

CITIES, HEALTH AND WELL-BEING HONG KONG URBAN AGE CONFERENCE 16-17 NOVEMBER 2011

ORGANISED BY LSE CITIES AT THE LONDON SCHOOL OF ECONOMICS AND THE ALFRED HERRHAUSEN SOCIETY, IN PARTNERSHIP WITH THE UNIVERSITY **OF HONG KONG**

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Front cover caption: Hong Kong's skyline is marked by new generations of over 35-storey residential towers in the New Towns and central areas.





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One of the densest and healthiest cities in the world, Hong Kong concentrates the problems and opportunities of living in an urban age.

WELL-BEING IN THE URBAN AGE

> he Hong Kong Urban Age conference is the tenth in a series of investigations into the future of cities. Since 2005 we have explored regions of the world that are rapidly urbanising and where cities are

experiencing significant, and sometimes traumatic, growth. With more than half of the world's population already living in cities, this year we ask ourselves the question: how do cities affect the health and well-being of more than three billion urban dwellers? From Mexico City, São Paulo and New York in the Americas, to Johannesburg in Africa, Shanghai and Mumbai in Asia, London and Berlin in Europe - and Istanbul straddling the two continents – the Urban Age has studied metropolitan areas with a collective population of more than 120 million people. Now we turn our attention to the unique conditions of the city-state of Hong Kong, adding a further seven million residents at the gateway of the People's Republic of China, a country that, along with India, is spearheading the epochal shift from rural to urban habitation. The cities studied so far present an uneven social and spatial landscape, illustrated by our research published in

Living in the Endless City (Phaidon, 2011). Hong Kong adds a new dimension to these global statistics. Peak population densities achieved in New York and Shanghai are dwarfed by Hong Kong, leaving London and Mexico City well behind. Its compact urban form and highly efficient public transport system makes Hong Kong one of the greenest cities of the Urban Age sample. Only 6 per cent of the population use private cars and nearly 90 per cent take boats, trams and trains or walk, surpassing New York and London, where 58 per cent and 63 per cent respectively use public transport. While income inequality is as high as in Mexico City or New York, murder rates are the lowest of all Urban Age cities.

By looking at Hong Kong through the lens of urban health and well-being, we discovered its citizens can also expect to live longer than most in the world - 82.5 years compared to 51 in Johannesburg or 72 in Istanbul. We learnt that, despite high health outcomes, pollution can reach dangerous levels and that the pressure on space and high real estate prices, especially in central areas, affect all aspects of urban life: from how many children people choose to have, to how often they can play their

favourite sports and how they socialise with friends and family. Like other world cities, Hong Kong displays distinctive patterns of social and spatial inequalities that are reflected in the quality of life of its citizens.

For these reasons, we chose to use Hong Kong as a platform for research and debate on the complex links between cities, health and well-being. Not because it is more problematic than others, but because it concentrates the conflicts and opportunities of living in a dense urban environment. The initial results of this enquiry are set out in the essay that follows, informed by reflections by international scholars and practitioners whose insights can be accessed online (see facing page).

The rest of this conference newspaper is then divided into two parts. The first offers a global comparison between cities, while the second focuses on Hong Kong. Global patterns of urbanisation and health are followed by comparative data on growth, density, age distribution, workforce and transport in nine Urban Age cities, including Hong Kong. The spatial, social and health DNA of Hong Kong is then explored in greater depth, through a series of essays, data analysis and new qualitative research on high-density neighbourhoods carried out by LSE Cities and the University of Hong Kong.

Since the establishment of LSE Cities in 2010 – an international centre based at the London School of Economics and Political Science supported by Deutsche Bank – we have worked on specific annual themes that form an interdisciplinary enquiry into cities, based on linking the physical and social worlds that we construct around ourselves.

Last year we worked closely with the USbased Brookings Institution to understand how cities can respond to economic challenges and jointly developed a Global MetroMonitor of economic performance of more than 150 metropolitan regions across the world (globalmetrosummit.net/gmm/). This year we have extended this approach to understanding urban health, developing a new index of health for 129 metropolitan regions, as part of a research project that will be expanded with new partners and cities. In 2012, under the banner of the 'electric city', we will focus on how metropolitan centres can be designed, managed and governed to be more smart, exploring the economic potential of green cities and their impact on society and the environment, holding the Urban Age conference in London during the Olympic year.

By bringing together urban experts in planning, health, design and governance from four different continents, it is our hope that the Hong Kong Urban Age conference will contribute to our understanding of the links between cities, health and well-being, kick-starting new lines of research, enquiry and practice that will help make cities more liveable in a world where at least 70 per cent of us will be urban by 2050.

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CAN CITIES BE GOOD FOR YOU?

Ricky Burdett and Myfanwy Taylor provide an overview of the links between cities, health and well-being, outlining a road map for the development of a future research paradigm that puts space and place at the heart of understanding and making healthy cities.

ities are critical sites both for enquiry and action in relation o health and well-being. With almost 70 per cent of the world's population estimated to be living in urban areas by 2050,¹ global health will be determined increasingly in cities. Yet while urbanisation has thus far generally been accompanied by many basic health improvements, today's cities currently provide some of the worst as well as some of the best environments for health.

It is with these trends in mind that LSE Cities has embarked on a new research initiative on 'Cities, Health and Well-being', using the 2011 Urban Age conference in Hong Kong as a platform to promote further research and exchange over the coming years. This article has three objectives. Firstly, to provide an overview of the key issues relating the physical environment to health and wellbeing in cities by reviewing the literature and communicating some of the most developed understandings of healthy cities. Secondly, to provide a road map of some of the major contributions from experts in cities, health and well-being from around the world to this year's Urban Age initiative. And thirdly, to begin to set out the parameters for a framework of enquiry for future research into how cities can be designed and planned for greater urban health and well-being.

ARE CITIES HEALTHY?

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The potential of cities to outperform the national average in wealth creation and productivity is mirrored in health. Overall, there does seem to be a health benefit to living in cities: analysis of WHO data from 90 countries shows that infant mortality rates are typically lower amongst urban populations than rural populations within individual nations.² Analysis of the 41 lowand middle-income countries for which urban Demographic and Health Survey data is available shows that the proportion of children under five that are stunted – an indication of chronic malnutrition – is 1.5 times higher in rural than urban areas.³ However, recent research has shown that while urbanisation is associated with income, there does seem to be an additional advantage associated with living in cities.⁴

At one level, the reasons are selfevident. Part of the apparent 'urban health advantage' reflects the wealth that cities concentrate and produce: today, 600 cities generate 60 per cent of global GDP despite accounting for just one fifth of the world's population.⁵ Cities also tend to concentrate doctors, hospitals and other health infrastructures, and provide the economies of scale necessary to support health-supporting infrastructures such

as water, sanitation and drainage, as well as education and health services.⁶ The proportion of births attended by skilled health personnel is 2.2 times higher in urban than rural areas on average⁷ and the proportion of one year olds vaccinated for diphtheria, tetanus, toxoid and pertussis (DTP3) is 1.3 times higher in urban than rural areas.8 Cities' health services are not just a resource for urban citizens: they also serve rural populations in their immediate vicinity and beyond.

Compared to our knowledge of the health of rural and urban populations within nations, however, our understanding of the relative health of individual cities is much less well developed. A study coordinated by Victor Rodwin at New York University compares the health performance of London, New York, Paris, Tokyo and Hong Kong, summarised in his article on pp. 32-3, stands out as a detailed comparison of five world cities but there has been no international comparison of health in cities that extends to all world regions. And while health is included within various international quality of life and 'livability' indices, these tend to be orientated towards the needs of businesses and investors, rather than the health and well-being of residents themselves.9

The lack of internationally comparable city-level health data stems from the tendency of international agencies to collect demographic and health data at a national level, through nationally representative samples that tend not to be large enough to allow for spatial disaggregation. Internationally comparable city-level data would not only improve our understanding of the health benefits and risks experienced by urban citizens, but also provide a powerful resource for urban policy-makers and politicians. To this end, LSE Cities has developed an internationally comparable health index for 129 extended metropolitan regions, using a range of available data, including infant mortality and life expectancy. The preliminary findings are set out in pp. 10–13, and the full methodology and points for discussion are explained at urban-age.net.¹⁰

CAN CITIES DAMAGE YOUR HEALTH?

Most rural versus urban and city-to-city health comparisons tell us nothing about the distribution of health within cities. In fact, the resources and associated health benefits that cities concentrate are not shared evenly amongst their residents.¹¹ As Ernestina Coast explains in her article, the urban poor are less likely to be included in censuses and surveys, and where they are, data is often aggregated spatially, masking the significant health differentials that exist within cities. The 828 million people estimated to be living

in informal settlements in the developing world in 2010¹² face multiple health risks from birth. Poor housing, lack of infrastructure and access to basic services leave residents of informal settlements (and particularly children) vulnerable to communicable diseases, such as respiratory and gastrointestinal illnesses, malaria and accidents and injuries.13 Analysis of WHO data from 154 countries shows that the percentage of the population living in urban slum conditions is inversely associated with infant mortality, independent of the urbanisation of the country or its income.14 Areas of concentrated disadvantage seem to have worse health outcomes irrespective of the level of development.¹⁵

Analysis from the African Population and Health Research Centre, based on 1999 data, shows that children living in Nairobi, Kenya, are less likely to die before the age of five than in Kenya as a whole (under-five mortality rate of 61 per 1,000 births, compared to 112 per 1,000 births), but the children of Nairobi's informal settlements are more likely to do so (151 per 1,000 births).16 At the same time, noncommunicable diseases (NCDs), such as stroke, cancer and diabetes are increasing amongst low-income urban residents, creating a cruel 'double-burden' of disease.17 NCDs can, therefore, no longer accurately be considered to be diseases of the rich, whether in towns or the countryside, and it is estimated that by 2020, they will be responsible for 69 per cent of all deaths in low- and middle-income countries.¹⁸ In the case of Accra, Ghana, and São Paulo, Brazil, detailed analysis of health outcomes across the two cities showed that more people died of both circulatory diseases and infectious/parasitic diseases in the most deprived zones than the least deprived zones (see Table 1).¹⁹ Road traffic accidents and violence are other growing global health threats, responsible for 1.3 million and 1.6 million deaths respectively each year,²⁰ compounding the urban poor's double burden of infectious and parasitic disease and NCDs into a 'triple-burden'.²¹ Finally, mental health disorders make up an increasing proportion of global disease burden: unipolar depression is the third leading cause of disease worldwide, and is high even in low-income countries (eighth place, compared to first place for middleand high-income countries),²² and are particularly prevalent in cities, as Mazda Adli explains in his article.

Urban health inequalities also exist in rich countries, although they are usually more extreme and felt by a greater proportion of the urban population in poorer countries. In London, the inequalities that existed between the (poor) east and the (rich) west in the late nineteenth century, as documented by Charles Booth in his surveys into life and labour in London, are clearly visible today. For example, at 82.4 years, while female life expectancy in London is slightly higher than the average for England of 81.8 years,

it is significantly lower in Newham, inner east London, at 79.8 years.²³ London's health inequalities are directly related to its socioeconomic inequalities, which are concentrated spatially in specific boroughs and neighbourhoods. As Stephen O'Brien writes in his essay, 'there needs to be a revolutionary attack on health inequalities in east London and it needs to begin now'.

In Hong Kong, despite the significant reductions in child mortality achieved over the past 30 years, higher rates are spatially concentrated in particular parts of the New Territories. Analysis from LSE Cities explored in detail on pp. 36–9, shows that in these areas, for example, child mortality is between 17 and 35 deaths per 1,000 live births, compared to an average of four for Hong Kong as a whole. The spatial variation in health performance closely mirrors the distribution of deprivation in Hong Kong: Hong Kong's 20 per cent most deprived areas have child mortality rates 3 times the Hong Kong average. Such patterns are also found in other health indicators in Hong Kong. As Paul Yip explains on p. 28, suicide rates in Hong Kong's newly developed satellite towns in the north and northwestern districts are 16 to 25 per cent higher than in Hong Kong on average. Yet such areas provide far from the worse living conditions in Hong Kong. The Society for Community Organization bring life to the statistic that some 80,000 people in Hong Kong live in woefully inadequate conditions, such as 'cage homes', cubicles and rooftop constructions, through a series of portraits of residents. If, as Yip concludes, 'a city is only as strong as its weakest link', Hong Kong's health inequalities deserve further attention.

The link between health and social inequality is a key focus of the 'social determinants' approach to health, spearheaded by Michael Marmot and the WHO's Commission on the Social Determinants of Health²⁴ In this perspective, health is not only determined by individual factors, such as our age, sex and genetic characteristics, but also by our social status and the conditions in which we live. The unequal distribution of social goods and urban amenities within cities is reflected in health inequalities that are often clearly visible, both on maps and within cities themselves. Even within the same city, urban areas can provide some of the best and worse environments for health. A comprehensive review of ill health and poverty suggests that the 'urban advantage' often assumed by governments and international agencies falls away when socioeconomic factors are taken into account.25 Analysis of data from 47 low- and middle-income countries found an urban advantage in child health in only three countries.²⁶ In Sub-Saharan Africa, this advantage was maintained only in one country (Malawi) of the 15 analysed, once socioeconomic status was taken into account.²⁷ The health benefits of cities do not come automatically - they depend on the ability and willingness of

	Circulatory of	diseases	Infectious and parasitic diseases			
	São Paulo	Accra	São Paulo	Accra		
Most deprived zones	23.0	16.4	2.7	9.2		
Least deprived zones	19.4	7.0	1.4	4.7		

Table 1. Age-adjusted mortality rates (deaths per 1,000) in the most deprived and least deprived zones of São Paulo and Accra. Source: Stephens et al. (1997



Public space has the potential to provide relief from the tensions associated with high-density urban living

governments to provide essential services and infrastructure.

CAN WE BE HEALTHY AND HAPPY IN CITIES?

Well-being is a much broader term than health. It encompasses a wide range of issues and can be defined and measured in a variety of different ways, depending on the particular theory of well-being understood.28 Well-being can incorporate both objective needs, such as decent housing and income (often collectively termed, 'quality of life' or 'standard of living'), and subjective feelings of happiness and life satisfaction. One definition captures the meaning of wellbeing particularly well: 'it connotes being well psychologically, physically, and socioeconomically, and, we should add, culturally: it is all these things working together'.²⁹ The WHO definition of health, which has now stood for over 60 years, actually encompasses well-being: 'a state of complete, physical, mental and social well-being and not merely the absence of disease or infirmity'.³⁰ This definition implies that to be healthy is not only to be free of disease but also the ability to make a living, to live in decent conditions, to have access to basic services, to engage in social relationships and to feel able to affect one's own circumstances.

Well-being is once again gaining political ground in many parts of the world, as an alternative and broader measure of welfare than GDP alone. In the United Kingdom, the first national surveys of

happiness are currently underway; in France, President Nicholas Sarkozy is integrating the measurement of wellbeing into the analysis of the country's performance. These efforts confirm what the post-World War II architects of systems of national accounts knew 75 years ago: that welfare could not be measured by GDP alone.³¹ US presidential candidate Robert Kennedy said in 1968:

The gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials ... it measures everything, in short, except that which makes life worthwhile.³²

Cities are now recognised as the economic powerhouses of their nations, and of the world. They also have the potential to be great sources of human well-being. The problem is, we don't know which cities are performing well, and which are not, and therefore our ability to explore the determinants of well-being in cities, and hence to inform urban policy, is limited. There remains 'an implicit assumption in the dominant aspatial thinking about wellbeing, namely that once we control for personal characteristics, places all yield the same level of subjective wellbeing to their residents'.33 As Paul Dolan and

Robert Metcalfe explain in their essay, we do not yet have the evidence on what makes us happy, including in relation to neighbourhoods and cities. In Hong Kong, Lok Sang Ho has developed a 'happiness index'. He thinks through the implications account of this new indicator of social progress for public policy in his article in this publication, suggesting that a more relaxed stance on land supply might help to create a happier Hong Kong (see p. 30). On pp. 10–13, LSE Cities expands the comparison of health in 129 extended metropolitan regions to encompass education and wealth, in a first attempt to develop an international comparison of urban well-being.

DO PLANNING AND DESIGN MATTER?

The importance of the physical environment to health in cities has been known for more than 100 years. Indeed, public health and urban planning share a common history in the escalating health problems that arose in many European and US cities in the nineteenth century as they rapidly industrialised and grew. At that time, disease was understood to be caused by 'miasma' and, following John Snow's work on a cholera outbreak in Soho, London, in 1854, by 'contagious entities', a pre-cursor to modern germ theory. The miasma theory held that diseases such as cholera and typhoid were caused by a foul-smelling bad vapour or mist (miasma). Infections were not passed between people, but were rather caused

by exposure to unhealthy environmental conditions that gave off bad air. In England, this theory informed Edwin Chadwick's sanitation reforms, which aimed to separate households from the disease-causing 'bad air' understood to be given off by sewage through the construction of drainage systems.³⁴ It also led to more comprehensive city rebuilding, motivated by a desire to separate both the activities and populations thought to cause disease and thus reduce the risk of contact with bad air and hence infection. Haussmann's plan for Paris is a prime example.

Health also provided a strong motivation for some of the most influential architecture and planning movements of the twentieth century. Ebenezer Howard's vision of a 'garden city', for example, aimed to marry the best of town and country in a connected cluster of 'slumless and smokeless cities'. Le Corbusier was motivated by many of the same issues: how to create better living conditions in cities. His vision for a healthy city was, of course, very different, in which cities were razed and built anew, with high-rise towers providing decent housing, amenities and services for the working classes, between which people moved freely in their cars along wide and extensive motorways, and where they could enjoy parks and gardens.

It is fair to say, however, that today health is no longer a central control of urban planning policy or practice, and vice versa. The development of germ theory had a profound impact on public health, as it

focused increasingly on universal health care, public immunisation plans and the targeting of individual behaviours such as diet, smoking and physical activity, rather than living conditions. Bucking this trend, the environmental health movement and the WHO's Healthy Cities project have made significant efforts in recent decades to reconnect public health with its concern for the urban environment. While the environmental health movement grew strongly out of the health challenges facing low- and middle-income countries, the Healthy Cities project has its roots in the contexts and concerns of high-income countries in North America and Western Europe. Despite its appeal and visibility, as well as the moderate progress achieved by cities towards fulfilling the Healthy Cities project requirements, it has been much more successful in Europe than in developing world regions.35

Urban health and planning researchers have focused their attention both on the challenges facing cities in North America and Western Europe, such as rising obesity rates, increasing use of private vehicles, road traffic injuries and fear of crime, and on the continuing inadequacy of basic infrastructure such as sanitation, water and drainage in parts of many cities in low- and middle-income countries. There is now fairly strong evidence to support the existence of relationships between insufficient/inadequate basic infrastructure and infectious disease; housing quality and injury; respiratory disease and other mental and physical health risks; green space and mental health; and urban morphology and physical activity. This evidence has been systematically reviewed by several international networks, including the Rockefeller Foundation supported Global Research Network on Urban Health Equity and the WHO's Knowledge Network on Urban Settings, as well as by the Marmot review working group on the

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overview of the field.³⁶

built environment and health equity and

a range of other authors. Together, these

reviews provide a substantial and thorough

As health patterns and urban forms shift and change, the need for research and policy on urban health to move beyond its roots in European and North American concerns becomes ever clearer, as Libby Burton acknowledges in her review of the evidence linking aspects of the built environment to children's well-being. The disparity between the health burdens experienced by the urban poor in low- and middle-income countries and the focus of much urban health research on cities in rich nations is particularly clear. But, in fact, as high-income Asian, Eastern European and other countries are much more rarely the subject of urban health research than cities in Western Europe, North America and Australasia, it is also important to extend analysis to cities such as Singapore, Hong Kong, Tokyo and Osaka, which perform strongly in relation to life expectancy and infant mortality internationally (see pp. 10–11), and may provide useful insights for other cities. Overall, a nuanced approach is needed, sensitive to the wide range of urban morphologies and contexts of different cities throughout the world. The following

examples provide a sense of some of the issues to contend with.

Water and sanitation

According to a 1990 study of the health benefits associated with improved water supply and sanitation, such interventions have achieved between a 20 and 82 per cent reduction rate in child mortality, with the best six studies suggesting a median reduction rate of 55 per cent.37 Contamination of water can also occur in the home, rather than in the water source itself: household water containers have been found to have higher levels of faecal contaminants than the water sources themselves.³⁸ Sanitation is an equally complex matter: David Satterthwaite argues that the levels of improvement in sanitation facilities targeted by the Millennium Development Goals are insufficient to secure the relevant health benefits: simple pit latrines with a slab, for example.³⁹ Sanitation interventions must also be culturally, socially and economically appropriate if they are to be effective: relying on unrealistic levels of personal investment or hygiene practices that are impossible to carry out is not likely to lead to a sustained improvement.⁴⁰ Supplying adequate water and sanitation should not, therefore, be viewed as a 'technical fix' that is well understood and easily implementable.41

In Mumbai, the Triratna Prerana Mandal initiative (TPM) built on its ten years' experience in cleaning and maintaining shared neighbourhood toilets by constructing 16 new local public toilet blocks between 2001 and 2003.42 TPM's activities did not stop, however, at the construction of the blocks; not only did they continue to maintain these blocks, keeping them usable and hygienic, they also used the space above and around them to run activities and services, including computer classes, a childcare centre, a recycling initiative and to support women's groups in providing meals for 2,000 undernourished children each day. These activities played a crucial role in keeping the toilet blocks safe for women and children to use, as well as creating new opportunities for the surrounding communities. TPM provides an example of how public health interventions can be effectively supported and enhanced by broader initiatives, improving well-being as well as health

In the case of case of Maputo, Mozambique, explored in detail by Jørgen Eskemose Andersen and Paul Jenkins, it was the city government that took the lead through proactive action to manage urban growth despite limited resources. Eskemoso Andersen and Jenkins describe how, rather than continue with a costly urban upgrading project initiated by the national government and the UN in the 1970s, the newly formed Greater Maputo city council launched a strategic programme in the early 1980s to 'get ahead' of burgeoning residential land demand by the provision of sites with minimal services. The plots were marked out quickly and simply in a grid formation and 'barefoot planners' provided construction advice and land control, and assisted with a subsidised basic sanitation programme. Some 30 years on, the intended spatial order has been maintained, permitting subsequent

provision of infrastructure and social facilities by the municipal government and private companies, at a much lower cost due to the structured layouts. As Eskemose Andersen and Jenkins argue, the case of Maputo provides important insights into what can be achieved with limited resources if a city government is willing to plan with, rather than for, its people.

Housing

There is strong evidence supporting a link between housing and a host of physical and mental health problems. Housing is important to health not only for the quality of the shelter it provides from heat, cold, noise, rain, dust and so on, but also in relation to the water and sanitation infrastructure it provides, whether it offers a safe environment for storing food, cooking and working, and whether it presents risks to health due to overcrowding, amongst other matters.⁴³ Inadequate housing is associated with increased bronchitis, pneumonia, stroke, heart disease and accidents, for example, while overcrowding is associated with infections, stress and intra-family violence.44

This evidence has and continues to provide strong motivation for slum upgrading projects and housing renewal programmes throughout the world, whether in Hong Kong, London or Mumbai. Yet many such programmes actually fail to improve the health of residents. Here, McGonigle and Kirby's legendary study of a slum demolition and rehousing project in Stockton-on-Tees in England in 1929, which actually led to an increase in death rates amongst re-housed groups, provides insights that remain relevant today.⁴⁵ A replacement housing project for pavement dwellers next to the Shivaji Nagar informal settlement in Govandi, Mumbai, provides a more recent but equally compelling example. Prior to a street-widening scheme, which triggered their eviction and rehousing, these migrants from a nearby fishing village lived and worked on Mumbai's pavements, weaving baskets from long bamboo stalks and selling their wares to the passing trade. Rehoused in small apartments with no space inside for basket weaving, no passing trade and facing a long commute to the city centre, the former pavement dwellers lost their source of livelihood. Without money to pay for electricity, the buildings' lifts were out of service and became a health hazard as they filled up with rubbish and attracted rats. For these migrants, the bleak conditions of the pavement had been replaced by what rapidly became a 'vertical slum', and was made worse by their loss of income, suggesting that improvements in basic living conditions alone will not necessarily result in improvements to health.

Housing replacement or renewal projects that take the broader economic and social role of housing into account have the potential to have a more positive overall impact on residents' health and well-being. In his article, David Satterthwaite provides a series of examples of housing improvement and slum upgrading programmes that have been more sensitive to these issues: Thailand's Baan Mankong (secure housing) programme funds community groups to plan and improve their own conditions, while a project in Pune, India, managed

by a federation of women's savings groups, engages each household in developing and agreeing planned upgrades. In Karachi, Pakistan, the architect and researcher Arif Hasan proposes an alternative approach to upgrading settlements - high-density plot settlements rather than apartment complexes - based on careful research with residents of four low- and middle-income areas. Hasan's alternative model better reflects the ways in which residents use their homes: expanding them incrementally to house married children and carrying out income-generating activities. He also recommends that technical advice be made available to residents to ensure that any upgrading or incremental building they do is safe and does not lead to unhealthy densities. Hasan has been asked to put his plans into practice for a housing project in Lahore.

Urban morphology

The most common NCDs (heart disease, cancer, type 2 diabetes and respiratory disease) now account for 60 per cent of global deaths each year, driven by the profound lifestyle changes that have accompanied economic and social change.⁴⁶ In light of the importance of physical activity in reducing the risk of these diseases, substantial efforts have been made to identify the potential of the built environment to encourage or inhibit physical activity. Much of the evidence hinges on whether urban sprawl - in and of itself – leads to greater private car use.47 However, the issue is more subtle than that, leading to the idea of an area needing to have a variety of characteristics in order to be a 'walkable neighbourhood': high density, mix of land uses, fine-grained street networks and human-scaled streets.⁴⁸ While good evidence exists to support the idea that residents of 'walkable neighbourhoods' walk more than residents of less 'walkable neighbourhoods' (at least twice as many, according to a review of 11 North American studies,⁴⁹ for example), the lack of longitudinal studies mean that it is not clear to what extent this reflects the choices of residents to live in a neighbourhood that meets their walking preferences.

Obesity and NCDs are, however, no longer just a problem of the United States, Europe and Australasia. Indeed, they are growing fastest in low- and middle-income countries, and are predicted to continue doing so.⁵⁰ The health challenges facing Singapore today, for example, are very different to those of 50 years ago, as K. S. Chia, C. K. Heng and K. C. Ho explain in their article. Diabetes and obesity are on the rise, raising questions about how physical activity can be better incorporated within working life and recreation within a hyperdense environment.

Taking another example, in China, 14.7 per cent of the population is now overweight and 2.6 per cent is obese (2002 figures).⁵¹ While these statistics remain low in relation to the US and other Western countries, they have been rising rapidly, particularly amongst young people. Obesity increased four times between 1985 and 2000, while obesity and overweight together increased 28 times over the same period.⁵² Changes in diet, increasing wealth, sedentary lifestyles, reduced physical activity and passive commuting have all played a part in driving these



The streets of Hong Kong openly display the social inequalities that are mirrored by the health and well-being of its residents.

increases. Here, the built environment of many Chinese cities also poses significant challenges: Yangfeng Wu, from the Chinese Academy of Medical Sciences, explains, 'the lack of consideration towards constructing environments in inner cities that promote physical activity has meant that it has become increasingly difficult to find safe places in residential areas to exercise or even walk'.53 Yet in Shanghai, for example, 25.2 per cent of people still travel to work by bike: the highest by far of the ten Urban Age cities, Berlin being the only other city where any significant proportion of people cycle to work (7.6 per cent).54

Is it possible that the existing Westernorientated research on urban sprawl and physical activity might offer any insights in such different urban environments? In the case of Cape Town, Warren Smit and Vanessa Watson draw on the initial results of their Healthy Cities CityLab to conclude that the Western modernist assumptions underpinning existing research do not relate to the conditions of African urbanism. The neat separations and definitions of Western city streets and units on which assessments of 'walkability' are based are not present in Cape Town, they say, and the relationships between the movement of residents and their neighbourhood environment are much more complex. Thus, the increasing prevalence of NCDs in cities beyond North America, Australia and Europe calls for new approaches to research and associated policy and practice on the potential for

urban design and planning to increase physical activity, which accommodate the broader health and well-being needs of the urban poor in low- and middleincome countries.

Green space

Urban health research and policy has thus far been very much more focused on physical health than mental health, despite the fact that major depression is expected to generate the second highest loss of socalled disability-adjusted life years (DALYs; the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability⁵⁵) by 2030.56 As Mazda Adli explains in his article on stress and the city, people living in cities are more likely to suffer from psychiatric diseases such as major depression or schizophrenia due in part, it is thought, to higher stress exposure and vulnerability. Adli, a psychiatrist, explains the significant range of impacts stress has on the body, from restructuring body fat, suppressing the immune system, premature ageing, to increased risk of mental disorder.

Strong evidence exists to suggest that experiencing and viewing nature reduces the stress of daily urban life, and parks, gardens, trees and greenery are all significant in this.⁵⁷ In Hong Kong, urban parks have a particular importance to elderly people, who are their most frequent users.⁵⁸ The early morning sight of elderly people practicing tai chi or walking for exercise in Hong Kong's parks and gardens

is ubiquitous. Playing with children, enjoying the space and social activities are other significant uses: the parks are social spaces as well as spaces for exercising.⁵⁹ In fast-paced Hong Kong, they also have a particular role in providing a space for people to relax.⁶⁰ For many of the young people we spoke to as part of qualitative research carried out by LSE Cities and the Hong Kong Jockey Club Centre for Suicide Research and Prevention at the University of Hong Kong (pp. 44-6), Hong Kong's urban public and green spaces felt inaccessible, being full of children and the elderly. Rather, they turned to restaurants and badminton courts if they wanted to relax with friends, and to listening to music through headphones if they wanted some privacy and time to themselves. The importance of green space in ameliorating stress and mental health disorders in cities beyond Europe and North America justifies further examination, in light of the strong evidence linking these issues and the growing problem of stress and mental health.⁶¹

SHAPING CITIES FOR HEALTH: WHAT NEXT?

As urban health research, policy and practice shifts its geographies towards a broader range of urban contexts, new methodologies and approaches will be required. Here we offer a few suggestions for potential directions of travel.

'Design-conscious' methodologies might provide more insight into the precise ways in which the built environment may be influencing health and well-being in

a particular setting. Urban design and planning – from the macro-scale of sprawl versus compact development, and private car use versus sustainable transport, to the micro-scale of public space design, access to daylight, trees and recreational spaces - all matter to the way we feel about living in cities. Design-conscious urban health research would be alert to the details that are important in determining, for example, the extent to which an urban park is used by families, whether a health care facility is used by the urban poor, or a rehousing scheme allows for residents to adapt their homes in a safe way, avoiding the temptation to blur them through over-simplistic references to 'the built environment'.

Qualitative methodologies might help to provide insights into health and wellbeing as experienced by urban residents. As Mathews and Izquierdo note, the term wellbeing 'implies consideration of people's own internal states of mind',62 as well as the sorts of external and quantitative evaluations associated more with the term, quality of life. The six focus groups conducted by LSE Cities and the Hong Kong Jockey Club Centre for Suicide Research and Prevention at the University of Hong Kong (pp. 44–6) provided insight not only into how residents felt density impacted on their health and well-being but also, more importantly, into the ways in which they themselves make density work in Hong Kong, by adapting their behaviour and negotiating their environments. Setting such designconscious and qualitative analyses in

dialogue with quantitative public health science, both between and within cities, as explored earlier in this essay, may provide a powerful combination.

A spatial approach to urban health and well-being would give greater emphasis to the substantial health inequalities within cities, to the experience of health in place, and to the potential for the shape and design of the urban environment to influence human health and well-being. It could more explicitly show how the social hierarchies that take centre-stage in the social determinants approach are played out across the spaces and places of cities, visible in spatial inequalities in urban infrastructure as well as in socioeconomic and health status. It would require more focus on cities themselves and places and spaces within them, rather than spaceless and placeless 'rural' and 'urban' populations. It would communicate more clearly how insufficient, wrongly located or poorly designed infrastructure and amenities can reinforce and deepen social and health inequalities.

To recognise the politics of urban health involves indentifying that the decisions made by city mayors, developers, transport planners, urban designers, architects and city residents themselves matter to health and well-being: whether to have a green belt or invite endless sprawl; to invest in roadbuilding or in public buses and trains; to take intentional and careful steps to create active and lively streets that encourage walking and mixing or to create segregated mono-functional enclaves that keep people apart. How dense should housing development be, and how can the trade-offs that people make this be sensitive to the trade-offs that people make? How should the progressive improvement and 'retrofitting' of informal settlements be allowed for, or the growth through 'barefoot' planning be

anticipated? Where should new hospitals or local health facilities be built, and what should they look like? Implications for human health and well-being accompany the decision in each case.

Yet in many cases, as we know, urban governance is likely to be part of the problem, rather than part of the solution. Many informal settlements, where some of the most pressing challenges to health occur, are almost by definition places where urban governance lacks the capability and/ or capacity to provide infrastructure needed to support healthy homes and livelihoods. As David Satterthwaite writes, 'what advice can be given with regard to urban health in settlements where, in effect, there is no government?'.⁶³ More pointedly, what is the point of advocating that urban planning and public health should be reconnected if no attempt at urban planning is being made, or where planning is failing? By bringing urban actors, whether developers, residents, community groups or politicians themselves into the equation, we hope to open up dialogue on how positive change can be achieved in diverse settings.

The Urban Age Hong Kong conference provides an opportunity to contribute to the development of these and other methodologies and approaches. It is defined not only by an interest in reading between research, policy and practice on urban health from cities in low-, middleand high-income countries but also in

setting quantitative, qualitative and design perspectives in conversation, and emphasising the spatial and political nature of urban health and well-being.

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DYNAMICS OF URBANISATION

POPULATION GROWTH RATES IN 432 WORLD CITIES ABOVE 1 MILLION



Source: UN Population Division (2011). World Urbanization Prospects: The 2009 Revision Population Database.[esa.un.org/unpd/wup/index.htm

There are dramatic regional differences in the pace and scale of urbanisation. Some of the cities predicted to be among the largest in the world in 2025 were no more than villages and small towns in 1950. Then, Shenzhen had 3,148 inhabitants, Kinshasa 0.2 million, Jakarta 1.4 million, Chicago five million and London 8.4 million. In 2010, these five metropolitan areas all have roughly nine million inhabitants. By 2025, it is predicted that Chicago will reach ten, Jakarta and Shenzhen 11, and Kinshasa 15 million. London's population, on the other hand, is predicted to be no larger than it was 75 years before. The map above charts the size and growth of a selection of world cities with more than a million people from 1950 (white circle) to 1990 (light green circle) and indicates the projected growth to 2025 (dark green circle) based on UN predictions. While growth in many European and North American cities reached its peak by 1950, the rest of the world saw its cities grow most significantly in the next four decades. Tokyo grew by more than half a million inhabitants each year between 1950 and 1990, Mexico City and São Paulo by more than 300,000 each per year, Mumbai by around 240,000 per year and Manila and Cairo by approximately 160,000 per year. The only exceptions in this period were cities in China and Sub-Saharan Africa, which experienced only modest growth. But from the 1990s onwards, while cities continued to grow rapidly in South and South-east Asia (622,000 new inhabitants per year in Delhi between 1990 and 2010), cities in China started their growth spurt. The South Guangdong metropolitan area (which includes Shenzhen, Guangzhou and

Dongguan) saw its 5.5 million inhabitants in 1990 increase six-fold to reach almost 32 million in just 20 years. In the next 15 years, it is predicted that the most rapid urban growth will take place in Sub-Saharan Africa where cities like Ouagadougou, Dar es Salaam and Kampala will double their population, and Lagos and Kinshasa will have to accommodate more than five and six million new inhabitants respectively. These predicted trends can be seen in the annual population growth rates for the 2010 to 2025 period highlighted for a selection of cities on the map.

The two charts to the right show the broader urbanisation and health contexts within which these differential patterns of metropolitan population growth across the surface of the globe are occurring. The first displays the evolution of urbanisation levels for world regions, highlighting that the world's population is still divided; with one half living in highly urbanised nations and the other in nations in which most live in rural areas. The second chart shows the speed with which emerging economies in Latin American and Eastern Asia have caught up with North America and Europe in terms of life expectancy: Eastern Asia has gained close to 25 years of life in the space of 50 years. It also reveals how hard life expectancy in Africa has been hit by the HIV/AIDS epidemic, which derailed it from its growth path in the 1990s, causing it to trail close to ten years behind South Central and West Asian countries.



Source: UN Population Division (2011). World Urbanization Prospects: The 2009 Revision Population Database [esa.un.org/unpd/wup/index.htm]



MEASURING METROPOLITAN WELL-BEING

HEALTH AND LIFE EXPECTANCY IN 129 METROPOLITAN REGIONS



10

Since 1990, the United Nations Development Programme has been tracking the socioeconomic performance of nations using the Human Development Index (HDI), a composite indicator that measures education, health and living standards. In order to better understand the dynamics of health and well-being at the metropolitan level (rather than at the national level), LSE Cities has recalibrated available data for 129 urban areas. The map above shows how metropolitan regions perform in terms of health, indicating life expectancy figures where they are available, while the dataset on the facing page ranks the regions in order of performance across all three dimensions of development - health, education and wealth.

Given that most publically available data on health is not based at the official municipal or metropolitan level, the new LSE Cities index has been calculated using 'extended metropolitan regions' (EMR) to ensure a degree of geographical comparability across the sample of metropolitan areas (see p. 14) and their available datasets. To compensate for regional imbalances, each metropolitan area has been compared to its country's performance and 'pegged' against internationally comparable data at the

national level. In relation to health scores, for example, most weight was given to life expectancy and infant mortality rate. When only one or neither of these was available, child immunisation rates or the number of doctors or hospital beds per person were taken into account. A full description of the methodology and data sources is available online.

The data suggests that almost all of the 129 metropolitan regions analysed outperform their national contexts. Only 19 under-perform in health, ten in education and 14 in wealth. Metropolitan regions tend to outperform their national contexts most in the wealth dimension, followed by education and then health, but there is a considerable range of performances across all dimensions. The table on the adjacent page reveals that many regions in the sample do not score equally well on all three dimensions. High-income Asian and West European areas achieve their highest scores in health - with Hong Kong at the top – while Sydney and North American areas tend to score higher in education and wealth than in health. Chinese and Indian metropolitan regions tend to score much lower in education than they do in either health or wealth, while this trend

is reversed in Sub-Saharan Africa, where the large majority score lowest in health. These patterns indicate that the level of performance of metropolitan regions is tightly linked to the level of development and welfare regime of the nation in which they exist.

The map demonstrates how high-income Asian regions do better than all others (with a score of 0.87 out of 1 on average), while West European areas and Sydney come second (0.81), followed by their North American counterparts (0.76). Eastern European and Mexican metropolitan regions share a score of 0.65 on average, while those in China (0.61) score marginally higher than their South American peers (0.60). The lower end of the distribution is made up of North African and Middle-Eastern city regions (0.57 on average), South East Asia (0.55), South Asia cities (0.49) and, trailing even further behind, those in Sub-Saharan Africa (0.27).

Despite these strong regional patterns, the data suggests that metropolitan regions with significantly different health scores exist in very close proximity to each other. The largest gap is in South America, between Santiago in Chile (0.76) and Bolivia's La Paz (0.47), followed by the difference between

the high-scoring Hong Kong (0.88) and Singapore (0.86) and their respective neighbours, South Guangdong in mainland China (0.60) and Jakarta in Indonesia (0.58). Within the European continent there are wide discrepancies, with Stockholm in Sweden performing very well at 0.85 while Moscow in nearby Russia falls to 0.60, and relatively close cities like Athens and Istanbul score respectively 0.77 and 0.57. In Asia, even though Ho Chi Minh City in Vietnam and Phnom Penh in Cambodia are only just over 200 kilometres (124 miles) apart, there is a substantial score difference of 0.22. Major variations also exist at the lower end of the scale in Africa, where Dar es Salaam in Tanzania fares twice as well as Lusaka in Zambia (0.36 versus 0.18), while India's Chennai's outperforms Faisalabad in Pakistan, with a score of 0.57 compared to 0.41.

The performance of a number of selected case studies is discussed in detail overleaf.

The research for pages 10-15 has been led by Antoine Paccoud, Researcher, LSE Cities, London School of Economics and Political Science.

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Source: UN Development Programme (2011). Human Development Report Database. [hdr.undp.org/en/statistics/data/] UN Population Division (2011). World Population Prospects: The 2010 Revision Population Database. [esa.un.org/wpp]. Various international, regional and national statistical sources were used to calculate the Extended Metropolitan Region health, education and wealth indices. A full list is available at urban-age.net. The population of the Extended Metropolitan Regions were based on national statistical sources and the UN World Urbanisation Prospects, 2009 Revision.

HEALTH, EDUCATION AND WEALTH IN 129 METROPOLITAN REGIONS

Extended Metropolitan Region (EMR)	Nation	EMR pop. 2010	Health index	Education index	Wealth index	Extended Metropolitan Region (EMR)	Nation	EMR pop. 2010	Health index	Education index	Wealth index
Hong Kong	Hong Kong	7,069,378	0.88	0.66	0.77	Porto Alegre	Brazil	4,264,436	0.59	0.58	0.65
Osaka	Japan	18,488,755	0.86	0.75	0.73	Nanchang	China	4,836,946	0.59	0.54	0.60
Tokyo	Japan	42,607,376	0.86	0.76	0.74	Curitiba	Brazil	3,446,485	0.59	0.58	0.66
Singapore	Singapore	4,836,691	0.86	0.64	0.78	Makassar	Indonesia	2,579,112	0.59	0.50	0.49
Stockholm	Sweden	1,990,493	0.85	0.76	0.78	Fuzhou	China	7,252,632	0.59	0.53	0.60
Rome	Italy	4,101,228	0.83	0.73	0.74	S o Paulo	Brazil	26,193,667	0.58	0.58	0.67
Madrid	Spain	6,418,863	0.82	0.75	0.75	Salvador	Brazil	3,924,954	0.58	0.57	0.60
Paris	France	12,177,135	0.82	0.73	0.78	Medan	Indonesia	5,255,905	0.58	0.53	0.50
Berlin	Germany	4,945,877	0.81	0.79	0.71	Ankara	Turkey	4,771,716	0.58	0.55	0.66
Sydney	Australia	7,253,400	0.81	0.89	0.75	Rio de Janeiro	Brazil	13,331,714	0.58	0.58	0.64
Randstad	Netherlands	6,969,690	0.80	0.77	0.77	Jakarta	Indonesia	34,772,342	0.58	0.51	0.51
London	United Kingdom	14,830,051	0.79	0.71	0.77	Istanbul	lurkey	15,613,932	0.57	0.52	0.68
Ioronto		0,450,145	0.79	0.79	0.76	Creationer	India	12,397,681 E 610,080	0.57	0.44	0.55
San Francisco-San Jose	USA	9,143,530	0.79	0.81	0.80	Casabianca	Iviorocco	5,019,089	0.57	0.42	0.53
Lishon	Portugal	23,314,004	0.78	0.60	0.79	Mapila	Philippinos	22 065 889	0.57	0.45	0.55
		17950 451	0.78	0.00	0.73	Tehran	Iran	14 795 116	0.50	0.02	0.55
Athens	Greece	4 123 518	0.77	0.70	0.75	Surabaya	Indonesia	8 728 602	0.55	0.51	0.00
Boston	USA	9.073.643	0.77	0.81	0.79	Alexandria	Eavot	9.433.514	0.55	0.50	0.55
Miami	USA	7,432,017	0.76	0.79	0.77	Cairo	Egypt	24,243,250	0.54	0.50	0.54
Santiago	Chile	6,921,403	0.76	0.68	0.66	Mumbai	India	26,167,972	0.54	0.44	0.56
Chicago	USA	11,599,646	0.75	0.79	0.78	Hyderabad	India	9,306,634	0.54	0.42	0.56
Dallas	USA	7,731,414	0.74	0.78	0.77	Bangalore	India	10,576,167	0.54	0.43	0.56
Washington DC-Baltimore	USA	9,489,664	0.73	0.81	0.81	Rabat	Morocco	2,648,773	0.53	0.43	0.53
Atlanta	USA	7,506,267	0.73	0.79	0.78	Pune	India	9,426,959	0.52	0.43	0.54
Philadelphia	USA	7,903,476	0.73	0.80	0.79	Mashhad	Iran	5,940,766	0.52	0.57	0.61
Warsaw	Poland	2,472,713	0.73	0.72	0.74	Ahmadabad	India	8,595,678	0.51	0.43	0.56
Budapest	Hungary	2,930,934	0.72	0.78	0.73	Ludhiana	India	3,487,882	0.51	0.43	0.58
Bucharest	Romania	1,948,038	0.67	0.76	0.75	Indore	India	3,272,335	0.51	0.42	0.53
Monterrey	Mexico	4,653,458	0.66	0.63	0.67	Islamabad-Rawalpindi	Pakistan	5,814,142	0.50	0.39	0.54
Buenos Aires	Argentina	18,485,510	0.66	0.68	0.67	Hubli-Dharwad	India	1,846,993	0.50	0.41	0.48
Belgrade	Serbia	2,253,185	0.65	0.68	0.62	Santa Cruz	Bolivia	1,992,709	0.50	0.66	0.57
Nexico City	Mexico	35,418,952	0.64	0.62	0.64	Surat	India	6,079,231	0.49	0.42	0.53
Damascus	Syrian Arab Republic	4,477,000	0.64	0.43	0.54	Dhaka	Bangladesn	18,105,000	0.49	0.37	0.40
Lima	Poru	10 05/ 952	0.63	0.01	0.63	Бпора	Bangladosh	2,300,145	0.40	0.42	0.54
Beiiing	China	17487816	0.63	0.54	0.65	Chittagong	Bangladesh	7509.000	0.40	0.36	0.30
Aleppo	Svrian Arab Republic	4,744,000	0.62	0.36	0.49	Kolkata	India	33.084.734	0.47	0.41	0.53
Ho Chi Minh City	Viet nam	12,592,100	0.62	0.47	0.49	Karachi	Pakistan	14,270,132	0.47	0.39	0.60
Shanghai	China	19,553,651	0.62	0.53	0.67	La Paz	Bolivia	1,908,813	0.47	0.66	0.52
Shenyang-Fushun	China	9,587,314	0.62	0.54	0.63	Lucknow	India	4,588,455	0.45	0.41	0.51
Dalian	China	6,296,304	0.61	0.53	0.66	Lahore	Pakistan	13,335,777	0.45	0.37	0.55
Wuhan	China	9,202,994	0.61	0.53	0.62	Tashkent	Uzbekistan	4,789,500	0.45	0.63	0.49
Caracas	Venezuela	5,431,709	0.61	0.53	0.63	Delhi	India	30,141,583	0.44	0.43	0.56
Bogot‡	Colombia	9,840,818	0.61	0.61	0.62	Yangon	Myanmar	7,122,722	0.42	0.39	0.45
Nanjing	China	8,060,882	0.61	0.53	0.64	Jaipur	India	6,663,971	0.42	0.41	0.50
Bangkok	[hailand	14,190,762	0.61	0.56	0.63	Faisalabad	Pakistan	7,055,417	0.41	0.34	0.41
XiOan	China	8,611,430	0.61	0.54	0.57	Phnom Penh	Cambodia	2,746,038	0.40	0.47	0.48
Lianjin Coint Datarahura	China Duccion Fodoration	12,142,489	0.61	0.53	0.64	Cotonou	Benin	1,523,836	0.37	0.40	0.40
Saint Petersburg	Russian Federation	6,137,260	0.61	0.66	0.67	Dar es Salaam	lanzania C™to dÕhiro	4,149,873	0.36	0.33	0.41
linon	China	6 977 240	0.61	0.53	0.57	Abiojan	Sonogal	7,045,100	0.30	0.31	0.42
Chenadu	China	13 184 294	0.01	0.53	0.02	Nairobi	Kenva	7806 748	0.35	0.53	0.44
Kiev	Ukraine	4,506,900	0.61	0.77	0.60	CapeTown	South Africa	5,223,900	0.31	0.61	0.61
Hefei	China	5,130,599	0.61	0.53	0.60	Kampala	Uganda	3.840.400	0.30	0.45	0.41
Hanoi	Viet nam	9,633,100	0.60	0.47	0.50	Johannesburg	South Africa	11,191,700	0.30	0.62	0.62
Fortaleza	Brazil	3,950,596	0.60	0.56	0.55	Bamako	Mali	4,414,117	0.22	0.23	0.37
Moscow	Russian Federation	17,928,071	0.60	0.65	0.69	Kinshasa	Congo, DRC	9,426,523	0.22	0.36	0.21
Guiyang	China	4,035,935	0.60	0.53	0.55	Abuja	Nigeria	4,957,411	0.21	0.39	0.47
Belo Horizonte	Brazil	5,453,312	0.60	0.58	0.63	Lagos	Nigeria	15,373,213	0.20	0.44	0.46
South Guandong	China	40,437,810	0.60	0.54	0.67	Harare	Zimbabwe	3,847,834	0.20	0.50	0.13
Recife	Brazil	4,054,966	0.60	0.56	0.57	Ibadan	Nigeria	6,322,614	0.19	0.41	0.44
Harbin	China	10,350,973	0.60	0.54	0.58	Lusaka	Zambia	2,467,467	0.18	0.41	0.40
Medellin	Colombia	6,065,846	0.60	0.56	0.59	Kano	Nigeria	10,643,633	0.17	0.33	0.38
Brasilia	Brazil	1 161 121	0 59	0.58	0.66						

COMPARING PERFORMANCE IN HEALTH, EDUCATION AND WEALTH

HONG KONG

Amongst the 129 city regions analysed in this survey, Hong Kong's scores best in health (0.88 out of 1), followed by wealth (0.77 out of 1) and education (0.66 out of 1). It shares this overall pattern with Singapore, which scores higher than Hong Kong only in wealth, but also with Paris and London, which it surpasses on health. While its special status as a city-state with a highly specialised economy and development history may render comparisons with the other regions difficult, no other metropolitan area achieves its combination of high life expectancy at birth (82.5 years) and a very low infant mortality rate (two per 1,000 live births). Hong Kong's comparatively low performance in education reflects lower average years of schooling and enrolment rate compared to European and North American averages.

NEW YORK CITY

The wider metropolitan area of New York scores equally well on all three dimensions - education (0.80), wealth (0.79) and health (0.78). It is outperformed nationally by San Francisco in all dimensions and by Boston on education and (very marginally) on wealth. This may reflect its higher poverty rate (12 per cent) and income inequality measured by the Gini coefficient (50.2), than both San Francisco (10 per cent and 46.5) and Boston (9.8 per cent and 46.1). Internationally, New York achieves high scores in education and wealth, surpassing high-income Asian and European regions. The latter outscore New York only in health, reflecting higher life expectancies and lower infant mortality rates in these regions. Within its North American context, New York's strong health performance may reflect significant investment and local autonomy in health care and its increasing targeting of health policies towards vulnerable neighbourhoods and at-risk groups, in an effort to reduce health inequalities and gaps in health care access.

LONDON

London's metropolitan region scores significantly better for health (0.79) and wealth (0.77) than it does for education (0.71). While London does better than all North American city regions in health, it scores lower than most other West European capitals in health and in education. In fact, the UK capital suffers from a significantly higher infant mortality rate than many other European capitals - with wide discrepancies between wealthier West London and the more deprived East London, which has for generations been home to immigrant communities. Within the UK, London performs strongly, particularly in relation to wealth, reflecting its role as an international financial centre and a key location for specialist service firms. This is translated at the European level by a high wealth score, with only Stockholm and Paris edging past it. By European standards, London is at the same time an attractive location for educated migrants and a site of low educational achievement with an unequal educational profile.

ISTANBUL

Istanbul's metropolitan region scores strongly in wealth (0.68) placing it among the top regions in emerging economies, but it achieves low scores in health (0.57) and education (0.52). Within Turkey, Istanbul also performs more strongly in wealth than in health or education, with literacy and infant mortality rates that mirror national averages. Ankara, the nation's capital, performs more strongly on education and health, with almost 9 per cent more of its population of more than six years of age having at least high school education. Its overall pattern is very similar to that observed for Brazilian regions, where improvements in wealth do not seem to have translated into better social conditions so far. Istanbul's low scores in health and education may be explained in part by national school attendance patterns (adults achieve only 6.5 years of schooling on average, for example) and the high levels of rural in-migration from areas that suffer from significant regional inequalities.

MUMBAI

Mumbai's extended urban region scores lower in education (0.44) than in health (0.54) or wealth (0.56), a pattern similar to the Chinese city regions. It is India's second-highest scoring city in education behind Kochi, and its third-highest scoring city in health, following closely behind Kochi and Chennai. With more than half its population living in slums, Mumbai's low international performance across all indicators reflects its lack of basic infrastructure, insufficient formal housing and lack of access to education, health and formal employment on international standards. Yet Mumbai significantly outperforms the national average across all measures. In relation to health, for example, 88.1 per cent of children are completely immunised, compared to 53.3 per cent nationally, and in terms of material welfare, 86.1 per cent of households have access to a toilet, compared to 49.3 per cent nationally.

SHANGHAI

Shanghai is weaker in education (0.53) than in either health (0.62) or wealth (0.67), a pattern that is common to most urban areas in the region. Shanghai outperforms the Chinese national average in all measures, but only marginally in relation to education. Its strong economic performance at a global level - similar to Mexico City, São Paulo and St Petersburg - and within China reflects its role as the country's financial capital, with the relative autonomy to implement pro-growth policies. Its comparatively weak performance in relation to health and especially education may reflect Shanghai's rising inequalities (it has a Gini coefficient of 45), as well as the impact of China's hukou policy which, despite recent modifications, restricts access to basic services for rural-urban migrants.

MEXICO CITY

Mexico City's extended metropolitan region scores equally on all three dimensions, with 0.64 on both health and wealth and 0.62 in education. Internationally, it performs less well than North American cities on all dimensions, and is also surpassed by Buenos Aires and Monterrey in Latin America, but remains within the top tier of metropolitan regions for all three indicators reflecting a sustained effort to improve housing, education and health over recent years. The Distrito Federal, Mexcio City's central district with nine million residents, has put a strong focus on inclusiveness, especially of the elderly and informal workers; with important measures such as free access to medication for informal workers, large-scale health promotion campaigns and screening tests for non-transmitted diseases in the public space. However, the wider metropolitan area performs only marginally better than the national average across all measures used to calculate these indices. This unexpectedly low performance reflects the extremely extensive nature of its geographical boundary which embraces very diverse communities spread thinly across a wide area. In fact, within the vast urban conurbation of 35.4 million people, it is only the central Distrito Federal which has been able to concentrate health, education and economic resources effectively, while far less developed and low-performing surrounding regions may suffer from access to core services.

SÃO PAULO

Reflecting its status as the economic powerhouse of the Brazilian economy, São Paulo's wider metropolitan region scores well internationally on wealth (0.67), but underperforms on education and health (0.58), a pattern that is replicated at the national level. São Paulo outperforms Brazil significantly in economic terms but aligns itself to national averages in both health and education. This makes São Paulo one of the lowest scoring regions in South America on health, and places it in the same category as Turkish, Indonesian and Chinese urban regions. An explanation for this relatively low health score might be found in the fact that there is significantly more variation in health performance amongst the municipalities that make up the Brazilian city regions than there is in either education or wealth performance, suggesting that the high rates of income inequality in Brazilian cities (São Paulo's Gini coefficient is 61) find their most extreme manifestation in health outcomes. Nonetheless, the city authorities have made a concerted effort to improve health conditions for its residents, and in 2000 integrated the national health insurance system, which guarantees free health assistance to all its citizens.

JOHANNESBURG

With 0.62 in both education and wealth, Johannesburg is the highest-scoring metropolitan region in Africa, surpassing all Northern African cities and reaching levels similar to those observed in South America and China. However, in terms of health, Johannesburg's score of 0.30 puts it at the very bottom, close to Sub-Saharan African regions, reflecting the high incidence of HIV in South African cities, especially in areas with high levels of informal development and poor access to services. Despite Johannesburg's poor health performance internationally, it does better than the national average in this regard, while the picture is more mixed in education and wealth. Johannesburg's difficulties may stem from its high social and spatial inequalities (its Gini coefficient is 75, one of the highest in the world) and insufficient infrastructure, despite efforts towards universal education and health, housing and neighbourhood improvements.











MEASURING THE HUMAN URBAN FOOTPRINT

DENSITY LEVELS AND POPULATION SIZE OF 129 METROPOLITAN REGIONS



Following on from the analysis of urban well-being, the data on these pages shows the result of a new mapping exercise that covers the same 129 'extended metropolitan regions' across the world, with a total population of 1.2 billion people, representing 35 per cent of the world's urban population in 2010. From Cotonou in Benin, with just more than 1.5 million people, to the Tokyo metropolitan region, with more than 42 million inhabitants, our study both measures and illustrates density patterns in urban regions across all five continents, expanding LSE Cities' longstanding interest in the links between physical and social form. Using Google Earth satellite imagery, we captured a 'snapshot' of where

people live and estimated 'net densities' by systematically tracing the built-up area of each metropolitan region - including central zones, satellite towns and the peripheral areas (a detailed methodology can be found online). The fact that 23 million people in Manila occupy a space one eighth the size of the same number of New Yorkers, or that Atlanta in the USA is 25 times larger than Hong Kong with roughly the same population, says something about the capacity and resilience of urban form as well as physical and geographical constraints.

The map above shows the size of the extended metropolitan regions and their density, with darker blue indicating greater concentration of people and lighter blue

more sparsely populated city regions. It shows that density levels vary significantly across and within world regions, with the highest densities concentrated in North Africa, the Middle East, South and Southeast Asia and – not surprisingly – more sprawling cities in North America and Australia.

To get a sense of the spatial dynamics of these city regions, we mapped 12 cases at the same scale with core built-up areas in black and peripheral areas in grey. By comparing the footprint of the world's largest urban conurbation in Tokyo with Atlanta, our sample's most land-hungry city region, we see that roughly the same amount of land is occupied by 42 million as by 7.5 million people. Meanwhile, the map of London shows that 14 million people are spread across South-east England.

Some of the densest metropolitan regions in the world are illustrated opposite, arranged in three rows in descending order of density. Lahore, Hong Kong and Kinshasha - where more than nine million people live in 368 square kilometres (228 square miles) of single storey housing reveal very diverse spatial patterns of hyperdensity. Cairo, Manila and Bogotá represent diverse African, Asian and South American typologies of average high density, while Lagos, Lima and Ho Chi Minh City accommodate radically different population sizes with similar levels of density.



The population of the Extended Metropolitan Regions were based on national statistical sources and the UN World Urbanisation Prospects, 2009 Revision. All other tion was calculated from Google Earth Pro satellite imagery (various years).



Built-up area of the EMF

Outside count





WHERE PEOPLE LIVE

Unlike the more generic measure of 'net density' presented in the previous pages, residential urban density measures how many people live in relative proximity in cities, shown below by the number of people living in each square kilometre of a 100 x 100 kilometres urban region. Residential density is largely driven by topographical constraints, the location of public transport and other infrastructure, but also by each city's inherited traditions of urban culture

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and development. Density differs widely, from the high densities of Hong Kong, Mumbai and central areas of Istanbul and Shanghai to the much lower density pattern of London. Johannesburg shows limited areas of higher density set around a downtown that no longer has a residential population, in the midst of a very low-density sprawl. Istanbul, New York and Hong Kong show how topographical constraints drive densities that rise to 'spikes' in Manhattan

and parts of the Bronx, Brooklyn and Queens in New York, and in Hong Kong Island and Kowloon in Hong Kong. São Paulo is multi-centred and similar in its overall density pattern to Mexico City, yet São Paulo's skyline is dominated by high-rise apartment blocks, while Mexico City's is consistently low-rise, demonstrating that high-density can be achieved with different types of built form.





SIGNS OF AGEING

The age distribution among urban populations reveals a considerable variation that closely mirrors national and global demographic trends. Hong Kong, along with European and North American cities, reflects a more mature average age compared to cities in developing countries, even though New York and London have younger populations than rural areas in the US and UK respectively. These cities reveal a 'middle-age spread' in line with declining birth rates and longer life expectancy. The story is different in contexts of rapid urban growth. The age pyramids of Mumbai and Mexico City - and to some extent Istanbul and São Paulo – show the dominance of younger rural-to-urban migrants, with many residents below the age of 30 providing a broad base for the labour force and the large informal sector they work in. Shanghai graphically represents the ageing structure of its population, reflecting

China's one-child policy and heavy in-migration from rural areas. The remarkable drop in life expectancy, especially among men, of people above the age of 50-60 is noticeable in Mumbai, Istanbul and Johannesburg, indicating limited access to health care, high levels of poverty and poor environmental quality.

*For Gauteng Province

INFRASTRUCTURE OF MOBILITY

Transport infrastructure is a critical driver of urban form, enabling the centralisation of economic functions and the accommodation of a growing population. Without public transport, space-hungry motorways dominate, resulting in more sprawl and congestion. The oldest and most extensive metro, bus and rail systems are in London and New York, creating high levels of accessibility. Hong Kong's younger metro network extends to approximately

250 kilometres (155 miles) through ten lines with further extensions underway, connecting new towns to the CBD. Like Hong Kong, Mumbai and Istanbul are constrained by topography and have developed efficient and affordable public transport. São Paulo and Mexico City, which are not geographically constrained, have allowed the car to dominate, even though Mexico City's 177 kilometres (110 miles) of metro carries as many passengers daily as

London's 402 kilometres (250 miles). Shanghai is investing heavily in metro and rail transport, while Johannesburg has insufficient affordable public transport and relies heavily - as do São Paulo and Mexico City - on informal and unregulated collective taxis and mini bus services. Despite the recent addition of the Gautrain, Johannesburg's rudimentary transport system fails to connect to the places where most people live.



















ISTANBUL

HOW PEOPLE TRAVEL

How people travel within cities reflects the provision of public transport, local economic development, climate and urban form. Public transport accounts for 40 and 50 per cent respectively of all trips in London and Hong Kong, and 60 per cent of work trips in New York. In Hong Kong, nearly 45 per cent of trips are made on foot which, together with high public transport rates, gives it the greenest modal split of Urban Age cities in the developed world.

Despite differing economic profiles, nearly as many people drive in Johannesburg as they do in London, reflecting the dearth of any form of affordable public transport system in the South African city. A third of all trips in São Paulo and Mexico City are made by private car, but just 6 per cent in Mumbai. Non-motorised transport rises in less developed, dense cities: 45 per cent of trips are on foot in Istanbul, and in Mumbai and Shanghai more than half are

on foot or bicycle. Shanghai has experienced rapid growth in public transport use, while cycling remains prevalent (despite having dropped dramatically and being banned from some central streets): a feat not achieved by any other UA city. Even where there is a good metro system like in Mexico City, informal transport often dominates, reflecting a mismatch between travel patterns and infrastructure as well as the relatively high cost of public transport.





LONDON otorcycle 0.7% Walking 20% Ca 36.3% Bicycle 1.8% Metro 10.6% DLR 0.7% Rail Taxi 1.4% 8.4% Bus 20.1%



SÃO PAULO



SHANGHAI



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*There is no data available for 'walking' as a mode of transport for Mexico Cit The share above is over all other modes of transport.



MUMBAI



JOHANNESBURG



Non-motorised transport

Public transport

Private motorised transport

URBAN AGE CITIES COMPARED

Behind the statistics of global city growth lie very different patterns of urbanisation, with diverse spatial, social and economic characteristics that dramatically affect the urban experience. In addition to standard measures of population growth and density, the economy and transport use, LSE Cities has assembled data from a range of official sources on energy consumption, global CO₂ emissions and health, allowing a preliminary assessment of how these nine world cities compare to each other on key performance indicators.

A graphic summary of these results offers some striking differences, especially when it comes to their speed of growth. While São Paulo has grown nearly 8,000 per cent since 1900 and London by only 16 per cent (having experienced its major growth spurt in the previous century), it is Mumbai

that is predicted to grow the fastest of the nine, with 44 additional residents each hour by 2025. London, however, will only gain one person per hour, Johannesburg three and Hong Kong seven. These trends mask different patterns of age distribution: close to a third of the residents of Mumbai, Johannesburg, São Paulo and Mexico City are under the age of 20, while in Shanghai and Hong Kong the younger generations shrink to 20 per cent or less. Patterns of habitation also differ significantly. The populations of Hong Kong and London are very similar in size, but the population densities within a 10-kilometre (6-mile) radius from their geographical centres (Tsim Sha Tsui, Kowloon in Hong Kong and Trafalgar Square in London) differ by a factor of three. Shanghai's central area density is as high as Hong Kong's, but drops off

sharply beyond a 10-kilometre (6-mile) radius, while Hong Kong remains dense across the built-up urban region.

Of all the Urban Age cities, Hong Kong possesses the lowest murder rate, of less than one homicide per 100,000 inhabitants a year: safer even than Istanbul and Mumbai with less than three each. São Paulo, Johannesburg and Mexico City prove to be the more dangerous places to live - ranging from 13 to 21 murders per 100,000 people. With the exception of Hong Kong, these findings are paralleled by the level of income inequality indicated by the Gini coefficient - a measure of income distribution with a higher number representing greater inequality – in each of these cities: Johannesburg, São Paulo and Mexico City are the most unequal cities, followed closely by New York, with London



being the most equitable. Hong Kong is the exception, being the only city that is both unequal and safe.

GDP per capita is highest in the global cities of London and New York (US\$60,831 and US\$55,693 respectively), followed by Hong Kong (US\$45,090). People living in these three cities are many times wealthier, on average, than in other Urban Age cities such as Istanbul and São Paulo (US\$ 12,000-13,000) and Johannesburg, Shanghai and Mumbai (less than US\$10,000). Yet despite the fact that Mexico City's per capita income is less than a third of New Yorkers' (US\$18,321 versus US\$55,693), residents of Mexico City own nearly twice as many cars (360 per 1,000 people versus 209) and use roughly the same amount of water per person as Londoners (324 litres/570 pints per day). While Johannesburg, London, Hong Kong and Mexico City contribute similar levels of CO₂ emissions per person, the number doubles in Shanghai, where more than 10,000 kilograms (22,046 lb) per person are produced every year, owing to the presence of heavy manufacturing industry in its vast metropolitan region. In contrast we can see Istanbul, with close to 38 per cent of its workforce in the manufacturing sector, the highest of the Urban Age cities, producing just 2,720 kilograms (5,996 lb) of CO₂ per person, while Mumbai's residents contribute only 371 kilogram (818 lb) per person – less than 10 per cent of that of residents in other global cities.

There is significant variation in life expectancy among the Urban Age cities, reflecting a multitude of factors,

including the quality of health infrastructure, effectiveness of national public health policies as well as environmental and social conditions. On average, a Hong Konger lives 30 years longer than a resident of Johannesburg and still ten years longer than a person who is brought up in Istanbul or Sao Paulo, while residents of Shanghai can expect to live three years longer than New Yorkers. In Mumbai, although life expectancy has not yet reached 70 years, it performs well compared to the national average of 62 years.





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DE-CODING HONG KONG

Six essays by international and local experts on planning, health, governance and the environment provide an introduction to the key themes and narratives that are shaping the present and future of the Asian city-state, setting Hong Kong into a wider political, geographical and spatial context.

DISCONNECTION IN A HIGHLY **CONNECTED CITY**

Paul S. F. Yip

From the moment you set foot in Hong Kong's international airport, you are greeted by sleek and modern design and a streamlined customs experience. Of course, nothing less should be expected from an airport that has been recognised as the 'World's Best Airport' eight times since 2000. Arrivals are welcomed with a myriad of transportation options and a subway system that will take you to the heart of the city in just 20 minutes.

Hong Kong's world-class transportation system is no doubt one of the best there is. The city's Mass Transit Railway (MTR) carries an average of four million passengers every working day and is the primary mode of transportation for many of the city's inhabitants. Despite being one of one of the world's most densely populated cities, Hong Kong's sophisticated transportation grid makes it extremely well-connected.

Only half an hour's drive from the airport is a shopping paradise in Tsim Sha Tsui, where the only thing longer than the endless list of shopping choices is the line of tourists waiting to enter each store. Just across the harbour is Central, where money is made as quickly as it is spent. Due to a highly efficient transportation network, most places in Hong Kong are readily accessible within an hour. This high connectivity, paired with incredible displays of wealth, is a stark contrast, however, to the districts that stand between tourists and their top shopping destinations.

In the shadow of this wealth is another side to Hong Kong. Despite the 40 per cent GDP per capita growth over the last decade, which now stands at approximately US\$32,000 (HK\$249,000) per year, about 30 per cent of those on the lowest incomes actually make less money than they did a decade ago, while 10 per cent of the working population still earn less than US\$10,000 (HK\$78,000) per year. In the north and northwestern districts of Hong Kong, a short distance from the airport and the Chinese-Hong Kong border respectively, one will find communities that are isolated, vulnerable and characterised by poor financial conditions. They are often made up by 'broken' families and will experience higher suicide rates than communities in other districts within the city.

Furthermore, some 150 migrants a day enter Hong Kong from the mainland resulting in an increase in population of 54,000 each year. Many are the spouses and/or children of the city's male migrants.

Unlike their visiting counterparts (tourist from the mainland) these individuals are not that well off. They face challenges and difficulties in integrating into the local community and in finding work, a result of differences in language and of having qualifications that are not recognised within Hong Kong. Since newcomers face restrictions in receiving welfare, they have to work to meet their needs, usually taking on low-paid work and often finding themselves stuck at home during bouts of unemployment. Before the implementation of the minimum wage policy, some were being paid as little as US\$500 (HK\$3,400) a month

This year, however, sees a law being passed that will now protect these lowincome groups from being further exploited. The minimum hourly wage has been set at the level of US\$3.60 (HK\$28), which is still very low in view of the rising inflation rate (now standing at 7 per cent) and the high living costs in Hong Kong. Many businesses, however, have objected to the law, claiming that it will lead to potential closure. However, since the law was introduced (in August 2011) the city's unemployment rate has reached an alltime low, at just 3.2 per cent. The fear that the older working population might lose their jobs has not been come to fruition. Indeed the most substantial expense for a business in Hong Kong is not its employees' wages but, in fact, ground rent, which can comprise up to 50 per cent of the total operating cost.

The city enjoys a spectacularly high GDP growth of about 4–5 per cent each year. It not only has the most expensive housing in the region but also a very high income disparity. Hong Kong's Gini coefficient (a statistical measure of income disparity) is ranked as one of the highest in world - at 0.535 in 2010 - while social mobility, especially among the younger generation, is reaching stagnation. Those between the ages of 15-19 and 20-29 are more likely to face unemployment than any other group, with those in the 20–29 range experiencing rising unemployment (since 1991), irrespective of educational background. With no space, such expensive housing, less promising job prospects and the population squeeze, young people feel trapped and the opportunities are not as plentiful as before.

Hong Kong is notorious for its small living spaces, an infamous example being the Kowloon Walled City, a densely populated settlement that was demolished in 1994. People still live in 'cage homes' or cubicle flats in such areas as Sham Shui Po, Mongkok and Kwun Tong, where temperatures within these habitats can reach upwards of 35°C (95°F) in the summer. To accommodate the rising population, satellite towns were developed in the 1970s, many of which were separated from the city centre by the mountains. Despite the high connectivity of Hong Kong's transportation system the distance of these new towns from the city centre, and consequently the greater travel costs of travelling between them, means that low-income groups living in these areas (such as Tung Chung and Tuen Mun, for example) are more isolated. Furthermore, these communities have been plagued with problems of inadequate job opportunities and public facilities, resulting in 'bedroom' communities within a high density of public housing estates. The relatively younger residents in these areas are generally less well educated and come from lower socioeconomical backgrounds than the general population of Hong Kong. These vulnerable groups face a host of problems, such as low wages, insecure or unstable jobs, domestic violence and suicide (the rates of which are 16-25 per cent higher than the population average). Even access to services provided by NGOs and other such organisations is characterised by a certain disconnection, possibly due to the distant branch's lack of communication with its headquarters.

Especially at risk seem to be teenagers many of whom have low self-esteem, lack problem-solving skills and consequently have poor mental health. They are also less likely to seek the help or support they need in order to address these problems.

The well-being of older people living in these areas is also greatly affected. Due to their lack of mobility, a factor that relates more to the high cost of public transport than to how far they have to travel, they lack a firm social and family support network. As a result they become isolated and cut off from the community. Some were relocated from the older districts in Kowloon and Central to the newly developed districts in the north and western parts of Hong Kong. With property prices being skyhigh and continuing to soar, relocating is not an option and so these populations are not only isolated but also trapped in these areas. Social networks have broken down due to such relocations and a new system has yet to be established. These older people feel disconnected. With Hong Kong's increasingly greying population and a dependency ratio standing at 334, and expected to increase rapidly in the next decade, the suicide risk for the elderly is a growing problem.

Social deprivation and fragmentation unquestionably plays a role in the general mental health of the inhabitants of any given area. Steps need to be taken to ensure that these isolated and vulnerable districts are integrated into the rest of Hong Kong and that they receive the resources and attention they need in order to truly become a community. The success of a city cannot be measured only by its financial prowess; the mental health and the well-being of its residents must also be considered. What good will it do if property prices are skyrocketing on Hong Kong Island, at an average cost of more than US\$21,500 per square metre, when half of all households have a living space of less than 46 square metres (500 square feet)? What good will it do to the local population if they cannot share the benefits of economic development? What sort of quality of life will Hong Kong's inhabitants

have if they can't possess their own living space? We need to ask ourselves some very deep and hard questions. If this imbalance continues to grow and the income gap continues to widen as expected, is the whole development sustainable? Will it not cause social disharmony and unrest? Hong Kong will soon be connected to the mainland by a very fast train, with a speed of 300 kilometres per hour. However, there is still a substantial proportion of our community being left behind that have not been able to connect even to their own rapidly changing city. Once again, does Hong Kong move in a direction where the overall well-being of the city's inhabitants is at stake?

Even with outstanding economic achievements and world-class infrastructure, a city is only as strong as its weakest link.

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CONSERVING HONG KONG

Ho Yin Lee and Lynne DiStefano

VICTORIA HARBOUR AND THE CITY OF VICTORIA

Victoria Harbour has always been inseparably linked to Hong Kong's development. It would not be an exaggeration to say that, if not for the harbour, there would be no Hong Kong as we know it today. The birth of Hong Kong as a city can be traced to the moment, in 1841, when Captain Elliot of the British East India Company raised the Union Jack with little fanfare on a little knoll on a small sub-tropical island off the southeastern coast of China, and declared its possession on behalf of His Majesty's Government. When the British Government learned of its latest possession, it was not impressed. The British Foreign Secretary, Lord Palmerston, went as far as describing Hong Kong contemptuously as 'a barren island, which will never be a mart of trade'. But thrive Hong Kong did, in part thanks to its natural deep harbour, protected from the worst of the seasonal typhoons by the land masses of the island and Kowloon Peninsula. The harbour, named after one of Britain's most revered monarchs, has provided Hong Kong the essential means to be developed as a trading port and to

As Hong Kong grew and flourished as a British trading port city throughout the nineteenth century, it began to take shape as a city - the City of Victoria, as it was then known. It was a linear city that covered a thin belt of several kilometers along the northern coast of Hong Kong Island. As a trading port city, the habour was its lifeline, providing anchorage for merchant ships that brought goods in and out of the Chinese mainland. The city grew as the economy demanded, and towards the end of the nineteenth century it reached its limit, constrained by the very steep terrain

flourish as a commercial city.

inland. The option was obvious: create more land by filling in the coastal waters of the harbour. Thus, the northern coast of Hong Kong Island underwent a number of reclamations, so much so that almost no natural coastline remains today.

At the turn of the century, Hong Kong's territory became definitive, and it included Hong Kong Island (acquired after the First Opium War), Kowloon Peninsula (after the Second Opium War) and a large expanse of hinterland known as the New Territories, as well as a number of assorted outlying islands (leased from the Imperial Chinese Government at the end of the nineteenth century). By the mid-twentieth century, the urban areas of Hong Kong had expanded to cover most of the northern coast of Hong Kong Island and almost the entire Kowloon Peninsula. The heart of urban Hong Kong, home to all major government and financial institutions, was (and still is) Central district, commonly known as 'Central'. By this time, Central had developed to become truly worthy of the city's namesake - it was a district filled with exemplary colonial architecture of the Victorian era, and enriched with those of the Edwardian and Art Deco period. The first half of the twentieth century

It has been argued that if the Hong Kong Government had had better conservation foresight in the 1970s, Central could have become a historic centre with architectural showpieces of the Victorian, Edwardian and Art Deco traditions, raising the quality of life and well-being for all of Hong Kong's inhabitants. Unfortunately for Central, the government took on builtheritage conservation as part of its official portfolio (in 1976) at a time when Hong Kong was starting to shift to the land and property development-driven economy that continues to prevail today. In order not to impede mega-revenue generating development projects, conservation, particularly in urban areas, was given low priority. Conservation was relegated to part

saw little noticeable change to the architectural character of Central. The pace of change quickened in the 1950s, when Hong Kong began industrialising and transformed itself from a trading port city into a regional manufacturing industrial hub. Modern mid-rise commercial buildings began to appear along the skyline By the late 1970s, Hong Kong underwent another transformation, as the labourintensive manufacturing industry started its exodus to the post-Mao open-door China to take advantage of the abundant cheap labour. The economy shifted to finance and service-based industries for international companies. The demand for higher-quality commercial and residential property enabled the government to adopt a high land price policy to generate revenue Hong Kong's economy was set on the path of dependence on commercial and residential property development. This new economy drastically quickened the pace of change in Central as the familiar Victorian and Edwardian buildings of the pervious eras were rapidly pulled down to make way for high-rise commercial developments that could better exploit the land's increased plot ratio. Central would never be the same again.

ENTER HERITAGE CONSERVATION

of the leisure and cultural services (in the same league as the role of public museums), overseen by an appointed advisory board, whose early membership consisted of a number of people directly or indirectly associated with the property development industry, and executed by an agency low in the governmental hierarchy. The telling sign of the lack of priority given to built-heritage conservation lies in the lack of an open, comprehensive policy (such a policy is still in the process of formulation at the time of writing). The conservation of buildings in the urban areas, where land and property prices are phenomenally high, was (and still is today) carried out in an ad-hoc manner, if it was carried out at all, and dealt with on a case-by-case basis.

Since the enactment of legislation for heritage conservation in the mid-1970s, statutory protection of heritage buildings has been officially, and artificially, limited to those built before World War II, which means that the vast majority of such buildings would now be found in Hong Kong's rural areas - the New Territories - and not on the much more expensive urban land. Further limitation comes in the means to statutorily protect a heritage building, which is to have the building in question be declared a 'monument'. The problem is that such a restrictive declaration does not distinguish between a truly monumental building (major colonial government buildings, cathedrals, Chinese temple complexes, for example) and a humble shophouse. In the 20-year escalation of urban property prices (until the property bubble burst during the onset of the Asian financial crisis in 1997), many privately-owned older urban buildings were unceremoniously demolished since they were not deemed sufficiently significant to justify getting in the way of financially super-rewarding redevelopment plans. Only those buildings that stood on sites with specific land-use restrictions and therefore limited development potentials (for example, important public and religious buildings) were declared 'monuments'. Adding to the conservation woes was the lack of public support for conservation. In the early 1980s, the British and the Chinese Governments signed the Joint Declaration that sealed the fate of Hong Kong, which would cease to be a British colony and become an autonomous Special Administrative Region of the People's Republic of China on 1 July 1997. During this transitional period of sociopolitical uncertainty and, incongruously at the same time, economic prosperity, who in their right mind would want to pay serious attention to heritage conservation? The general attitude of the educated and professionals at the time was to exploit the economic prosperity and plan for emigration.

PEOPLE POWER AND URBAN CONSERVATION Since the return of Hong Kong's

sovereignty from Great Britain to China in 1997 (in the British tradition of grand understatement, the event is known as the 'Handover'), there has been a perceptible change in the mindset of the people of Hong Kong about heritage conservation. The return of a highly developed Hong Kong to the relatively less well-developed Chinese motherland has prompted a desire among Hongkongers to cultivate

their own distinctive identity of being 'Hong Kong-Chinese'. At the same time, the highly educated younger generations (thanks to vastly increased tertiary education opportunities in place since the late 1980s) no longer buy into the idea that the government's high-land-price policy and intense property development strategy are crucial for the economy. Unlike their predecessors, who were more singularly focused on archiving prosperity, the younger generations are more concerned with environmental issues such as protecting the natural environment reducing pollution and improving the quality of the living built-environment.

Since the Handover, raising public awareness in heritage conservation has enabled a number of privately owned heritage buildings to be rescued from demolition. Public support for conservation has been further enhanced by elected politicians (legislative and district councillors), who have discovered the potential for political gains by adopting heritage conservation as part of their political platform. Such unprecedented public support for conservation helped to justify the equally unprecedented use of public money to purchase - at a cost of more than US\$6.4 million (HK\$50 million) – a piece of urban heritage property for adaptive reuse as a public museum. Public outcry was also instrumental in stopping privately owned historical buildings from being torn down or sold for redevelopment. None of these conservation success stories is related to Central, since the district has been almost fully developed into a highrise, high-density built-environment. Successive reclamations have also ensured that no pre-World War II building exists along the waterfront of Central facing the Victoria Harbour.

However, Victoria Harbour, which factors so significantly in Hong Kong's development, has become significant in the city's urban conservation. At the dawn of the twenty-first century, architecture along the Central harbour-front was represented by a cluster of buildings of the early Modernism tradition: the Star Ferry Pier and Clock Tower; Queen's Pier and the City Hall Complex. Popularly labelled the 'Bauhaus style' by the local media, these 1950s-1970s buildings are characterised by their austere functional appearance, which departs from the popular aesthetic notion of 'historic buildings' that are worthy of conservation. These relatively undervalued buildings had been slated for redevelopment under the original plan to reclaim the coastal waters of the Victoria Harbour in Central formulated in the 1990s. After the Handover, disagreement with the harbour reclamation plan became increasingly vocal, as NGOs and environmental groups began to point out the unsustainable nature of continuously filling in Hong Kong's precious Victoria Harbour for the sake of creating more land for property development.

The turning point in urban heritage conservation in Hong Kong came about when the 1950s Star Ferry Pier and Clock Tower, which had become iconic landmark along the harbour-front in Central, were demolished amid public protest in early 2007. The ferocity of the public outcry took the government by surprise, and it happened at the most awkward time for

Hong Kong's Chief Executive (essentially, the title for the post-colonial governor), who was at the eve of seeking re-election, and could not be seen as not having the mandate of the Hong Kong people for his appointment (a key reason for the early resignation of the previous Chief Executive).

To pacify the confrontation sentiment of the pro-conservation public, the government released a list of nearly 500 'graded historical buildings' - buildings whose heritage values have been evaluated for possible statutory protection (the grading itself is not legally binding). Significantly, about half of the buildings in the list are privately owned and located in urban areas. While such a list was known to exist, it had been kept as a confidential document, partly in order not to affect private property development plans, and partly to protect the buildings from their owners, who might resort to demolishing their graded properties for fear of statutory protection limiting their potential development gain. The official release of this list had the effect of stopping redevelopment plans for the listed properties because developers are weary of the fierce public objection that might incur.

THE FUTURE

The year 2007 will probably go down in history as the year when the people of Hong Kong collectively woke up to the call for protecting their built-heritage, particularly so in the urban context. Since the demolition of the Star Ferry Pier and Clock Tower, issues of urban conservation have been widely discussed and debated not only within academic and professional circles but also in the mass media. People are now more willing to give priority to conservation than redevelopment because of the increasing understanding that urban conservation is not a means to an end, but a component for sustainable development of a city. For Victoria Harbour, it would appear that the continuous reclamation of its waters has finally come to an end, as environmental and heritage conservationists have rendered such artificial land creation politically unfeasible. However, long-term protection of the harbour-front can only be possible when conservation becomes integrated with urban design and planning. Such integration has been missing in the urban development of Hong Kong. The recent successful re-election of the second Chief Executive of the Hong Kong Special Administrative Region has brought hope. It has been announced that a new policy bureau will be set up, which combines the departments responsible for land-use, urban planning and conservation. This has long been advocated by local professionals and academics, but only realised with the changing sociopolitical reality in post-Handover Hong Kong.

For the authors, as faculty members of China's first and only master degree level academic programme in conservation - the Architectural Conservation Programme at the University of Hong Kong – we are pleased to see that built-heritage conservation is no longer considered an obscure branch of studies lumped together with museums and antiquities. What the programme has been advocating, that urban conservation should be an essential

component of the sustainable development of Hong Kong as a city, has finally been given its due recognition. Many of the principles and ideas taught and advocated in the programme have become widely discussed not only in academic circles but also by the public through the mass media. When the programme was first established in 2000, the common reaction was, 'What's there to conserve in Hong Kong?'. Now, the common response is, 'There is so much we need to conserve in Hong Kong, and we're not doing enough'. For the loss of the Star Ferry Pier and Clock Tower, Hong Kong has gained one small step in the sustainable development of the city, and a significant step in the continual effort for better urban conservation and improved quality of life.

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THE COSTS **AND BENEFITS OF HIGH-DENSITY 30 URBAN LIVING**

Christine K. W. Loh and Mike Kilburn

Hong Kong is renowned worldwide for its dramatic views of a forest of highrise towers squeezed between its famous harbour and a backdrop of thickly-wooded hills. Constrained from expanding spatially by the shortage of buildable land, the Hong Kong Government's longstanding land policy has been to build up rather than out, thereby facilitating the housing of some seven million people, a world-class transport and logistics hub and a toptier financial centre in just 1,068 square kilometres (412 square miles). All of this contributes to the exciting, bustling and cosmopolitan atmosphere that defines Hong Kong as one of the world's truly iconic cities. Yet, this excitement, and the efficiencies bred by proximity, carry a substantial price tag.

Hong Kong residents must cope with some of the highest population densities on the planet in an environment that is characterised by ranks of high-rise office and residential buildings, extremely limited urban open space, a measurable urban heat island effect and dangerously high concentrations of roadside pollution that fail to disperse from poorly ventilated street canyons. It is for good reason that the public policy think tank Civic Exchange characterised Hong Kong's urban livability (with apologies to Thomas Friedman) as 'Hot, Stacked and Crowded', in a report published in April 2010.

The impacts on public health are

substantial. The best researched and best understood of these is air pollution, for which Hong Kong is sadly developing a growing international notoriety. Overseas concerns about Hong Kong's air quality range from warnings against travel by the Australian Government in 2009, to active promotion by Singapore of its clean and healthy living environment in its eternal battle to attract expatriate talent and investment away from Hong Kong - a trend identified in report on the future of Asian Financial Centres by the City of London.

All of this begs the question: how bad is it really? Where Hong Kong scores well is that air pollution both from the city and the surrounding Pearl River Delta (PRD) region is actively monitored, and the public has access to that data. The Environmental Protection Department publishes an Air Pollution Index, which gives a number for the aggregated levels of four major pollutants – sulphur dioxide (SO₂), nitrogen oxides (NOx), particulate matter and ozone. However, since high levels of NOx generally coincide with lower levels of ozone, thereby effectively 'cancelling each other out' and lowering the readings shown by the Index, the real threat to health from air pollution is systematically understated.

An alternative source of information is the Hedley Environmental Index (HEI) - a website developed by the University of Hong Kong's School of Public Health and launched in December 2008. It provides the public with real-time information on the measured concentrations of the four pollutants listed above, which creates a much more accurate picture.

The HEI goes a step further by providing the public with real-time information on the estimated impacts on public health by the current levels of air pollution. By calculating the estimated numbers of premature deaths, hospital bed days and doctor visits, using a scientifically robust, peer-reviewed methodology, it shows that air pollution has cost US\$261 million (HK\$2.03 billion), and contributed to 891 deaths, 67,890 hospital bed-days and some 6.6 million doctor visits in the last 12 months alone.

One of the key features of the HEI is to highlight the difference in emissions from different sources. Hong Kong's ambient air quality (a combination of emissions from all Hong Kong sources, plus the pollution carried across the border into Hong Kong from the highly industrialised PRD region is measured by general monitoring stations located some 20 metres (65 feet) above the ground. Roadside air quality is monitored at three stations situated much closer to ground level in three of Hong Kong's most developed and congested districts - the shopping meccas of Mong Kok and Causeway Bay and Central. The figures show that roadside pollution (of which NOx is a major component) is consistently and substantially higher than the levels of ambient pollution.

Due to its high levels and ubiquity roadside air pollution poses a major component of the threat to public health. NOx, which has been linked to reduced lung development in children and underweight births, is just one element. Particulate matter, especially diesel fumes, is responsible for a number of allergies and can also cause inflammation of major

organs and blood vessels, leading to strokes, heart attacks and other acute conditions. More widespread complaints caused by Hong Kong's toxic cocktail include irritation of the eyes and nose, coughing, shortness of breath and an increase in, and more intense, asthma attacks.

These impacts are experiences disproportionately by the poor and by women. The poor tend to live in the most congested districts and fill the ranks of the professionally exposed, for example drivers, street-level stallholders and shop workers, while women are subject to all the same health threats as men, but must often shoulder a greater burden as the primary care giver, taking time off work to accompany an ailing grandparent to hospital or sit up through the night with a coughing child.

So, to rephrase the initial question: why is roadside pollution in Hong Kong still so bad, when it is known to be so harmful?

There are two major reasons. The first is that Hong Kong's vehicle fleet includes large numbers of diesel-powered buses and trucks, plus large fleets of LPG (liquefied petroleum gas)-powered taxis and minibuses. Many of these are ageing, and in the absence of effective regulations governing inspection and maintenance (Hong Kong's Air Pollution Control Ordinance only control smoky vehicles, not those generating invisible but equally harmful toxic pollutants such as NOx), toxic emissions from these fleets are substantial and poorly controlled.

And herein lies a big part of the conundrum. Hong Kong is justly famed for the efficiency of its public transport, which is based partly on the high population densities that make public transport economically viable. However, the public transport franchises under which the buses and taxis operate are designed to ensure that the service provided is cheap, plentiful and roadworthy - but not necessarily environmentally friendly.

As public concerns about air pollution have risen so has pressure to rein in emissions from these sources. But newer, cleaner vehicles and retrofitting with catalytic converters will all cost money. Any investment must be recuperated through higher fares, and when such a large proportion of the population depends on public transport for its mobility, increases are politically difficult to secure.

The second reason is that the high population densities are brought about by the city's vertical approach to property development. While public transport benefits from the congregations of potential passengers, the same high-rise buildings ironically form the walls of the street canyons that make it so much more difficult for street-level concentrations of pollutants to disperse. This situation is exacerbated by the low provision of public open space and the consistently excessive height and width of buildings designed to take up every square foot of available land in order to maximise the economic returns.

Research by Hong Kong University of Science and Technology has shown that concentrations of roadside pollutants vary substantially between well- and poorly ventilated areas. The research also showed that differing levels of congestion and the overall number of vehicles also contributed to concentrations of pollutants, with the worst areas being those that combined high congestion and poor ventilation - total numbers of vehicles was a less significant factor.

As concern about air pollution has escalated so has public frustration about the lack of effective control measures. But air quality is now so poor that developers of new infrastructure projects are experiencing difficulties in meeting the standards required by Hong Kong's environmental impact assessment (EIA) process. Two major projects - the Hong Kong Zhuhai Macau Bridge, which is intended to connect Hong Kong with the western PRD, and the plans for adding a third runway to the airport, are providing an important opportunity for a new conversation about how to define the limits of sustainable development.

The EIA for the Bridge was challenged in a judicial review raised by a resident living close to the airport, over concerns about the impact of emissions from tens of thousands of additional vehicles on air quality and public health. The court found in favour of the applicant, throwing out the government's approval of the EIA on the grounds that air quality had not been properly assessed.

With aviation growing rapidly in the PRD the Airport Authority (AA) has begun to discuss the need for adding a third runway to the airport. A third runway would not only attract more aircraft, but also greatly increase the volume of traffic, bringing additional passengers, cargo and associated services to the airport. All of these will generate more emissions, particularly NOx, and the preliminary report from the AA's environmental consultant notes that the new runway would only be able to operate at 40 per cent capacity if air quality standards are to be met.

Thus there is a growing understanding that Hong Kong's air quality is now directly threatening not only the health of its citizens but also the economic development of the city. The numbers involved are substantial. The AA has estimated that a third runway will cost US\$17 billion (HK\$132 billion) to build and generate economic benefits of up to US\$116 billion (HK\$900 billion). Businesses ranging from airlines to hoteliers, from engineers to banks, and even the Government itself, have a strong vested interest in seeing this project approved. The first signs are emerging that this will galvanise both polluters and regulators to act swiftly to find ways to reduce pollution to the point that an EIA for the third runway can be approved.

Reducing NOx from road transport will be a major part of any successful control strategy. While the aim will be to reduce emissions in the immediate vicinity of the airport, cleaner vehicles servicing the airport area will also run clean elsewhere in the city, thereby helping to bring down the overall aggregate of pollutants from the fleet.

Reducing emissions is important because it is much easier to retire or properly maintain a fleet of buses than to knock down buildings in the densest areas for the sake of improved ventilation of overbuilt urban areas. But the very fact that such solutions are being discussed at

MAKING A HAPPIER HONG KONG

Achieving greater happiness in a big city like Hong Kong is a challenge. The fact that it is one of the world's safest and most peaceful cities, in spite of its population of more than seven million-who are densely packed into tight living spaces while also feeling the effects of the herculean forces of globalisation, swept by the cross currents of different cultures-is already a miracle in itself. Conflicts, contradictions, contentions and confusion are all to be expected. Yet Hong Kong's happiness index has held up very well. Indeed it had risen from its trough of 67.2 in 2007 to 69.3 in 2008 much to our surprise, since the 2008 survey was conducted after the global financial tsunami had already taken place. The index has since then hovered between 70 and 71 out of 100, not at all a bad reading. As it happens, Macau's happiness index, which was based on a questionnaire modified from the Lingnan survey, was found to be very close to that of Hong Kong. The Lingnan annual happiness index survey summary result is based

on the response to one question: 'Taking everything together, if 5 is neutral, 0 is most unhappy, and 10 is most happy, how would you rate your own happiness?' The territorywide index is calculated as the average score of all respondents multiplied by 10. The 11-point scale of subjective wellbeing used in our questionnaire follows the Cantril ladder and is also used in a wellknown Gallup survey. Because the scale 0 to 10 is familiar to people, and 5 provides a mid-point, thus not forcing people to make an unintended non-neutral report of subjective well-being, and because it potentially provides far more variation in the number reported than, say, a 5-point scale or a 7-point scale, this scale is preferred. Regression analyses using the reported measures have turned up interesting and consistent results, lending credence to the measure. In 'Hong Kong's Happiness Indices: What they tell us about LIFE' (2011), I

attribute the resilience of Hong Kong's happiness index to the transformation of values and priorities among Hong Kong's population. The 'LIFE' scores (love, insight,

all is an interesting indicator of the Hong Kong public's growing desire to follow the decades of prioritising economic development over the environment with a rebalancing in favour of improving the public's health and quality of life.

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Lok Sang Ho

fortitude and engagement) of Hong Kong's inhabitants indicate that since 2008 they have become more caring, wiser, more resilient and more active. LIFE scores have been found to be very significant in explaining the reported happiness of people.

While the mind-set of people is crucial in determining their happiness, government policy and circumstances also play a role. Hong Kong's population is very keen on maintaining the rule of law. The city's inhabitants are worried about whether they can sustain their living standards after retirement, and about the cost and availability of health care. Some are concerned about the cost of their children's education; while others are anxious that their offspring may fall in with the wrong crowd. Many have reported financial pressure, a factor which has been found to undermine happiness. Such pressure is also related to the kind of housing in which respondents are accommodated. Thus effectively providing public housing and a reliable and affordable health care system will significantly boost happiness.

Interestingly, and perhaps surprisingly, Hong Kong's land policy has not only contributed to the city's high housing cost but also led to higher income disparity, and a more narrowly based - as opposed to a more diversified - economy.

Consider the fact that only 7 per cent of Hong Kong's 1,068 square kilometres (412 square miles) is devoted to housing, while only 2.7 per cent of Hong Kong's land is currently devoted to commercial and industrial uses. Hong Kong is known as a financial and commercial centre, but it devotes far more land to agriculture (6.1 per cent) than to finance and commerce (a mere 0.4 per cent)! The paucity of land devoted to economic activities implies very high land rent, and the high cost of land effectively prices many activities out of the economy. In other words, if the cost of land had been lower, Hong Kong's economy would probably have been more diversified. Many more home-grown and smaller enterprises could have existed, providing more employment opportunities to Hong Kong's labour force, and potentially boosting wage levels. Lower land costs would also have reduced the fortunes of the land-rich class, thus narrowing the income gap between the rich and the poor.

To suggest releasing more land is easy, but from where would such land be obtained? Logically, land that is ripe for economic development must be accessible, and thanks to the construction of the West Rail, and the extension of railways in other parts of the territory, many possibilities have now opened up. Much of the land around Kam Sheung Road and Yuen Long, for example, is eminently developable.

It is a pity that the SAR Government has chosen to house its headquarters in a prime, harbour-side site in Tamar in Central. It is a massive building and even though some government functions probably need to be so centrally located, many other departments do not. The SAR Government really should have taken the lead in locating more of its offices in other parts of the city.

Given the rising concern over preservation and conservation, releasing more land for development is bound to meet with resistance. The Country Park Ordinance, for example, still preserves the

same area of Hong Kong's countryside today as it did in 1976, while the city's population had grown from little more than four million to more than seven million in that time. We certainly need to be concerned about preservation and conservation, but we must also consider Hong Kong's needs in housing, in commerce and in communit uses. In principle, at the margin, the benefit of a hectare of land preserved should be equal to the benefit of a hectare of land developed. In short, policy-makers must understand that only a comparison of overall social costs and social benefits should determine how much land is to be devoted for one purpose as opposed to another.

By the same token, the government must use the same cost-benefit metrics to determine if it should increase any item of government expenditure. That is why stating that government expenditures must be no more than 20 per cent of the GDP under the dictum of 'big market, small government' really does not make sense. But clearly the presumption that fiscal policy should be sustainable is entirely correct. Hong Kong must not take the route of many democratic countries, which cater to voters' short-term benefits at the expense of fiscal sustainability.

Policies that aim at promoting happiness must further the 'public interest'. In Public Policy and the Public Interest (forthcoming) I define the public interest as 'the ex-ante welfare of the representative individual facing a public policy choice'. The 'representative individual' is a hypothetical person who has no memory of his own identity and who ponders over what would happen to him under a proposed policy, assuming that he could be anyone in society and therefore could both benefit from and be damaged by it. Thus the representative individual has no vested interest in the impending decision. He is completely impartial. He puts himself into the shoes of every person in considering a policy. If, in taking such an impartial position, we conclude that a policy is good, then the policy is said to promote the public interest

This may sound a little abstract, but it will be a lot clearer if we consider a numerical example. Suppose a serious disease befalls one Hong Kong citizen once a year. Suppose it takes HK\$ 7 million (US\$ 900,150) to treat it, and that the treatment is entirely successful. The representative individual approach would allow us to conclude that, beyond doubt, the treatment should be publicly funded. If each of us has the probability of 1/7 million in each year to contract the disease, and the governmen decides that it will not fund the treatment, we will be living in fear. If the government chooses to fund it, the cost is a mere HK\$1 (US 12 cents) per year for each of its citizens. The cost is next to nothing, but the benefit, in terms of the peace of mind generated, is certainly much greater.

Some might argue that the private insurance market should take care of this, but this is just one well-defined misfortune In practice, there are so many kinds of misfortunes that could happen, we really cannot expect the private insurance market to take care of all of them. While private insurance is certainly to be encouraged, a social safety net that takes care of people hit by different kinds of misfortunes, while

featuring designs that guard against the more obvious forms of moral hazard, will give all of us a greater peace of mind and thus more happiness.

Readers will realise that this approach is related to John Rawls, who, in his Theory of Justice (1971), proposed the 'veil of ignorance' thought experiment. Actually the ex-ante approach can be traced to John Stuart Mill in the eighteenth century. Interestingly, and remarkably, Laozi, more than 2,000 years ago, implored the decision-makers for society to consider the situation of everyone in society. Verse 49 from the Daodejing reads: 'The Sages do not have a fixed mind different from that of others. They take the mind of any of their peoples as their own mind.'

Rawls is associated with the maximin principle: maximising the welfare of the person with minimum welfare. I agree with Professor Yew-Kwang Ng of Monash University that this position is probably too extreme, even though the Rawlsian concern about the plight of the most unfortunate is well justified, not so much exclusively but along with consideration about the benefits and costs that may go to others. The best preferred policy ex ante does not have to be the maximin, but should certainly reflect the weight of discomfort experienced by those who are most adversely affected.

Hong Kong is one of the safest cities on earth, and has the potential to be one of the happiest. A better understanding of the meaning of public interest will go a long way to resolving some of its conflicts, such as finding the sites for 'not in my backyard' or 'locally unwanted land use' facilities. If we are considerate, we would offer to compensate those in those localities who might be adversely affected and go the extra mile by reducing the undesirable sideeffects of such facilities. Hong Kong needs that extra consideration to build more trust and in building more trust we will have stronger social capital to build a happier Hong Kong. Diener et al. have argued that information and analyses on subjective well-being should inform public policy. With such awareness and an awareness of the meaning of the public interest, policy-makers will have a better chance to promote happiness.

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HIGH-DENSITY LIVING IN HONG KONG

Anthony G. O. Yeh

The urban area of Hong Kong has the highest population and employment density in the world. Measured at block level, some areas may have population densities of more than 400,000 people per square kilometre. As of 2011, there are seven million people for its 1,068 square kilometres (412 square miles) of land. However, more than 75 per cent of this land comprises no-built-up areas. The high concentration of people in just a few square kilometres is due partly

to the fact that new town development did not take place until well into the 1970s and therefore most of the population (which had experienced a post-war boom in the 1950s) had to be accommodated in the main urban area along the waterfront of the Victoria Harbour on Hong Kong Island. The high price of land in Hong Kong also contributes to its high-density development. Those on low and middle incomes, and even some on high incomes, can only afford to live in high-rise buildings. Despite its very high density, Hong Kong is a still a very livable city compared to other large cities in the world.

There is a myth that high population density is undesirable and often associated with social pathologies and problems. However, only studies on animals have proven this association. There is little correlation between density and social pathology – deviant behaviour, crime and suicide - when other socioeconomic variables are considered. There are many factors affecting social pathology in which density is just one. Other factors such as socioeconomic background, educational background and the health of individuals are more important variables than density in explaining social pathology.

It is important here to distinguish between 'density' and 'crowding'. While 'density' is used to refer to the physical limitation of space, 'crowding' is the actual psychological perception of the limitation of space. Social pathology is caused by the stress and social conflict of crowding, but high density does not necessarily lead to a perception of crowding or stress. Robert Mitchell found that stress in Hong Kong may be more likely due to inadequate income or forced social interaction between non-relatives in shared flats than density itself.

Each individual may perceive crowding differently. For example, given a fixed density environment, individuals who once lived in a denser environment will perceive it to be less crowded than those who did not. Additionally, studies have shown that Asians and Chinese were found to have a high adaptation and tolerance to crowding. In Hong Kong itself, many studies have shown that a substantial proportion of the urban population did not see high density as a problem, many even preferred the presence of a large number of people. The tolerance of Hong Kong people towards high densities could also be explained by their previous living environments, since many residents are refugees and may have experienced worse living conditions prior to moving to Hong Kong.

High density has many advantages. It can create more efficient land use and is more cost-effective in providing public services and facilities. In terms of transportation, Hong Kong has one of the lowest energy consumption per capita in the world. High density maximises the effectiveness of public transport while minimising the distance between the sites of day-to-day activities. It also reduces energy and infrastructure costs.

The negative effects of density can be mitigated by the design, layout, open spaces, traffic and community facilities of both external and personal spaces. For external space, with a fixed density, people will have a sensation of less crowdedness if there is

more open space, less traffic congestion and more community facilities.

Since the 1980s, Hong Kong has emerged as a major commercial and financial centre in Asia. Office space in Central district, for example, has increased through new buildings on reclaimed land and the redevelopment of old buildings into new office blocks. Although there is an increase in employment density, there is no major increase in crowding. This can be attributed to better planning and density management. The government has encouraged the construction of public amenities in exchange for increased floor space in new buildings by granting developers a 'bonus plot ratio'. Thus many new buildings in Central have been designed to include public spaces or public passageways. Central is interconnected by a large and sophisticated pedestrian system that separates pedestrians from vehicle traffic, making travelling from one place to another more comfortable and less stressful.

The planning and development of new towns has also improved the highrise living environments of more than 50 per cent of the people living there. With a density slightly less than that of the old urban areas in Hong Kong Island or Kowloon, the more spacious layout between buildings and well-planned open spaces have made such high-density environments a far better place to live.

Over the past few years, Hong Kong has developed the following planning, design and management measures to continue improving its high-rise living environments:

External Environment of Buildings 1) Better planning and design so that buildings are positioned further apart and have more open space;

2) Improved transport management by prioritising the development of mass transit and focusing on pedestrian movement in order to keep traffic congestion in check; 3) Creation of space by fully utilising the already-existing areas within buildings, such as roof tops and podiums, and transforming them into community and recreational spaces;

4) A trend towards large-scale property developments, which allows a greater consolidation of space in order to provide community facilities and ease of movement between locales;

5) The use of new building technology and materials to break the monotony of a district, while outdoor escalators facilitate the movement of pedestrians; and 6) Public education campaigns to encourage people to contribute to maintaining a clean environment.

Interior Environment of Buildings 1) Improved building management and maintenance to create a clean and safe living environment;

2) New building design, large lobby spaces in large-scale property developments have provided a greater sense of openness in interior building environments; and 3) Escalators and express lifts to help people move more quickly around buildings.

Through better planning, design and management of the built environment, Hong Kong demonstrates how a large population can be accommodated in a

small area without impairing quality of life. Better planning, design and management can reduce the impact of high density, making the living and working environment less crowded. Citizens also have to be educated to know how to behave in public spaces in highdensity areas. Planners, architects, urban managers, communities and citizens all have to work together to make high-density living livable. Experience in Hong Kong shows that high density, if better planned and managed, can be an interesting and pleasant environment. Though an extreme case, Hong Kong can provide lessons for cities worldwide. As the world's population expands and continually urbanises, a sustainable means of accommodating the growing urban population in a livable manner will be needed.

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HEALTH IN HONG KONG: AN INTERNATIONAL URBAN PERSPECTIVE

Victor G. Rodwin

CITIES, POPULATION HEALTH AND HEALTH CARE SYSTEMS

Hong Kong stands out among wealthy megacities as having some of the best indicators of population health. Infant mortality is 3.0 per 1,000 births in Hong Kong compared to 6.2 in New York City and 4.0 in Paris, while life expectancy at birth is 78.0 years compared to 77.7 years in Tokyo and 76.1 years in Greater London (Table 1). Such indicators are too broad, however, to draw useful inferences about the performance of Hong Kong's health care system, let alone the effects of Hong Kong, as a city, on its population's health. It is difficult to disentangle the relative importance of health systems and diverse city characteristics, such as population density, levels of environmental pollution or the nature of the built environment, from the multiple determinants of health, including the sociocultural factors and the neighbourhood context of the population whose health is measured.

Health is a bit like the sky. It covers everything – longevity, freedom from disease, quality of life, well-being - yet it touches nothing and is therefore hard to grasp. Different measures of population health are influenced by genetic and environmental factors and by what the World Health Organization (WHO) calls 'the social determinants of health', which range from income, educational levels, housing conditions and nutrition to social relationships, health promotion and health care services like disease prevention (vaccinations and screening). Campaigns like the WHO's Healthy Cities highlight the importance of intersectoral strategies

to health promotion. Not surprisingly, such strategies involve long lists of recommended interventions without much guidance as to the relative importance of each one.

Because of these complexities, the field of urban health is dominated by studies of sub-populations within cities - migrants, ethnic minorities, IV drug-injecting populations and those suffering from HIV/ AIDS or drug-resistant tuberculosis. There has been less attention to comparing health care systems among cities, and evaluating the extent to which such systems and city characteristics affect various measures of population health. An alternative approach is to describe a range of health systems among cities that share a host of key characteristics to assess their performance and to speculate about the challenges they share and the extent to which, to quote Paul Valéry, they may 'enrich themselves with their mutual differences'.

Here I focus on Hong Kong's health system and the public health challenges faced by all megacities, as well as those specific to Hong Kong. In addition, I highlight some lessons from the experience of how three cities - New York, Greater London and Paris - have developed convergent strategies to protect their population's health and provide their residents with access to health care services. I conclude with some questions for urban planners concerned with cities and health.

HONG KONG'S HEALTH SYSTEM

Health status measures are crude indicators of health system performance or a city's impact on population health. There are, however, two other indicators which stand out as valid measures of a health system's performance with respect to assuring access to medical care known to have an impact on health: avoidable mortality (AM) and access to primary care. AM measures deaths before the age of 75 due to diseases for which there are effective health care interventions: disease prevention services, primary care and specialty services. Access to primary care is often evaluated by measuring the magnitude of hospitalisations for so-called 'avoidable hospital conditions' (AHC). The assumption is that if patients receive appropriate and timely health care before their conditions flare up, they can avoid painful and expensive inpatient hospital care. On the basis of these indicators, research I have conducted with Chau, Woo, Chan, Welsz and Gusmano suggests that Hong Kong's health care system is not as good as most people suppose based on indicators of its strong population health status.

Judged on the basis of AM, Hong Kong has the second lowest rate in comparison to Manhattan, Paris and Inner London. Although this is impressive, it is misleading when interpreted in light of its residents' relatively good health status (Table 1). As a proportion of all deaths, however, Hong Kong has the highest proportion of AM. This suggests that health system improvements could save lives. We found that Hong Kong also has the second lowest rate of hospital admissions for AHC, at least with respect to people aged 65 and over. Once again, when interpreted in light of the population's relatively good health status, this suggests that measures can still be taken to improve Hong Kong's health

system, particularly with respect to the many residents who delay visits for primary care and are admitted to overcrowded hospitals after exacerbations of conditions that should have been managed by primary care physicians.

Beyond such health system problems, like other world cities, Hong Kong faces similar convergent public health challenges. First, the return of infectious diseases and the emergence of new ones, such as AIDS, SARS and the avian flu virus (H5N1). Second, the risk of terrorism, including bioterrorism, and emergencies stemming from climate change, such as heat waves or flooding. Third, the challenge of overcoming barriers in access to health services for recent migrants, the poor and/ or ethnic minorities. Fourth, megacities worldwide face rising inequalities among social groups and city neighbourhoods, which are reflected in the simultaneous growth of homelessness, poverty and wealth. Finally, cities must face the health consequences of environmental pollution, which are exacerbated in Hong Kong by its topography, roadside emissions of respirable particulates, and proximity to mainland China's Pearl River Delta (PRD) region. Hong Kong faces a unique long-term challenge due to PRD's rapid growh. With its population of more than 47 million, PRD's GDP grew at an annual rate of 21.2 per cent between 1978 and 2007, more than twice the national average. For the period 2008 to 2020, the State Council's plan for PRD focuses on massive physical

* Calculations are from: Chau, P. H., J. Woo, K. Chan and M. Gusamo, 'Avoidable Mortality Pattern in a Chinese Population Hong Kong, China', J. of Public Health, doi: 10.1093/eurpub/ ckg020 (2010). For New York and Greater London, these rates apply only to Manhattan and the 15 boroughs known as Inner London. They are age-adjusted based on the US 2000 standard ** Includes three *departements* surrounding Paris, *intra-muros*: Haute-de-Seine, Val de Marne and Seine-Saint Denis. Sources – US: National Center for Health Statistics/Centers for Disease Control; London: Office of National Statistics, London Health Observatory; Paris: INSEE, Observatoire Régional de la Santé de l'Ile de France; Tokyo; Tokyo Metropolitan General Affairs, Ministry of Health, Labour and Welfare; Hong Kong: Hospital Authority.

These findings may come as a surprise for those who would immediately jump to the conclusion that high levels of population health reflect an excellent health care system and a healthy city. However, they are not surprising given that Hong Kong's health care system provides free service in public hospitals yet relies on practitioners in private fee-for-service practice for the provision of primary care. Since only around 30 per cent of the population have employer-based insurance, most of the population has to pay out-ofpocket for primary care by physicians in private practices or rely entirely on the public hospital system and its affiliated outpatient clinics where physicianpatient encounters are notoriously brief and available primary care is considered inadequate to meet the population's needs.

PUBLIC HEALTH CHALLENGES

infrastructure projects to improve integration among its nine cities, thereby creating the largest megacity-region in the world. This likely comes at the expense of public health initiatives and health care resources, contributing to the PRD's staggering public health problems and severe barriers in access to health care including:

1) Unprecedented levels of environmental pollution, which are known to increase hospital admissions for asthma and cardio-respiratory disease as well as mortality from these conditions; 2) A massive influx (20 million) of migrants, many with associated social problems;

3) Industrial accidents resulting from dangerous working conditions; 4) A high incidence of infectious diseases (including AIDS, drug-resistant tuberculosis and malaria), rising chronic disease, a high prevalence of mental problems and maternal and children's health issues; and 5) Flagrant inequalities in income

which have exacerbated barriers of access to health care. Although access is supposed to change as the new national health insurance legislation is implemented, it looms as an enormous challenge for local experts who have already attributed the labour shortages of 2004 and 2007 to inadequate social insurance cover.

Hong Kong smog levels are already affected by the environmental pollution from PRD. In developing strategies to maintain population health, planners will have to confront the challenges posed by PRD's rapid growth. In some respects, they may draw useful lessons from the successes and failures of other world cities in wealthy nations.

LESSONS FROM OTHER MEGACITIES

Experience from other megacities in wealthy nations, notably New York, London, Paris and Tokyo, is important because they have survived devastating disease epidemics in the past and have established a strong public health infrastructure. All four cities are characterised by significant disparities in income, educational attainment, unemployment rates, housing and environmental conditions among their neighbourhoods. These social determinants of health must be addressed in order to improve population health. In addition, they have important implications for how to target health protection and promotion programmes, and for how to improve emergency preparedness and communication with diverse urban populations. In New York, London and Paris public health leaders have targeted programmes for their poorest residents and for immigrant populations from around the world.

New York stands out, though, because it has the largest share of its population not covered under a national system that eliminates financial barriers to health care access. And yet it has one of the most sophisticated disease surveillance systems. Still, there is one convergent trend in public health from which Hong Kong could learn with respect to the experience of New York, Paris and London. Among those cities with the greatest social inequalities, public health leaders have recognised that the city neighbourhood is a critical spatial unit for interventions targeted to those populations at highest risk of disease. New York's Department of Health and Mental Hygiene has located three satellite offices in the highest-risk areas of the city – Central Harlem, East Brooklyn and the South Bronx. In Paris, the centrally managed *politique de ville* (policy for cities) has programmed infrastructure investments in those neighbourhoods with the highest rate of unemployment. In London, much attention has been placed, at least at the rhetorical level, on strategies to promote neighbourhood regeneration. Since cities are characterised by spatial inequalities in population and neighbourhood characteristics, this approach is not surprising. What is more, it highlights the potential of cities in the protection and promotion of population health.

CITIES AND HEALTH

There is widespread belief that the health of urban populations is not as good as that of the population as a whole. This 'urban health penalty' hypothesis is supported by a substantial body of work that documents higher rates of infectious diseases in cities than in their respective nations. Some studies have also found similar patterns for non-communicable diseases like heart disease and cancer.

Those who challenge the urban penalty hypothesis point to contradictory evidence

	Infant mortality (deaths before age 1 per 1,000 live births)	Life expectancy at birth: males (years)	Life expectancy at birth: females (years)	Life expectancy at 65: males (years)	Life expectancy at 65: females (years)	Avoidable Mortality (per 100 population aged 1–74 years)*
New York	6.2	74.5 (2000)	80.2 (2000)	17.0 (2000)	20.1 (2000)	0.80 (1999–2003)
Greater London	5.4	76.1 (2000–2004)	80.9 (2000–2004)	15.6 (1997–1999)	19.2 (1997–1999)	0.93 (1999–2003)
Paris and First Ring**	4.01	77.63 (2002)	83.13 3 (2002)	17.7 (1999)	21.7 (1999)	NA
Tokyo (23 wards)	2.8 (2001–2004)	77.7 (2000)	NA	17.7 (2000)	22.2 (2000)	NA
Hong Kong	3.0 (2000)	78.0 (2000)	83.9 (2000)	17.35 (2000)	21.53 (2000)	0.75 (1999–2003)

Table 1. Health Status Indicators in New York, London, Paris, Tokyo and Hong Kong (2000–2004).

They typically celebrate the city's vitality and capacity for innovation. For example, Metropolitan New York's economic output is greater than that of 45 of the 50 US states. Likewise, PRD accounts for 10 per cent of China's GDP despite containing only 3.6 per cent of its population. There is also a growing body of evidence in support of the hypothesis that urban health compares favourably to that of the nation as a whole. For example, life expectancy at birth is higher in New York, Paris and Hong Kong than the national average. In addition, among older people in the world cities we have studied, there appears to be an urban advantage in terms of longevity.

With respect to population health, the challenge for megacities is whether they can evolve from breeding grounds for the rapid transmission of disease to critical spatial entities for the protection and promotion of population health. We know that certain forms of suburban development that require car ownership and attract commuter populations also serve to limit exercise, facilitate obesity and even allow for a higher incidence of road rage. We know that populations in poor urban communities are disproportionately exposed to environmental toxins and that high population density can be a dangerous incubator for the spread of infectious disease. We also know that effective disease surveillance and access to health and social services can reduce the incidence and progression of disease leading to painful and expensive hospitalisations. But is this enough knowledge to address neighbourhood inequalities in health? How can it help us to design interventions in neighbourhoods with those populations that are at the highest risk?

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In our book, Health Care in World Cities: New York, Paris, London, Gusmano, Weisz and I argue that we should not overestimate the capacity of welfare states to serve those urban populations that fall through the cracks of national health and social entitlement programmes. Nor should we underestimate the ability of city governments to address social issues, including the health of their residents. Such efforts include New York's expansion of farmers' markets in poorer neighbourhoods, London's promotion of neighbourhood regeneration and Paris' systematic attention to locating local social service offices and maternal and child programmes in areas of higher risk. The extent to which such interventions succeed in meeting population health objectives is difficult to evaluate for a host of methodological and political reasons Much anecdotal evidence suggests that the proliferation of neighbourhood-level interventions matters. More importantly the convergence of efforts across cities to target neighbourhoods with populations considered at highest risk for social exclusion and disease the time is ripe for city planners and public health experts to collaborate in the design and evaluation of neighbourhood-level interventions to protect and promote population health.

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HONG KONG'S SPATIAL DNA

Hong Kong's consistent high-rise urban form and extreme population densities mark the city's urban landscape. In many other cities, a journey outwards from the centre is often accompanied by a shift towards sprawling, low-density suburban development that encroaches on the countryside. Not so in Hong Kong, which is dense and compact throughout the urban region, save for its protected mountainous areas, country parks and wetlands. This is the intended outcome of the government's tight land regulation policy and investment in a series of new towns, designed from the 1950s onwards to accommodate Hong Kong's growing population in the New Territories that separate Hong Kong Island and Kowloon from mainland China. Today more than half of Hong Kong's seven million inhabitants live in the New Territories, approximately two million (30 per cent) live in Kowloon and 1.3 million (19 per cent) on Hong Kong Island (see map below).

While for decades the city-state acted as a quasi-autonomous outpost on the edge of Asia, today Hong Kong marks the southern gateway of a highly urbanised region extending along the Pearl River from Shenzhen to Ghuangzhou – one of the world's largest and most dispersed urban agglomerations, home to almost 50 million people. With its dense and continuous urban structure, Hong Kong provides a strong regional contrast, reflecting its unique historical conditions and system of government. Around 45 per cent of Hong Kong's population live in areas with densities of more than 50,000 people per square kilometre. This is approximate to the peak densities found in New York (58,500 people per square kilometre) and Mexico City (49,000 people per square kilometre). Only 6 per cent of Hong Kong's population lives in areas with less than 5,000 people per square kilometre, compared to 36 per cent in London.

Hong Kong's high-density neighbourhoods are made up of different building types (all apartment blocks of some shape or another) that reflect the architectural tastes and technical and material capacities of successive development cycles from the early twentieth century onwards: from the earlier perimeter block 'walk-ups', to post-World War II 'slabs' and 'double-tube' towers and the more recent 'star-shaped' towers (see facing page). Apart from the different benefits that come with being located in particular central or peripheral areas and from having access to good public transport - something available to most Hong Kongers to varying degrees – each building type provides advantages and disadvantages to their residents in terms of room and apartment sizes, access to daylight and fresh air, public space and other amenities. LSE

Cities carried out an in-depth study of these typologies in 25 areas across Hong Kong to understand the differences between the ways in which high density has been designed, before selecting three of these areas for more detailed analysis of how residents feel living in these high-density environments affects their health and well-being.

Perhaps the city's most distinctive architectural form is the 'star-shaped' tower that marks the skyline of many central areas in Hong Kong Island and Kowloon, as well as the edges of the New Territories. Reaching 35 storeys in height, they are often clustered together at extremely close quarters but tend to be designed around ground level open spaces with play and sports facilities for the residents. While these developments do not create a finely structured grid pattern, the lower-rise perimeter blocks that define many of the older parts of the city do generate a continuous active street frontage. Residents of these older areas do not, however, enjoy the use of dedicated open spaces, even though small pockets may be available between blocks – often creatively adapted for play, relaxation or commerce. Although these 'walk-ups' rarely reach more than ten floors, the buildings optimise the development potential to the full - and often even more than that – by occupying the entire plot. Internally, the theme of space optimisation is visible in the informal and

often illegal sub-division of flats into smaller flats and cubicles, providing relatively affordable but poor-quality, cramped accommodation. Sham Shui Po and the surrounding areas in Kowloon concentrate many of these buildings and its residents have contributed to the focus group interviews described on pp. 44–6.

The mixed high-rise block form, where 30-storey towers co-habit with lower buildings along a distorted grid street pattern, generates some of the densest typologies in Hong Kong, with both residential and commercial activities that have come together over different time periods. The North Point area along the waterfront on Hong Kong Island, one of the city's densest spots, is defined by large scale, linear 'superblocks', some with tall buildings that take advantage of the views of Victoria Harbour, making up in part for the absence of well-designed public open spaces at ground level. In contrast, many of the 1960s and '70s developments outside the central districts of Hong Kong Island and Kowloon incorporate open spaces enclosed or surrounded by residential towers which are designed as 30-storey double tubes or ten-storey slabs.

The research on pages 34-43 has been led by **Jens Kandt**, Researcher, LSE Cities , London School of Economics.



Source: Hong Kong Planning Department ,Hong Kong Census and Statistics Department, University of Hong Kong

STAR-SHAPED TOWER



1 Tai Koo, 211,457 pp/km²





2 Tsuen King, 261,407 pp/km²



PERIMETER BLOCKS



Sham Shui Po, 113,747 pp/km²

MIXED HIGH-RISE BLOCKS







35



5 North Point, 129,442 pp/km²

DOUBLE-TUBE TOWERS



7 Tai Po, 83,992 pp/km²







6 Sai Yin Pun, 151,501 pp/km²

SLAB BLOCKS



8 Fuk Loi, 64,600 pp/km²



MAPPING SOCIAL DETERMINANTS



From a social point of view, Hong Kong's inequalities are spatially visible. High-income groups are more likely to live on Hong Kong Island whereas low-income groups are more likely to live in the Western and Northern New Territories. In Kowloon, however, the spatial patterns of deprivation and privilege are more fine-grained. The Kowloon district of Sham Shui Po, home to comparatively deprived groups, borders the fairly wealthy north of Kowloon City district.

Hong Kong's population is ageing. The chart on the near right shows that the proportion of the population over 65 has risen steadily over the last 30 years, and now stands at 12 per cent. Today, young people under 20 make up just 20 per cent of the population. The combination of Hong Kong's ageing population and an increasing trend of older people living alone mean that Hong Kong's population is becoming ever more vulnerable. This phenomenon is concentrated problem in Kowloon, Hong Kong Island and the central New Territories, where the share of single elderly households is greatest, as can be seen from the bar chart on the far right.

AGEING SOCIETY



VULNERABLE HOUSEHOLDS



Hong Kong's land regulation policies and high-density development has had significant impacts on the level of crowding amongst its housing stock. On average, a Hong Kong resident has 13 square metres (140 square feet) of living space available to them, a quantity that is an order of magnitude lower than those enjoyed by the residents of cities with similar levels of income such as London or even New York. The number of rooms per person across the city – a proxy for overcrowding - suggests an unequal spatial pattern that closely mirrors the distribution in income and housing tenure. In the dense central areas of Hong Kong Island, for example, the number of rooms per person is higher where the population is richer. As one might expect, ownership rates in such areas are also significantly higher: almost 60 per cent of households living on Hong Kong Island own their property, while this share is significantly lower in parts of the urban region where there are more deprived neighbourhoods, such as in Kowloon and central New Territories. Public housing makes up 31 per cent of the overall housing stock in Hong Kong, thanks to government's

substantial housing programmes. This is much higher in Kowloon and the southern parts of the New Territories than in Hong Kong Island, as a result of the decision to deliver the majority of public housing through the creation of new towns. While low income is one important social factor in determining vulnerability in relation to health, living in poor housing conditions adds another important burden, and one which is disproportionately felt by low income residents.



CONCENTRATION OF PUBLIC HOUSING

share of public housing (2006 50%



REGIONAL VARIATION OF OWNERSHIP



MAPPING HEALTH OUTCOMES

CHILD MORTALITY



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Child and infant mortality are two of the most frequently used indicators to assess health performance internationally. In this regard, Hong Kong has achieved substantial improvements over the past 30 years, as is clear from the line chart on the near right. Child mortality (death before a child's fifth birthday, and here migration-adjusted) has decreased from 13 in 1980 to less than four deaths per 1,000 live births in 2009. Infant mortality is also at a very low level, at two deaths per 1,000 live births, compared to five in London and New York, 13 in Mexico City. Improvements have been made in all parts of the urban region with little overall spatial variation in levels of child mortality. Where they do occur, however, high child mortality rates are spatially concentrated in particular parts of the New Territories, where they are between 17 and 35 deaths per 1,000 live births, similar to the 33 deaths per 1,000 live births in Johannesburg. While rates are found to be considerably higher in peripheral locations in Hong Kong, it should be borne in mind that the number of births among Hong Kong residents in some of these areas is also extremely low, which is likely to make these statistics prone to greater annual fluctuation. The strong relationship between deprivation and child mortality is revealed by the bar chart on the far right, which indicates that locations of high child mortality are overwhelmingly likely to be those of high deprivation. In Hong Kong's most deprived areas, child mortality rates are more than 1.5 times the city figure.

IMPROVING LIFE CHANCES



Mortality figures are migration-adjusted, that is, records of residents living outside Hong Kong have been excluded. The figures may therefore be different from official statistics.

LINKING HEALTH AND DEPRIVATION

index child mortality rate Hong Kong=100 (2006)



Premature mortality also varies significantly across Hong Kong. Interestingly, there is no clear pattern visible between Hong Kong Island, Kowloon and the New Territories but, as in the case of child mortality, significant differences are present at smaller scales, closely mirroring patterns of deprivation. Within Kowloon, Sham Shui Po, the northern part of Kowloon City and Whampoa display significant differences. Overall, premature mortality varies significantly from 113 deaths per 100,000 people in the poorest 20 per cent of areas to 65 deaths per 100,000 people in the wealthiest 20 per cent of areas. Pre-mature mortality is higher in high-density quintiles (45,000 people per square kilometre or more) and lower in the lowest-density quintile (up to 4,000 people per square kilometre). It is lowest of all in the density band of between 4,000 to 17,000 people per square kilometre (second quintile) - the density band that also happens to include privileged areas most often.





Premature mortality refers to persons (including children) dying before the age of 75. It is often used as an estimation of health status, as well as to calculate 'years of potential life lost'. In Hong Kong, premature mortality is extremely low by international standards, at 216 deaths per 100,000 people (but it is measured differently in different countries). This strong performance conceals a significant gender divide: the premature mortality rate is twice as high for men (305 deaths per 100,000 people) as it is for women (134 deaths per 100,000 population). While a gender gap is common throughout the world, the ratio between men and women's premature mortality has widened in Hong Kong from around 1.5 to 2.3 since 1981.

MORTALITY AND DEPRIVATION



Mortality figures are migration-adjusted, that is, records of residents living outside Hong Kong have been excluded. The figures may therefore be different from

LINKING HEALTH AND DENSITY

standardised mortality ratio of premature deaths (Hong Kong=100, 2006)



HIGH DENSITY FROM THE GROUND

Following the city-wide analysis presented in the preceding pages, we now move to a fine-grained analysis of Hong Kong's complex urban fabric. Three of the city's denser neighbourhoods - Whampoa, Sham Shui Po and Sai Ying Pun – are the subject of spatial and social scrutiny by interdisciplinary teams from LSE Cities and the University of Hong Kong.



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Text: Joshua Bolchover Images: Joshua Bolchover, Hui Kin Fung Keith, Ngan Ching Ying Sunnie, Chan Wang Fung

WHAMPOA

At the centre of Whampoa Garden Estate, close to Hung Hom station in the southeastern coast of Kowloon, is a boat; dry docked and stranded in a concrete sea. This is 'The Whampoa', a fibreglass shopping mall with seafood restaurants, a Jusco department store and one of seven themed shopping experiences that form 'The Wonderful Worlds of Whampoa'. Most of the shopping worlds, however, are simply broad-brush themes for ground floor podium and underground levels that form the bases for residential towers. There are total of 12 development areas containing 88 tower blocks, 10,431 units and a total population of around 50,000 people. The residents are mainly middle-income families with the flat sale price being approximately US\$1,028 (HK\$8,000) per square foot in 2011. A three-bedroom, 93-square-metre (1,000-square-foot) flat would therefore cost around US\$1.13 million (HK\$8.8 million) to buy or US\$3,200 (HK\$25,000) a month to rent. However, this population also has access to 426,720 square metres (4.6 million square feet) of commercial activity, forming a staggering 85 square metres (915 square feet) per person, which is approximately the same size as a small residential unit.

The estate was developed by the private developer, Hutchison Whampoa, which is part of business tycoon, Li-Ka Shing's, Cheung Kong Group. Hutchison Whampoa is the result of a series of business amalgamations and acquisitions that originated from the operator of the Hong Kong and Whampoa Dock in 1863. These docks, located on the South East coast of Kowloon were closed in 1985 with the new estate being completed in 1991. Unlike other dockland developments around the world there is no trace of the area's previous industrial heritage. This was erased and the docks were filled in. The new estate is like a condensed version of Le Corbusier's Ville Contemporaine (1922), a developer's utopia of a happy, mixed-use populace complete with 188,975 square metres (188,975 square feet) of open space, 300 shops, kindergartens, elderly centres, recreation facilities and a sea promenade.

The Podium levels are accessed by stairs connected to the street or via the external courtyards of the shopping centres, and are linked together with bridge walkways. They contain seating, gardens, playgrounds and badminton, tennis and basketball courts and provide access to the residential towers. Densely packed, the towers' snowflake-plan provides an increased surface area for light and ventilation through four deep vertical light-wells. The majority of residents here commute to work. Although not directly connected to the Mass Transit Railway (MTR), the area is served by buses, mini-buses and taxis, with a free shuttle bus operated by the shopping centre that connects nearby districts. The area is close to Hung Hom station with trains to the New Territories and to mainland China and a ferry runs to North Point on Hong Kong Island.

The area feels spacious and relaxed despite the density of population. However the mono-culture of shopping operated by a single corporation sets limits on the types of commercial and leisure activities that fit within their controlling remit. The attempts at 'themes' to provide further identity and diversity ultimately are meaningless - they are the same types of spaces and often sell similar products. Nevertheless this is Hong Kong and this development fits very well with the desires of the middle class: clean and controlled; with air-conditioned malls and open recreation spaces in equal abundance and linked effortlessly to lots and lots of shopping.



SHAM SHUI PO

There are two main reasons to go to Sham Shui Po: to buy fabric or electrical components. Lace, thread, clasps, zips, buttons, and any other accoutrements of clothing manufacturing, can be purchased and lights, fuses, wiring, speakers, monitors and other technical gadgets can be bought in the market thoroughfare of Ap Liu Street. The textile trade originates from the area's historical development in the 1950s as a sub-production area for the garment industry, containing smaller factories for finishing or producing small machined parts. Like many of Hong Kong's industries these have now shifted to China, however, the commercial aspects have remained. Located close to Boundary Street, the demarcation between the British Colony and the mainland from 1860–98, Sham Shui Po was renowned for border trade and smuggling, and has been a popular settling place for new migrants since the 1950s.

Today the area is well connected by the MTR and a plethora of bus routes and smaller minibus companies that link to Kowloon, the New Territories and Hong Kong Island. Exiting from the MTR you are subsumed by a barrage of signs, street vendors, shops and food stalls, extending in layers of activities from shops at street level. This commercial organisation has evolved from the traditional Tong Lau or Shop House, which had an arcade at ground level, creating a covered pedestrian walkway along the street.

Each urban block was split into two, allowing a service alley to run between the blocks for ventilation and light. The 1950s brought a new building ordinance that raised the allowable building height in response to the need to create more housing for new migrants. The original Tong Lau were replaced, but certain features remained: the covered colonnade took the form of a cantilever, maintaining the set back and protected public area, and the basic footprint of the urban grid was unchanged. At street level the shops are interspersed with staircases that connect to the residences above. The number of inhabitants per flat varies drastically from a single family paying US\$260–510 (HK\$2,000–4000) per month to the flat being divided into six rooms of 4.5-6 square metres (48-641/2 square feet) per room at US\$193 (HK\$1,500) per month, which are typically occupied by elderly couples or poor migrant families. Unimaginably the rooms are sometimes further subdivided into units of just 2 square metres (211/2 square feet) made up of simply a door opening to a bed frame. Even these can be vertically broken into two stacked units, known as 'cage homes', which offer beds for US\$115 (HK\$900) per month and can lead to densities of 40 people per flat. Advertised illegally through signs plastered at the staircase entrance these rooms can also be rented per hour and sometimes used as one-room brothels or 'love hotels'.

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The residents of Sham Shui Po are relatively poor and elderly, with 28.9 per cent falling below the poverty line and 20.2 per cent over the age of 60. Public space is squeezed in where possible: a few benches outside of the MTR station; small pocket parks in the rare gaps between buildings or, bizarrely, a strip-park running between the traffic lanes of Nam Cheong Street, which is approximately 2.5 metres (8 feet) wide by 700 metres (2,296 feet) in length and fairly devoid of activity. This was formerly a drainage channel, or *nullah*, probably created to manage the water flow following the dramatic destruction of three hills and consequential land reclamation from 1912-29 in order to create the territory of the district itself.

Like many of Hong Kong's older districts, Sham Shui Po's urban fabric is being gradually replaced through realestate pressure and by the government's Urban Renewal Authority, which is replacing blocks designated unfit for living. Displaced residents relocate to other areas through compensation schemes, or take up places in public housing estates. Of course this is a desire for many residents given their inadequate living conditions, yet the strong ties of the social network of the neighbourhood may erode.

Text: Joshua Bolchover

Images: Joshua Bolchover, Hui Kin Fung Keith, Ngan Ching Ying Sunnie, Chan Wang Fung

00% residenti Mixed residential/ 100% commercia Public facilities, transportati ated 36m² per flat: estimated 50m² per 10 people pe temporary structures storages; ollecting cardboards washing vegetables; cutting hair etc.

SAI YING PUN

Sai Ying Pun is one of Hong Kong's original settlement areas. As early as 1841, the British military decided it should be one of two strategic locations for a military base, with the other being close to the Albany Nullah and what is now presentday Central. A rough road, laid out by army engineers, connected the two sites and later became the main coastal thoroughfare of Queen's Road. The barracks at Sai Ying Pun soon attracted further settlers through the construction of a large warehouse or 'Godown' by Jardine Matheson & Co., initiating the development of an informal Chinese settlement of shopkeepers and labourers. Within the same year, A. R. Johnston, Hong Kong's Deputy Superintendent at the time, began land subdivision, setting up plots for sale that ranged in scale from marine lots with waterfront access, to denser town lots, and more spacious suburban lots. In Sai Ying Pun an orthogonal grid was established with three main vertical streets, aptly named Eastern Street, Centre Street and Western Street, running north-south from the water up to the hill and crossed by Queen's Road, First, Second and Third Street and at the top edge of the square, High Street. Owing to the extreme topography, land subdivision was organised around a terraced and stepped grid, which soon became full of three- and four-storey tenement buildings, interspersed with a fine network of back alleys and lanes. This organisational form of the settlement in the latter part of the nineteenth century has formed the origin point for all further transformation.

This was challenged in the post-war period due to the double pressures of bomb-damaged buildings and a massive increase in population. Temporary settlements and illegal roof structures were constructed to meet the demand and it wasn't until the 1960s and '70s that the smaller tenements were replaced with five- and six-storey flat-roofed shophouses. Despite the pressures, the small plots remained until the late 1970s and '80s, when real estate profits drew investors who bought up several plots at once to develop large, pencil towers of 20 to 30 storeys on three-storey podium bases. These linked processes of land accumulation and the gradual reduction of building parcels have been accompanied by a shift away from small-scale owner-operated businesses to a residential, middle-income community working in the nearby business districts.

Change is likely to continue apace in Sai Ying Pun. The Island MTR line is being extended to the neighbourhood, and a public street escalator is under construction on one of the area's three main uphill streets. At the same time, Hong Kong's Urban Renewal Authority is buying up properties in the area, replacing small plots with large towers. The Island Crest development, for example, replaces 30 buildings by two high-rise towers sitting on a three-storey podium. It offers flats of much larger sizes than in older buildings (365 square metres/1,200 square feet rather than 152 square metres/500 square feet), which sold for approximately US\$2,150 (HK\$16,737) per square foot in 2011.

These changes in the urban fabric of Sai Ying Pun are removing its network of smaller-scale voids and cracks, which provided space for social interaction, workspaces, drying areas or simply for wild plants to grow. Still, the neighbourhood remains one of Hong Kong's most complex and dramatic. The vertical cuts down to the sea between precipice buildings, dilapidated walls and the indestructible banyan tree, whose roots remain firmly wrapped around many older buildings and walls, offer glimpses of the forces that have transformed Hong Kong from a military outpost into one of the densest urban agglomerations in the world.

Text: Joshua Bolchover

Images: Joshua Bolchover, Hui Kin Fung Keith, Ngan Ching Ying Sunnie, Chan Wang Fung





LIVING AT DENSITY: VOICES OF HONG KONG RESIDENTS

hat do Hong Kong residents think about their living environments? Do they consider them healthy? How do they feel the density and the design of their neighbourhood impacts on their health and well-being, if at all? LSE Cities and the University of Hong Kong's Hong Kong Jockey Club Centre for Suicide Research and Prevention conducted interviews with groups of residents in different parts of the city. The aim of this study was to offer more subjective perspectives on the spatial dynamics of health and well-being in one of the densest cities in the world, giving voice to individual

residents that goes beyond the spatial

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analysis of quantitative indicators. During the summer of 2011, researchers met with a selection of 32 young, middleaged and elderly people who lived in three distinct areas to get a sense of how different age groups responded to their high-density environments. The first group lives in Whampoa, a relatively new, middle-class estate on the south coast of Kowloon with a residential density¹ of 74,200 people per square kilometre. Residents from Sai Ying Pun, one of Hong Kong's original settlement areas on Hong Kong Island, with a residential density of 79,200 people per square kilometre, made up the second group, while the third was comprised by inhabitants of apartments in Sham Shui Po, Kowloon, a busy shopping and lowerincome residential district of older, 'walkup' buildings, with a very high residential density of 92,200 people per square kilometre. While some of the residents live in extremely tall towers more than 30 storeys high and others in older, cramped ten-storey blocks arranged along traditional streets, all three areas in Hong Kong have density levels that are higher than New York's most concentrated neighbourhoods in the Upper East Side and more than four times as high as the densest areas in London.

The focus group participants were asked to discuss a wide range of issues, including their experiences of living in tall buildings, how they use private and public space, where and how social relationships were enacted, how they rated their neighbourhood in terms of access to amenities and transport, how easy it is to get to work and how pollution and space constraints affect their daily lives. What follows is an initial analysis of their discussions, which begins to develop a narrative of what it means to live at high densities in Hong Kong. Perhaps the overall sentiment is best captured by Shan, an 18-year-old student living in the new development in Whampoa, who states:

Although Hong Kong is dense, it is still convenient. We don't have to spend a long time travelling to the destination. Amenity-wise ... it is good enough.

Or by Ms Fok's observation, as a 53year-old retired mother living in Sai Ying Pun, that:

Time matters in Hong Kong.

On balance the responses from all three areas suggest that Hong Kong's 'convenience' and accessibility are highly valued both by young and old residents. 'Convenience' was repeatedly used to describe the positive trade-offs that Hong Kong's dense urban fabric affords to its residents. Public transport is seen as being generally very good - reflecting the city's highly efficient and extensive Mass Transit Rail (MTR) and bus system - and the range and quantity of services and amenities was considered excellent, including restaurants and canteens serving food from all over the world, swimming pools, badminton courts and sports centres, clinics and hospitals, as well as libraries and community centres. It is the 'many Hong Kongs' - the great range of amenities and services provided by even the smaller neighbourhoods – which the residents of Whampoa, Sai Ying Pun and Sham Shui Po seem to value the most.

The three neighbourhoods provide different advantages to residents in terms of convenience and accessibility. Located across the bay from Hong Kong Island in Kowloon, residents of Whampoa are attracted by the spectacular views and access to the harbour and also by the convenient access to a wide range of local amenities, including schools, private clinics, Chinese herbalists, restaurants and shopping malls. The design of multi-storey apartment blocks with ground-level gardens and badminton courts were seen as positive assets. Despite not yet having its own MTR station, local residents considered Whampoa to be highly accessible even though the recent loss of the cross-harbour ferry connection to Central Hong Kong's primary business and finance district - was regretted by the young people. As 18-year-old Shan says: 'There is no traffic jam in the sea.'

In the much older and poorer district of Sham Shui Po, in northwest Kowloon, residents appreciate the presence of a nearby MTR station and the many bus connections: Aunt Kwok, a disabled and retired 73-yearold says, 'I think we have the best transport here. I moved into the area here just because of this.' Immediate access to goods, shops and markets in a relatively low-cost area is seen as an advantage, given the availability of 'cheap and fresh food, groceries [and] affordable rents', noted by Mr Fung, a 63-year-old resident of the area. While Sham Shui Po is often defined by its relatively out-dated and often overcrowded walk-up blocks, it clearly also provides amenities and connections that its lower-income residents value.

In the historical district of Sai Ying Pun on Hong Kong Island, residents appreciate its proximity to a number of civic amenities such as schools, markets and libraries as well as easy access to the extensive job market provided by the offices and shops of Central. The presence of open public spaces was a major talking point for focus group participants, including the King George V Memorial Park and the University of Hong Kong, with their extensive grounds and facilities, accessible to the public, which provide open space and clean air right at the heart of this highly built-up district of Hong Kong. Located in a part of the city with steep gradients, residents (especially elderly ones) regretted the lack of a local MTR station, though they appreciated good bus services to Central. Residents were clear about the trade-offs of living in a relatively congested yet well-connected area. In Whampoa, Edmond, aged 44 and self-employed, offered his analysis of the trade-offs facing all Hong Kongers:

You cannot have your cake and eat it ... if you live in Tai Po [in the **New Territories**], there are more trees and plants, but it takes you longer to travel to Kowloon. You've got to make a choice: either a better environment or a more convenient place.

While to varying degrees, Hong Kong's 'convenience' comes at a cost in terms of living and leisure spaces, it was nonetheless striking to hear that, despite these trade-offs, some focus group members dreamt of living above where they worked in order to save travelling time. Others aspired to living in larger houses, a sentiment expressed by Mrs Shek, a 45-year-old mother living in Sai Ying Pun, who noted, 'of course I wish to live in a house, when I went to Canada, I was envious of their houses ... sure! There's a front yard and backyard for planting, and the air is good ... this is a dream!' Such dreams seemed to be out of reach for many residents, a problem exacerbated by the recent property price rises in Hong Kong. As Helen, a 33-year-old woman who works in finance and lives in Whampoa, said: 'It's tough for people like me ... to buy a larger flat ... It would be easier to achieve this dream in the old days because the property price now is really high.' As in other cities, income inequality is reflected in the property market, reaching the sort of extremes identified by 22-year-old Peter, who works in a luxurious Kowloon development and lives in Sham Shui Po: 'Some people own an indoor 800-square-foot swimming pool that is eight times as big as my apartment. We are

just talking about their swimming pool.' A good location helps adults to juggle demanding jobs, long working hours and family and domestic responsibilities. Middle-aged people tend to choose a location that is close to their children's schools and their place of work, often sacrificing space and comfort in the process. Ms Fok, the 53-year-old retired mother living in Sai Ying Pun, says, 'We have kids,

and we have to cater for their needs. My daughter studies here too, and she said it's very convenient because she works in Central. It only costs HK\$2 (US 25 cents) to travel by tram. She goes to work at 9.30am, and she could get up at 8.30am ... so she thinks it's ok.' She concludes that, 'time matters in Hong Kong'; a comment that seems to capture the particular nature of this city's socio-spatial character.

The focus group discussions brought connections between these Hong Kong residents' demand for space and work pressures into sharp focus. It was clear that many of the middle-aged residents were so busy working that they spent little time at home. As a result, the size of their living space and the quality of the local environment were not such a high priority as they might otherwise have been. Victor, a 46-year-old manufacturing worker living in Whampoa, explains: 'I have long working hours so when I go home, I mainly want to get myself rested'. This is a view echoed by Mrs Shek, who commented: 'I may choose convenience because ... honestly, when I go home after work, it's dark outside, so no matter how wonderful the views are, I can't enjoy [them].'

For the most deprived Hong Kongers, however, the trade-offs between convenience and living environment can mean living in extremely cramped conditions - in subdivided or partitioned flats, cubicles or even 'cage homes'. The older buildings of Sham Shui Po have in many cases been adapted in this way to accommodate as many tenants as possible. For Aunt Kwok the stress and anxiety of ending up in such conditions is palpable. 'Those subdivided flats are not suitable for me', she states, 'all those rooms have two raised-levels [in order to hide the re-adjusted pipes and ducts], I cannot raise my legs [to move from one level to another] ... For those flats that aren't subdivided, people are not willing to rent them to a single old-lady ... I cannot find [one]. My head is aching.'

But lack of space at home does not just trouble those at the lower end of Hong Kong's social scale, as Mrs Shek notes:

I think it directly influences our living and our social lives ... I don't really want to have babies too, so I just have one ... my son is 17 years old ... our home is too cramped. His own space is just his room, he could reach it one step after entering the flat, and one more step to his desk, another to his bed.

Despite the rationalisation of the choices they make, living in such small spaces was a cause of concern for most of the Hong Kongers we spoke to. When Lemo, a 31-yearold graduate student, moved to Sai Ying Pun from mainland China, he changed his social habits to adjust to Hong Kong's smaller living spaces. He explained: 'In Hong Kong I won't ask to visit my friends' houses because our flats are too small, I don't even know where to place my legs ... my friends from the mainland came to my place and they asked whether they could sleep on the floor and I said no, so I won't invite them to my place. I've formed this habit since I came to Hong Kong.' Mrs Fok, the 53-year-old retiree living in the same area, also changed her



Living at high-density affects the daily lives of urban dwellers across Hong Kong's diverse communities.

behaviour after an embarrassing experience some years ago: 'I wasn't experienced and I was so happy that I invited my colleagues to my home. The gross floor area was merely 300 feet, it was so cramped that ... everyone sat in rows as if they were at the cinema ... they said I had overestimated myself because I invited my friends to such a tiny flat, so since then I've never invited anyone to my home.' Apart from the impositions on individual habits and routines caused by the physical constraints of small apartments, impacts on patterns of socialisation with friends and family were also clearly felt by many residents, whether old or young, newly arrived or long established.

The physical proximity to neighbouring properties was felt by many residents to have negative consequences on the quality of life

within their already small living spaces, requiring them to further adapt to their micro-environments, in particular to defend their sense of privacy. As Mrs Ng, a 58-yearold retired woman living in Sai Ying Pun explained: 'you can touch the flat next to yours if you reach out your hands'. Adapting to the proximity of others involves closing windows and curtains in order to avoid seeing and been seen by neighbours, to avoid watching their TVs, smelling their food or hearing their quarrels at night. Helen, the Whampoa resident, says, 'I have to draw the curtains when I'm at home, because it really makes me uncomfortable. It's not a matter of whether I can do what I want, but it's just too close to the next flat that I can even notice [when] they walk, sit and watch TV.' Apart from the obvious amenity value afforded

by better views and daylight, higher-level apartments are often valuable and desired because of the relative privacy they afford residents. Phoebe, a 29-year-old resident of Sham Shui Po says, 'I [would] prefer living on a higher floor ... You get a better view. It's not just about that. It's also about the distance between you and your neighbour, the sense of spaciousness.'

Focus group participants reported that, on the whole, there was little interaction with immediate neighbours, and that residents preferred not to intrude on each others' private space. Phoebe explained it further, 'Hong Kong people are quite cool and detached. People seldom greet their neighbour because they are quite concerned about their private space. People may find it disturbing.' Ivan, Anthony and Michael,

three young residents of Whampoa, discussed the same issue. Ivan said, 'it's difficult to ask for their names. My dad would ask ... it's never like the old days,' while Anthony felt that the interaction between neighbours 'cannot apply to the Hong Kong context and culture. We would not say "hi" to others on the street. It's weird.' Michael elaborated, 'if someone says "hi" to me [in the hallway], I will be scared'. The contradiction between physical proximity and social distance seems be captured by the observations of these young Hong Kong residents.

Environmental problems, especially noise and air pollution, loom large in the concerns of this group of Hong Kongers, and in many cases cause them to further protect and enclose their already small living spaces.

Lemo, the 31-year-old graduate student living in Sai Ying Pun, provides a clear explanation for his desire to go high, stating that 'the air is poor from the first floor to the fourth floor because the roads are so busy and the noise pollution is serious ... so in Sai Ying Pun I would choose [to live in] highrise buildings'. Residents are often compelled to close their windows or buy extra thick curtains to escape from the pollution, despite the stifling temperatures that accompany the summer months in Hong Kong. Ms Shek notes that 'there are ways to escape from noise ... any method will do', while Ms Kwong, a 61-year-old living in Sham Shui Po explains, 'if the neighbouring flat has their air conditioner turned on, the hot air from their air conditioner would affect you. So everyone now has to turn on their air conditioners. Otherwise you'll have to tolerate the hot air ... The air quality is not so good and I always cough.' Such comments give a sense of how closely built form, health and well-being relate in these high-density living environments.

Residents of Sham Shui Po, the most deprived and dense of the three neighbourhoods, seemed to experience particularly severe environmental problems. Mr Au, aged 65 and retired, explained: 'If you want to know whether it's dirty here, you just place a fan at home, and if it doesn't turn dusty after one week, it means the air is fresh. But if it turns dusty, it means the air is not good. It's that simple ... I have to clean mine every week.' He connected the problem of air pollution to the planning and design of Hong Kong's high-density environment, saying, 'There were only four buildings in Un Chau Estate. Now, the air-flow is blocked by the "walled buildings" ... You think of it, Feng Shui is not something useless ... It is so hot after the south [passage] was blocked ... It wasn't so dusty in the past. The environment keeps deteriorating.'

The effects of living in small areas and in close proximity to others can be better understood if we also take into account how residents look to 'compensate' for their limited privacy by creating their own private space within the public realm, making use of the street, restaurants, shopping malls and sports facilities both for meeting friends and for having time to themselves. As Mrs Shek from Sai Ying Pun says,

People would chat on street at night ... especially teenagers, [who] don't have their own space at home, it isn't big enough ... they all grab a beer and sit in front of Kau Yan [school].

Edmond, the 44-year-old living in the new developments in Whampoa, reflected, 'maybe people in Hong Kong are used to not having a private space, so we don't mind not having one ... and we're not desirous of it ... when you really need a private space you can actually create one ... even a 24-hour Cha Chaan Teng [Chinese eatery] can be a private space'. For Helen, the finance worker living in Whampoa, the main thing is getting out of the house: 'I'm usually in Whampoa ... we go to have something to eat ... We also go to the cinema ... Yes, karaoke ... swimming ... eating ... cinema ... I don't like staying at home so I just wander around in Whampoa.' Many options are available. As Mr Kwok, a retired man from Sham Shui Po, says: 'I like

playing horizontal bar and gymnastics and I can do that in Un Chau Estate, where I live ... Yes, there are many kinds of activities provided ... There is the library, basketball and squash courts, as well as table tennis.' Some places used for exercising turned out to be quite surprising. Ms Fok, the 53-yearold retiree from Sai Ying Pun, explained how the nearby Cargo Working Area is used at night, when it is empty, by elderly people for exercising. She says, 'at least that is really a public space where you can have some activities there ... how could you move in your tiny flat? You couldn't!' For many of the young residents, who are accustomed to contemporary technologies, listening to music through earphones contributes to the creation of a personal space, even when surrounded by other people. Cherry, an 18-year-old student living in Whampoa, said, 'it's like quarantining myself ... we do not bother each other even though we sit there next to each other ... no one can intrude' However, most of the focus group

participants from the three areas agreed that Hong Kong and its services, public spaces and facilities were overcrowded to the point where they could not access them or where they had to adjust their behaviour significantly in order to do so. Steve, a 31-year-old worker living in Whampoa, explains the phenomenon clearly: 'When you shop and eat in a particular community ... if there are a lot of people, you may have to queue, and then you don't want to shop anymore. Like if you were at a crowded supermarket, you would lose the intention to shop. When you dine out, if you had to wait, you would lose the intention again.' In order to avoid this, residents time their visits to particularly busy areas or shops carefully. Those who can afford to, join private sports clubs and gyms in order to avoid having to battle for access to a public badminton court, where sessions often get booked up within five minutes of reservations opening.

While the 'bustling' nature of Hong Kong seemed attractive to some residents, there was an overriding sense among most focus group participants that the pace of life and fierceness of competition in Hong Kong was putting increasing pressure on their capacity to cope with the demands of life. As Peter, the 22-year-old living in Sham Shui Po and working in Kowloon, explains:

The pressure at work ... competition ... I think most people in Hong Kong are suffering from some mental problems such as pressures or stress ... Maybe we are more stressed because we live in a financial centre.

The older focus group participants compared Hong Kong to the 'old' (colonial) days, finding life harder today and worrying about the pace of change. As Mr Au, the 65-year-old retiree from Sham Sui Po, says of the change in labour conditions: 'Back in the old days during the colonial period, it was not too hard to earn a living, as long as you were hard-working. Right now, you can't get a job even if you are hard-working ... Back in the old days, who would collect the garbage and newspapers from the streets? No one would do that during the colonial period. Now you can see many old ladies and younger ones doing so.'

In Sai Ying Pun, the urban renewal programmes underway involve the loss of familiar places and loved restaurants. Parks and playgrounds are being turned into construction sites for the MTR, or replaced by high-rise and high-end hotels and apartment buildings. Mrs Chan, a 65-yearold widow who lives in the district, says, 'I can't see anything beneficial yet [about urban renewal] ... If they build up new ones, the population will increase. There will be more people buying food. Then ... I'm affected [by lack of food].' Mr Leung, a 63-year-old widower, fears a degradation of his living conditions: 'When they finish building at the place of the Bank of East Asia, I won't have much space around my home ... [I'm] unlikely to be able to look at the sea [from my home]. When they finish building,

maybe it'll block the view.' For younger people, the pressures of work often felt overwhelming. Marcus, a 27-year-old graduate living in Sham Shui Po, said, 'the mental stress is unimaginable for those who sleep for only three hours every night after tedious work ... you cannot just be an average person or you will be eliminated. You either outrun the competition or you lose. You don't really have a choice.' Young people in Whampoa felt the same. As Shan, the 18-year-old student, said,

A healthy city is not all about economy and finance. The pace of living is too fast and it's hard to breathe. People need some time to relax and cool themselves off from the pressure ... You know, people with pressure makes the city unhealthy ... healthiness includes physical and mental [health].

Victor, the 46-year-old manufacturing worker living in Whampoa, concurred: 'Of course bad air quality caused us [to develop] nasal allergies, but what influences the health of Hong Kong people most is the pressure from work ... it doesn't matter if one is living in a tiny flat, but the pressure from work and the long working hour directly worsen one's health.

The six focus groups held with the 32 residents of three neighbourhoods provide a sense of the ways in which density is felt to impact on health and well-being by residents of different areas and different ages, and this, in turn, begins to make clear how density might be better designed. But more than anything, the discussions make visible the multiple and complex ways in which Hong Kongers themselves make density work, by adapting their behaviour and negotiating their environments. As such, this qualitative research brings to light the many interactions and co-dependencies between the physical and the social environment in some of Hong Kong's dense neighbourhoods.

Looking more closely, it is also possible to identify some clear differences between the views and experiences of different age groups and residents of different areas. Concern about the increasing pace of life in Hong Kong and the fierce demands of competitive working life was strongest amongst the youngest participants (aged 18-29). For middle-aged participants (aged 30–59), these concerns were further complicated by the need to juggle working

and family life, especially in small living spaces. Comparing Hong Kong to the colonial days, older participants (aged over 60) felt times were harder today, and felt a sense of loss as the development of Hong Kong continued. Amongst the residents of the three different areas, it was clear that residents of Sham Shui Po experienced their local environments as being more unhealthy than residents of Whampoa and Sai Ying Pun - relatively more affluent areas with newer and higher-quality buildings, and less polluted environments. These differences emphasise the ways in which Hong Kong residents of different ages and generations relate to their urban environment, and start to make visible the ways in which urban design and planning, density and health and well-being interrelate.

Perhaps the clearest message emerging from these findings is that Hong Kong is strongly valued by its residents for the convenience and opportunities it affords them. They sacrifice the quality and size of their living environments in order to access and benefit from these opportunities, and adjust their social and family lives accordingly. For many, this is a sacrifice they are willing to make, as they adjust their behaviour in a complex and constant negotiation with the constraints and regulations of their environment. For others, the equation is becoming increasingly difficult to balance - poor environmental quality is eroding living environments, rising real estate prices are further shrinking floor space and the demands of surviving in competitive employment markets are placing workers under increasing stress. At the same time Hong Kong's urban fabric is becoming ever denser and processes of urban renewal and infrastructure development destroy public spaces and local amenities, replacing them with high-end hotels and apartment buildings that the real estate market both demands and supplies, generating a sense of loss for many residents. The stories and experiences told by these 32 residents of Whampoa, Sai Ying Pun and Sham Shui Po suggest that living in Hong Kong comes with a price that could be on the verge of becoming too much to pay. This sentiment is perhaps most powerfully communicated by a brief exchange between two young residents of Whampoa, Ivan and Sam (both 22 years of age):

Ivan: I worry that it [the pace of living in Hong Kong] will become even faster.

Sam: I cannot accept any faster.

As one of the world's densest and healthiest cities, at least in terms of its high life expectancy and low infant mortality, Hong Kong's experiences may offer insights to city makers and dwellers traversing processes of change in other parts of the world.

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First published in 2011 LSE Cities London School of Economics and Political Science Houghton Street London WC2A 2AE UK

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Unless otherwise noted, all sources for the data analysis in this document can be found at urban-age.net.

ISBN 978-0-85328-468-0

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