DESIGNING

By John Franklin

THE IDEAL

Putting people at the heart of design is a long-established approach to urban development, but one that can be overlooked in the rush to cater to growing city populations. However, new technology and methods with humans at the centre can help us build resilient and prosperous communities for the future.

The cities of the future as depicted on screen can seem more fantastical than functional: dystopian megalopolises with colossal skyscrapers, omnipresent technology, air-borne transport, and a surprising lack of people. Even the relatively benign depiction of Hill Valley in Back to the Future 2, with its everyday enhancements such as hover-boards, self-tying shoes, and in-home food hydrators, revealed a community dominated by mega-corporations. Although eye-catching and convenient, much of the future depicted would not likely serve the best interests of this fictional town's residents.

Today, as societies consider how to construct urban environments in the face of challenges such as population density and resource scarcity, a vital aspect of what gives cities their soul can be overlooked – their communities. For what good is utopia, if no-one actually wants to live there?

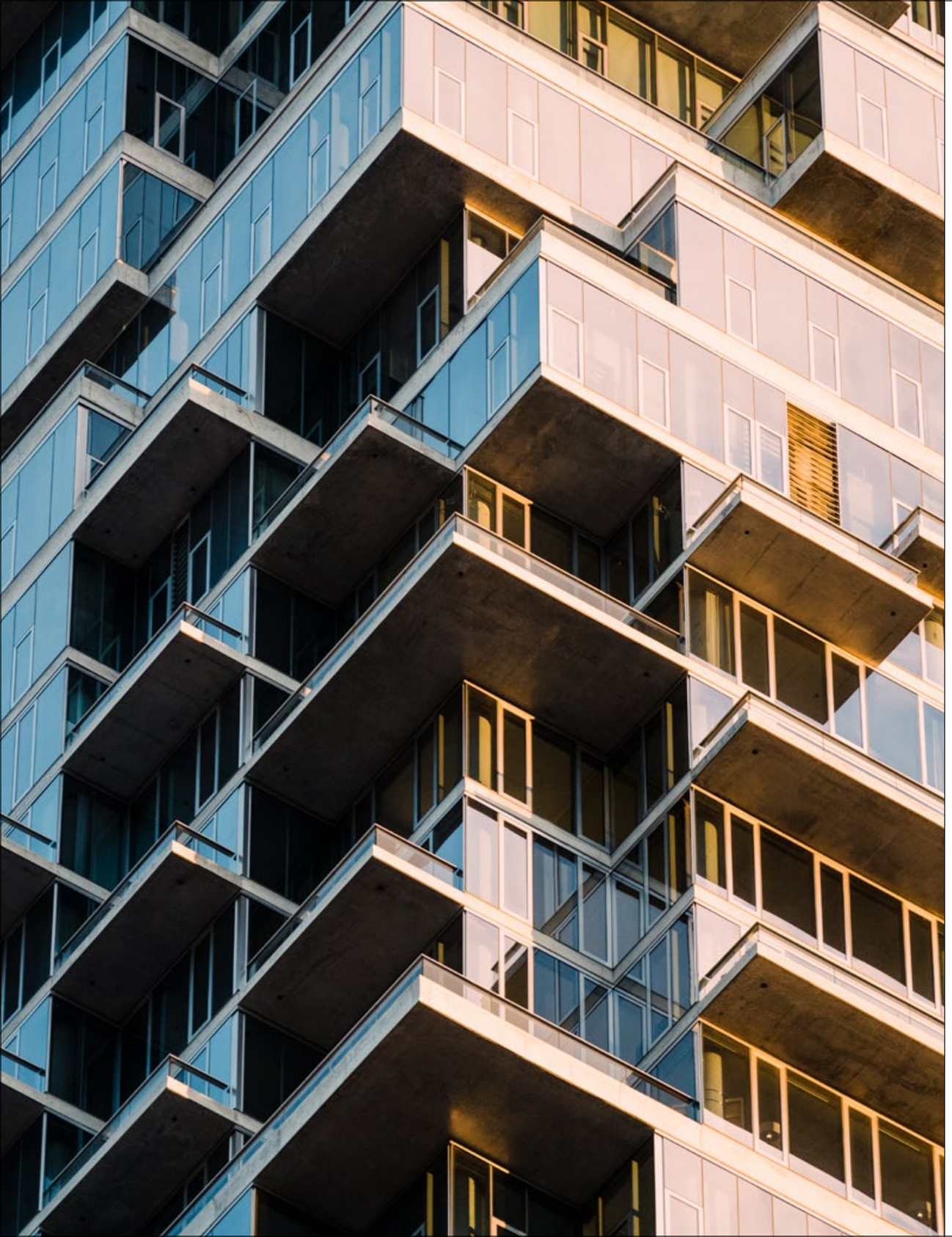
Fortunately, a growing array of architects, engineers, and officials are taking the lived experience of a city's residents into account, and this is far from a new way of thinking. During the Italian Renaissance in the 14th and 15th centuries, the notion of 'Umanesimimo' – a focus on humans, their values, capacities, and worth – resulted in the concept of the 'ideal city'. Pienza, one resulting settlement in southern Tuscany, served as an early example of conscious urban planning. It maximised interactions between, and happiness of, its inhabitants, while offering one of the first public housing systems and a central square that became the heart of urban life.

By balancing its architecture and its geography, Pienza has served as inspiration for well-functioning settlements ever since. And as we recover from an unprecedented global health crisis, and stand on the edge of climate catastrophe, the need to create liveable, sustainable, and resilient towns and cities is ever-more pressing.

According to the United Nations, two in three people are likely to be living in cities or other urban centres by 2050, so as cities continue to grow in both size and number, people must find ways to live in ever closer proximity. Accordingly, designers and planners must rethink the way buildings and urban environments are constructed to find intelligent solutions that take into consideration green space, leisure facilities, and mobility, and allow both the settlement and its community to thrive.

Some have tackled this challenge by starting from scratch, planning futuristic new cities in a range of bold locations: reclaimed Malaysian coastal land, artificial Maldivian islands, even the depths of the Arabian desert. The Line, a 170 kilometre linear city in Saudi Arabia's Tabuk province, is intended to house 9 million people but offer no roads or cars, and purportedly produce no emissions. American entrepreneur Marc Lore plans to build Telosa, a new city of 5 million based on the idea of 'equitism', on 150,000-acres somewhere in the United States. Egypt has broken ground on a new capital, the largest ever planned city, that will rise from the sands outside Cairo. Even Elon Musk has proclaimed he will build a new smart city outside Gaborone in Botswana (although we might not plan our moves to southern Africa just yet).

As Pienza shows, designing the 'ideal city' is not a new challenge, and there is still not a perfect solution. For those attempting it, Songdo in South Korea should serve as a cautionary tale. Conceived as the world's smartest city, Songdo was a 10-year, USD 40 billion project completed in 2015. Designed with sensors to control all municipal el-



ements, from traffic flow to energy usage, and households with Internet of Things controls, over fourty per cent of the land was dedicated to green space. But, as of 2020, it was home to just 170,000 people. According to critics, designers did not approach the city from a human-first perspective, instead putting technology at its centre, and the result is a 'cold' and 'deserted' settlement that has certainly not alleviated overcrowding in nearby Seoul.

Instead of a new beginning, perhaps a better approach is to improve and revitalise our existing cities by equipping them to face imminent challenges and embrace future innovations. Technology will undoubtedly play an ever-dominant role in their development, but it can be applied in a less tangential, more community-focused manner than in Songdo.

The gold standard of this already exists. Singapore recently completed the world's first digital twin of an entire city using AI. This allows the country to virtually test any kind of planning decision before implementing it in reality. Scalable and widely available, this technology can assist with infrastructure and property development the world over. In Singapore's case, it also helps the densely populated island nation to model the effects of rising sea levels as a result of climate change.

Another benefit of the digital twin comes as computing power is further incorporated into urban architecture. The floods of additional data from smart infrastructure peppered with sensors and systems can be efficiently and securely captured, processed, and analysed, before being put to practical use; turning off lights or heating in empty buildings to reduce energy consumption; cutting congestion and emissions by manipulating traffic flow at peak times; preparing for extreme weather by forecasting the resultant energy needs or relief requirements.

While cities must be advanced, they must also be liveable, while providing access to economic, social, and cultural opportunities. According to goal 11 of the UN Sustainable Development Goals, they should be inclusive, safe, resilient, and sustainable too. A lot for every well-intentioned urban planner to take into account.

Progress is already positively impacting the residents of many global cities. Take Barcelona, the sprawling Catalan capital. Since 2016, the city has been rolling out 'superilles', nine-block grids reclaiming neighbourhood streets from cars and replacing them with parks, green spaces, and recreation areas for the residents. Not only has this increased community interaction and bicycle use, but added vegetation has helped combat the 'heat island' effect during hot summers, and reduced both air and noise pollution.

Sven Eggimann, an urban infrastructure researcher at the Swiss research institute Empa, says, "I think the strength of superblocks is that it provides a vision to transform cities that is not centered around cars". And he's not the only one who thinks that. As well as being implemented in additional Barcelona neighbourhoods, superblocks are being considered in cities as far apart as Mexico City, Tokyo, and Vienna.

Using an algorithm to determine the suitability of this approach, Eggimann found that "density is important, as the superblock model focuses on districts where many people live to allow active street life". This focus can lead to better results, changing one street or neighbourhood for the better, then scaling the project for greater impact.

As people reclaim their neighbourhoods, convenience is increasingly important and considered in design. Quickly gaining interest around the world, the '15-minute city' concept puts the home at the centre of our urban environments, with a supermarket, doctor, hairdresser, and park all within walking or cycling distance. Coined in 2016 by Carlos Moreno, a professor at the Sorbonne in Paris, the motivation was to disrupt car-focused cities and emphasise human-centric development, ultimately leading to lower emissions, increased social cohesion, and better public health.

As city populations continue to grow, the concept can be applied as most appropriate for the location. Paris has been working since 2014 to pedestrianise, promote cycling, and restrict cars, and creating a 'city of proximity' was a cornerstone of Mayor Anne Hidalgo's recent re-election campaign. Copenhagen, one of the world's most cycle-friendly cities, adopted a '5 minutes to everything' model in 2016, and Melbourne chose a '20-minute return trip' threshold to local amenities. Across all cities, the central tenet holds true: increased accessibility of urban neighbourhoods for residents.

Increasing the recreational and green spaces available to residents in these cities has resulted in greater levels of

community interaction. More places for children to play, greater opportunity for adults to exercise, and even increased intergenerational socialising. This last point can be an overlooked element of fostering communities, which should include all generations, young to old. As Age International found in a recent study of community work in Asia, “more than a quarter of Indians and Taiwanese and a fifth of Filipino and Chinese men and women in their 60s and 70s regularly helped in the wider community, providing assistance to individuals of all ages.” Given this demographic’s clear societal role, urban spaces should be designed to include, rather than exclude, them.

Conceived by architects WOHA in Singapore, Kampung Admiralty is an integrated public housing concept that combines living space for seniors with civic facilities to support intergenerational bonding and encourage community involvement. The award-winning model has now inspired other projects in the city as it seeks to continually improve residents’ quality of life at all ages. The value of multi-generational living is appreciated by residents and developers alike, and studies have shown that it can improve both health and longevity.

To aid senior citizen integration, Swiss development and real estate consultants Drees & Sommer help towns and cities develop infrastructure that takes the needs of older residents into account. Sometimes the changes can be small – pedestrian crossings that stay green for longer, lowered curbs for the less able – but they have a large impact, making communities safer and more accessible. Through their ‘UrbanLife+’ research project, the objective, say Drees & Sommer, is to “facilitate the greatest possible degree of participation in public life” for those of greater ages.

Much like Pienza, which put the town square at its centre to prompt interactions between residents, we can combine initiatives that embrace technology, sustainability, and liveability to put people at the heart of our urban environments and foster cohesive communities. As these approaches take root in the coming years and decades, people will increasingly look to amenities and comforts that make life easier and more satisfying. While addressing the needs of now, we also have the potential to create prosperous, safe, and sustainable cities of tomorrow that are prepared to face the challenges ahead, and whose residents one day might consider them ideal.

FUTURE CITIES

The power and prosperity of cities defines the modern world economy. They are the engines of global growth, producing four fifth’s of the world’s economic output, and are home to just over half of its population. Cities worldwide are growing, and by 2030 we will have an estimated 43 megacities - the bigger the city the more complex its management.

There are fundamental economic, social, and environmental challenges facing cities, especially in emerging economies, but there is one fundamental factor for a city’s economic prosperity - it will flourish depending on the state of its infrastructure. Be it classical or digital – no infrastructure, no growth.

Fortunately, there is one big helper to transform today’s infrastructure and future proof it for tomorrow: technology. This is a vital element in all four areas that we believe are crucial to any city’s future: in mobility and traffic, in water and waste systems, in building technology and efficiency, and in overall smart city solutions.

Technology is a tool to make our cities smarter and more sustainable. It has the potential to transform our cities, and to make them fit for the future. Traditional and digital infrastructure will converge to increase efficiency in all these four areas. It will improve traffic flows, connect mobility systems, enhance efficiency, and improve waste and water management. Technology will also increase building efficiency - a crucial factor for sustainability, as buildings account for 30 per cent of global energy-related greenhouse gas emissions. Ultimately, technology will help to make our cities more liveable.

Cities are constantly developing, and with them the investment opportunities that allow them to become smarter and more sustainable, which is why Future Cities is one of the Next Generation investment themes that we believe will shape the future.

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