they used to be in former times," says Peter. As a result, he says, the food production chain can be easily located near cities where they can make use of the logistic infrastructure.

Considering the industrial food processing steps our food undertakes, urban agriculture puts food that much closer to processing facilities. Another factor is consumer responsiveness, or the ability to quickly and effectively respond to changing consumer preferences, which he says is increasing competition between food producing companies.

"For consumer responsiveness you need very close contact with consumers when you are a food producer," says Peter, "and this is something that happens in and nearby cities, not when you are out there somewhere in the rural areas."

Finally, when you move production into urban areas, there's an implication of competition for

land and resources – high land prices would drive the most efficient use of space, he says.

"So there are many arguments why modern food production and processing will develop in or near metropoles," says Peter. "You need space, you need logistics, you need a harbour that gives you the opportunity to import and export because you need to be connected to the global food system. And you need entrepreneurs."

Test-bedding farming solutions

Sky Greens isn't the only company eyeing the urban agriculture market. Panasonic Factory Solutions Asia Pacific (PFSAP) built a factory farm in Singapore three years ago. The farm produces Veggie Life brand salad mixes, which are available in select local supermarkets.

"Singapore has the excellent infrastructure and talent base that is required to develop high-tech urban farming solutions," says Ishii Tatsuyoshi, PFSAP managing director. "There is also great support from local government agencies such as AVA, with whom we are exploring research projects on productivity improvement. We also worked with local industry experts who helped us achieve our Hazard Analysis and Critical Control Points (HACCP) certification, endorsing that PFSAP meets stringent food safety standards."

Singapore is the first country outside Japan where PFSAP has built an indoor farm, and it employs a number of technological innovations that have boosted productivity and reduced waste.

"Crops are grown in a soil-based environment where light, temperature, humidity and carbon dioxide are controlled to ensure optimum conditions such as high nutrient levels," says Ishii. "Various processes are automated, for example our seeding and potting automation system, which has helped to double productivity compared to manual seeding and potting. The irrigation system in our soil farm is now semi-automated, reducing irrigation time by 60 percent. Washing of the vegetables during the potting process has also been automated. What used to require three workers has now been reduced to one."

Panasonic plans to continue its R&D efforts in Singapore, exploring hybrid technology that combines the advantages of soil-based cultivation methods and hydroponics, and offering local franchising to farms or other businesses that wish to explore indoor urban farming, and possibly even residences. By next year, the company hopes to enter other Asian markets like Vietnam, Indonesia and Thailand.

Sky Greens has also set its sights on international markets, having built vertical farms in Thailand and Hainan, China and with plans in the pipeline for other Chinese cities, Malaysia, Vietnam and Hawaii.

In terms of the market potential for urban industrial food-production, Dr Smeets' colleague Mirte Coffino says that their clients at Metropolitan Food Clusters and Sustainable Development tend to be investors and bankers who see food production as a long-term investment sector in which they can safely invest their money, "because everyone needs to eat," she says.

Singapore is the role model for Asia in terms of sustainable development for cities, says Peter. So if a model works in Singapore, it will be successful in China. Therefore, anyone eager to get into the business he says will be attracted to Singapore not for big profits, but for the chance to develop a model that will work in China.

Models for self-sufficiency

Economic potential aside, Peter also believes that urban industrial food production is also good for the environment. "What we call resource-use-efficient food production, it is highly productive yet it makes use of technology in such a way that emissions are near zero," he says. "On the global scale, but also in and near cities, with high tech production we are able to shrink the amount of space that is needed, freeing more space for biodiversity."

All this spells sunny skies for sustainable food security. Sky Urban, parent company of Sky Greens, envisions the Agropolis SG100, an industrial park that incorporates 16 blocks of vertical farming systems; two 10-storey facilities for the cultivations of high-value vegetables, eggs and fish in a near natural carbon-equalized ecosystem; three 10-storey mega high-tech factories; plus facilities for R&D, recycling, food processing, packaging, logistics, distribution and retail activities.

On just 20 hectares of land, Sky Urban estimates that Agropolis SG100 can produce an annual yield of 30,000 tonnes of leafy vegetables, meeting more than 30 percent of Singapore's total consumption.

"We're working to integrate different production and technologies, marrying different disciplines and know-how," says Jack. "The Agripolis SG100 concept epitomises this by combining the natural ecosystem with commercial value chain to derive a holistic and sustainable model for intensive cultivation. We hope to realise this vision to achieve self-sufficiency in our national food security goals."

Ronni Kahn on rescuing food

Ronni Kahn, 63 and a mother of two started the successful social enterprise, OzHarvest in 2004. It has changed the whole face of food waste in Australia and delivered over 50 million meals to vulnerable people.

Writer **Jennifer Eveland**

Why focus on food waste?
I had an event production company and had reached a point where I had enough food on the table, a roof over my head and two healthy sons. I wondered, 'What else?' I wanted to know what my purpose was. Through my business I had thrown away so much food. At the end of each event, there was always so much left over. But there was nowhere and no one who could take it and do something good with it. It was a problem that needed fixing and I figured I needed to be the one to do it. We've just delivered our 50,300,000th meal.

What was your biggest hurdle?
The biggest challenge came initially. Some of the major suppliers like supermarkets and hotels wouldn't give us their surplus food because they were worried about liability. So we lobbied and had laws amended to allow good food to be given away for free without any liability. It changed the whole face of waste in Australia. It involved getting lawyers on board, sharing the challenge with them and getting them to use their skills to work out how and who to lobby. It took just over a year to get the first law amended in New South Wales, and then another three years in Canberra, and another year in Queensland. Then the rest of the states followed because of our example.

What is your advice for those wanting to do something meaningful?
Many people are looking for purpose. I was privileged to find a niche that was completely

untapped, but over the last 12 years a lot has changed in the space of social entrepreneurship. Don't start something for the sake of starting it, but if you have identified a challenge that there is no solution to, chances are you have the seeds of creating a solution. Make sure that what you're offering is useful and meaningful, even if you don't know how big it's going to be. Everybody has the capacity to tap into something. Just go for it.

When I was growing up all I thought I needed was enough money to live an exotic life. And I can tell you, doing what I love and having found a purpose that makes a difference to the world has given me exactly what I always wanted. We're all waiting for that one day – one day when we've paid this bill, one day when the kids are grown, one day when... there is no such thing. All we have is now.

OzHarvest is a food rescue organisation that collects perfectly edible surplus food and distribute it to vulnerable people who don't have enough to eat. Today, OzHarvest employs 125 people and manages 2,500 volunteers in seven Australian cities and regions. In addition to food "rescuing" and distribution, OzHarvest also educates consumers about food wastage, teaches vulnerable people how to take care of themselves, provides hospitality industry training for vulnerable young people, and engages the donor community in creative ways. Ronni Kahn spends her time travelling around the world these days promoting the OzHarvest model in other cities and even smaller communities. She has partnered with the United Nations Environmental Programme (UNEP) and the Food and Agriculture Organization (FAO) to deliver the Think.Eat.Save Reduce Your Foodprint campaign globally, with the goal to reduce food waste 50 percent by 2030.

Photo Credit : OzHarvest

URA SPACE – 10 things you should know

Writer **Jerry Yip**

The combination of digital technology and big data can be harnessed to open up new and boundless opportunities in the way we deliver services to Singaporeans.

URA's new online portal, URA SPACE (Service Portal and Community e-Services) offers new enhanced features alongside useful data on its online map services to help building professionals, businessmen and the general public in their decision-making.

It consolidates detailed land use, private property and car parks related information onto a single platform presented on geospatial maps – maps embedded with data – for users to easily view and search for information.

01—Users can access information relating to the master plan, urban design guidelines, private property use and approval, car park locations and availability, private residential property transactions, and conservation areas and buildings.

02—A new function called "Allowable Use For Shophouses" allows users to readily check the allowable and last approved uses for private shophouses in Singapore. Previously, applicants may wait up to 7 working days to receive the information.

03—Previously, a search fee of $53.50 (inclusive of GST) would apply to enquiries for approved uses of shophouse premises due to the time and effort involved to search the records. Now, it's free! URA is probably one of the few cities in the world to offer such a service.

04—Business operators can print a copy of the allowable use reply for record purposes or use it to obtain licences from other agencies. Such instant online replies will be of great help to business operators in their decision making.

05—Home owners and buyers can also obtain private property market transaction information by property types.

06—There is also a data service that provides real-time parking availability in URA and Housing Development Board car parks, as well as commercial car parks that provide data to the Land Transport Authority.

07—Guidelines on urban design and conservation buildings are also readily accessible, allowing a one-stop reference for building owners.

08—The data is presented on a map in GIS (Geographical Information System) format, with a 3D map feature, so that the search for information becomes more intuitive and convenient.

09—URA SPACE is accessible on multiple devices, including Apple and Android tablet devices, enabling users to search and access the information they need while on the go.

10—This new service is piloted for six months from June 2016 to gather feedback for further improvements to better serve the public.

Visit URA SPACE at www.ura.gov.sg/maps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Property Use and Approval
Conservation Areas and Buildings
Urban Design Guidelines
Car Parks
Private Residential Property Transaction
Data Services
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Marina Bay Reservoir
Shenton Way
RIVER VALLEY RD
MERCHANT RD
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At a glance

We check out the latest initiatives and ideas shaping the landscapes and neighbourhoods around us.

#CarFreeSunday SG is back

If you have enjoyed the earlier Car-Free Sundays at the Civic District and parts of the Central Business District, join in the car-free activities again on the last Sunday of every month starting from October 2016. In the larger spirit of imagining our city with lesser cars, what else can we do on a personal level to encourage greater active mobility in our lifestyles? Share with us your thoughts on Twitter (@URAsg) and Facebook (@URASingapore)!

Bus stop worth waiting

Many of us may be staring at our phones when waiting for the bus. But if you happen to be along Jurong Gateway Road at Jurong East Central, look out for a special bus stop – you can swing around, download e-books, check the weather or see illustrator Xin Li's works. A fun project by DP Architects, they want us to rethink even bus stop spaces as an extension of our social environments – these need not be boring. Want more of this? Share your views at AUDE@ura.gov.sg

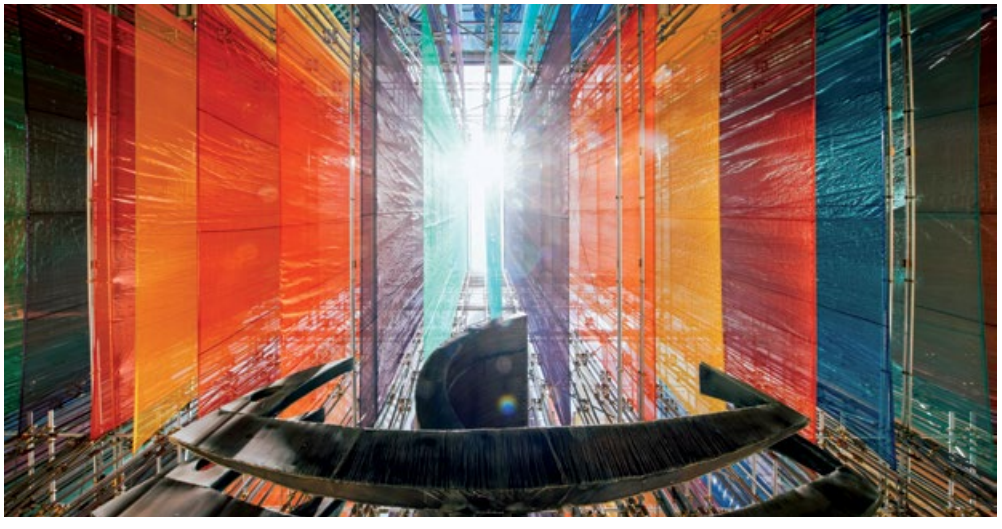
Turning public spaces into fun spots

Fancy a spa experience by the road? Or jamming on a ukulele? Returning for the 3rd edition in Singapore, PARK(ing) Day 2016 saw the largest participation from schools LASALLE College of the Arts, Singapore University of Technology and Design (SUTD), Republic Polytechnic and more. Participants transformed 78 parking lots around Singapore's city centre and heartlands into 'PARKs' on 16 September 2016, bringing the spirit of innovation and creativity into our public spaces. Got an idea on how to transform public spaces in your neighbourhood? Visit Our Favourite Place on how you can get started. ura.sg/ourfaveplace

Re-exploring Little India
Have you visited the Indian Heritage Centre, or the many colourful festivals and heritage exhibitions in Little India? As part of their place-making journey for the cultural district and its community, these are some of the projects that the Little India Shopkeepers and Heritage Association has helped bring to fruition under the helm of Mr Rajakumar Chandra, the winner of the Place Champion Award in 2016. Watch out for a photography exhibition documenting Little India by local photographers at The URA Centre coming to you soon.

Savouring fresh heritage gems
Behind every successfully restored heritage building is a team of dedicated building owners, developers and professionals. In October 2016, we present our annual Architectural Heritage Awards to these key players who have gone the extra mile in giving our heritage buildings a new lease of life. Visit ura.sg/AHA to find out the 2016 winners.

Revisiting Archifest 2016
How do you take the best architectural instagram shots? This was one of more than 30 activities that Archifest 2016 lined up to discuss and debate everything architecture. The home-grown public festival is back for its 10th run this year from 23 September to 9 October, which saw visitors exploring hidden architectural gems, joining design workshops and trying their hands at urban farming. For best tips on Instagram shots and more from Archifest, go to www. goingplacessingapore.sg



"I'm attracted to the banal, ordinary lives of people; there is so much colour and texture to those moments we find in our local neighbourhoods, in the heartlands of Singapore."
– Mindy Tan, photographer

Pictured: A man has salvaged a used sofa frame and placed it over the drain near his home, creating a little garden space with the addition of plants and some trees he personally planted some 20 years ago. Today, they provide him with shade in this spot.