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TWO KOREAS

ARTIFICIAL INTELLIGENCE AND WHY WE'RE NOT AFRAID OF IT



Design: A tale of the city

The smartphone is akin to a fifth limb. What will we make of the smart city? Urbanist and architect Jason Pomeroy explains.
Interview by Jason Tan



Intelligence? A scene from *Her*.

THE SMART CITY conjures up “driverless cars, Big Data acting as *Big Brother*, the Internet of Things or talking fridges,” says Jason Pomeroy, architect, academic and host of *Smart cities 2.0* a series on Channel News Asia.

But it’s not quite like that; a future largely driven and influenced by technology can be utopia or dystopia, adds Pomeroy, whereas “a truly smart city will not just utilise technology and the Internet of Things, but will foster community and promote culture as well – thus enhancing the quality of people’s lives.”

Simply put, the diversity of cities around the world makes a one-size-fits-all solution a discomfiting fit, at best. The smart city is too often associated

solely with tech, says Pomeroy, when in fact what constitutes ‘smart’ in one city, may not be in another.

“By 2050, we’ll have added 3 billion people on this planet, many of whom will live in urban areas,” he says. We add that the city is the problem or could be the solution, depending on where this growth occurs, and if the projections bear out.

Pomeroy and his team look at diverse places in *Smart cities 2.0*, including Songdo, South Korea; Bandung, Indonesia; Shenzhen, China; Ahmedabad, India; Barcelona, Spain; Higashimatsushima, Japan; Amsterdam, The Netherlands and Singapore. Kuala Lumpur? Discretion is probably the better part of valour until season two.

ESQUIRE: Let’s start with why we call a city ‘smart’. What’s a smart city and what does it do?

JASON POMEROY: A smart city is one that acknowledges its own, unique challenges or opportunities—for example, Shenzhen’s heritage of start-up companies or Higashimatsushima’s susceptibility to natural disaster. Its ‘smartness’ comes from embracing such issues and enhancing the sustainability of the city accordingly. It has embedded technologies that can enhance people’s lives while helping the city as an entire ecosystem operate more efficiently. They also empower individuals to work collectively towards common values held by the city—which often includes job

creation, crime prevention, equality, reduced congestion, reduced pollution, recreation and amenity—values that come down to the co-operation between government and people. A truly smart city will embrace its own culture, heritage and tradition, which play a vital role in creating a sense of belonging, community and place.

ESQ: Much of the mainstream view of tech seems to be framed by the offerings of Silicon Valley and its business model. Is there any other way to see tech in relation to the smart city?

JP: I remember an old cartoon called *The Jetsons*, in which the protagonists live in a futuristic utopia of robots, flying cars, holograms and inventions—I think this is what many people think of when it comes to smart cities today! But yes, smart cities are highly interlinked with technology, but technology alone does not necessarily make a city smart. The best cities tend to use technology as an enabler, to allow citizens to lead their life in a more efficient, easier way. For example, Bandung, Indonesia, connects its citizens via social media, which it uses to update them on congestions, pollution and crime. Barcelona—an ancient city not known as a modern smart city—has sensors dotted all over to measure traffic levels, the weather, and parking spaces. Yet you wouldn't notice this, and the focus remains on the beautiful architecture—typified by the iconic Sagrada Familia Basilica. Both of these cities retain their own character, and are not dominated by technology, yet use it subtly to address certain challenges that each face.

ESQ: How much faith can we place in tech for tailored solutions to issues of contemporary urban living around the world?

JP: I think we can place a huge amount of faith in any solution—technological or otherwise—that has come from the bottom up. The worst solutions are those that have been imposed from the top by elites, as these never address



Above Digital Hub at BSD City.

the real cause of the problem, and are quickly discarded. A smart city will only be acceptable as long as it comes from the bottom-up as well as top-down. The solutions to the cities' problems need to be provided by a combination of the citizens, private companies, government, and academia working collaboratively, and not imposed on them from above.

Examples of this bottom-up approach from the *Smart cities 2.0* series include Bandung and Higashimatsushima. In the case of the former, they have leveraged on social media and smart apps to enhance the lives of their citizens. In the latter, the citizens channelled their efforts to prevent the repeat of the devastation resulting from the 3/11 earthquake, and sought 100% self-sustenance through solar power. But for me, I find the bottom up and top down approaches of Amsterdam and Barcelona interesting—ideas generated by the people, enhanced by academia, funded by private corporations with subsidies and support by the government provides for successful smart cities forged from collaboration.

ESQ: Has the 'global' city come to be designed around production and consumption?

JP: In many ways, it is easy to come to this assumption. The most iconic cities on earth—New York City, London, Paris, Hong Kong—are meccas of consumerism. Rural areas, on the other hand, are seen as more durable, sustainable and authentic—at least in the popular imagination. While I understand this, it is also necessary to understand that most cities are, by definition, adaptable places to changing social, economic, environmental, spatial, cultural, and technological needs. Millions of people live side-by-side to create, shape, trade and consume. Furthermore, I would also argue that the global city has always been designed around production and consumption. One only has to wander through London's Bread Street, Market Street, Honey Lane and Milk Street (there are more!) to know that trade was historically the lifeblood of yesterday's cities and remains relevant today—even if the commodities traded are bitcoins or forex.



Top and above B House by Pomeroy Studio; Jason Pomeroy cycling in Central Park, Songdo City.

ESQ: The smart city pitch seems to be an expedient or alarmed response to global warming. How effectively can the smart city address global warming in the long run, without us first addressing issues around lifestyle and consumption?

JP: There's no doubt that our lifestyles

and ongoing demand for resources is unsustainable, and leading to both environmental destruction on a macro scale and Climate change. Smart cities are, in some ways, a response to this, but they are also a response to more local challenges that each city faces such as congestion, overcrowding, pollution or



Higashimatsushima—Eco Town.

poor access to health services. Again, every city is different, Amsterdam does indeed have a more holistic view to its development, cultivating roof gardens to both reduce local flooding, and carbon emissions from importing food. Singapore has invested heavily in public transport as a means of reducing its dependence on carbon-emitting cars, and tackling space constraints that come from being an island.

Smart cities can play a role in addressing Climate change both through technology and culture or heritage. Technology can make applications more efficient, such as by providing carbon-free energy and carbon-free transport. Culture and heritage bring us the same passive design techniques that our ancestors employed before the age of electricity. These techniques can be seen in older Malay kampung houses, whose high ceilings allowed air to circulate and cool, and their raised verandahs encouraged the cooling breeze to flow through over nearby greenery. I drew on these to create Asia's first carbon neutral prototype home—the Idea House—in Malaysia. We also see this in the colonial Black and White bungalows prevalent in Singapore, which again, we used as inspiration for the B



Songdo City.

House, Singapore's pioneering carbon negative home.

ESQ: What is the evidence on how reliable population growth projections are, especially for population growth in cities and its implications for urban design and planning, since these are based on present-day assumptions?

JP: One can interpolate data to predict within reasonable margins of accuracy as to how the population will grow. But what makes such projections harder are changes in social policy. Recently, there has been a reshaping of the one family, one child policy in China—the most populous country on the planet. Such social policies will naturally have an effect in decades to come as to the quantum of space that is allocated per capita, and therefore the density of its cities. Bandung in 1945 had 150,000 people; today it has 2.5 million. Streets and squares were designed for a lot less traffic and fewer pedestrians leading to congestion and pollution. In extreme cases, accessibility suffocation can harm business productivity—especially when it is only possible to have a meeting in the morning and afternoon given the sheer weight of traffic in peak hours.

So in order for us to be able to de-



Shenzhen.

sign sustainable and smart cities for the future, we need open source big data to model and then interpolate movement of people and vehicles in order to shape and hone our open spaces. It is also important to ensure that the likes of Facebook and LinkedIn and other social media do not deny us the real and physical opportunities to meet and greet in public. In high-density environments, it is even more important to ensure that open spaces on the ground are supplemented by open spaces in the sky. I wrote a book in 2014 on skycourts and skygardens as alternative social spaces that people can enjoy, as well as being good for the rehabilitation of the city environment and am delighted to seeing them becoming increasingly part of the fabric of the city.

ESQ: If you were to describe the salient characteristics of the city and that of a natural ecosystem, how would they compare for sustainability?

JP: A natural ecosystem is self-sustaining, today's cities are not, at least not yet. In a natural ecosystem, when a tree dies it rots into the soil, providing nutrients for other trees to grow. Rain is used by foliage, and then evaporates back into the atmosphere, to be reused. Bees suck

nectar from flowers, but then pollinate other flowers on their travels, ensuring their species thrives.

Today's cities are too often resource-hungry, inefficient and destructive. Coastlines are destroyed to provide sand for the concrete that goes into building characterless tower blocks. Smoke-belching coal-fired power stations hum through the night to power the lights of offices that are populated with workers who often cannot afford to live nearby and therefore face a few hours' commute to their workplace.

I do see this changing, though. Sustainability is no longer a luxury, but is now becoming not only affordable, but more economically desirable. The B House (mentioned earlier), a carbon negative home in Singapore, produces more green power than a typical family of five consumes in a year (yet costs the same as a similar-sized home in the same area). Furthermore, this kind of sustainability can be applied on a mass scale. Pomeroy Studio have started working on a sustainable mass housing project in the Philippines called Optimma, a housing community of 246 units that, when completed in 2018, will result in carbon-zero homes at a price point that will be accessible to the average Filipino homeowner. When we can house the masses, sustainably, then we will start to see real change.

At the city scale, we created a new low carbon technology district in Indonesia—dubbed the Silicon Valley of Indonesia—called Digital Hub@BSD. The 26-hectare green project is located 40 minutes from Jakarta International Airport and will comprise of institutional grade office for leading multi-national high-tech and research enterprises seeking local, regional and international connectivity. Digital Hub@BSD City included a 2.75 hectare 'eco-cell' park that provided a venue for performances, events and installations and served as a means of recreation and amenity, and a state-of-the-art knowledge-sharing hub coined 'The Spiral', which provided a forum for the resident companies to share their ideas and innovations. 🌱