

PARADIGM SHIFT

A city for the 21st Century

JUSTYNA A. KARAKIEWICZ

The University of Melbourne, Melbourne, Australia

justynak@unimelb.edu.au

Abstract. China just announced that in the next 12 years 250 million of rural population would move to the city. The last time in history we experienced similar population growth in cities was during the Industrial Revolution. However, by comparison with what happening in China today, population increase due to the Industrial Revolution looks trivial. And the most worrying fact is, that we are still relaying on ideas and models for city development that resulted from Industrial Revolution over 100 years ago. What we need now more than anything else is the idea for the 21st century Asian cities.

Keywords. City, Industrial Revolution, multidimensional urban space, population growth, planning regulations, parametric urbanism

1. Introduction

“What is a city, but the people; true the people are the city” wrote Shakespeare in *Coriolanus* in 1608. But what kind of city was he referring to? Was it Rome of 5th century BC, or London at the beginning of 17th century?

In 1613, so not so long after writing *Coriolanus*, Shakespeare bought a property in Blackfriars, located very conveniently between Globe and Blackfriars theatres; convenience to his work, his culture and, presumably, his associates. The Blackfriars was located in the City of London on the site of a thirteenth century Dominican monastery. The Dominican monastery was closed in 1538 by Henry VIII and the land subdivided. It became a popular place for gentry and many substantial residences were built on the site. In 1576, Richard Farrant created the first Blackfriars theatre; in 1596 a second theatre was put on the site. By the time Shakespeare bought his property, the area was already famous from the activities and performances being held there.

The late sixteenth century and the early seventeenth century, the Tudor period in British history has been often referred as the high point of the English Renaissance. The area of Blackfriars, within the city walls but outside city's jurisdiction, played an important role as a cultural centre while London was rapidly rising in its importance in Europe as commercial centre. Trade was expanding beyond Europe into the Americas and India; for example, the East India Company was established in 1600.

The population of London was expanding too. From 1530 to about 1605, the population increased from about 50,000 to 225,000 and, for the first time in history, the idea of urban sprawl started to appear. The city sought to control the sprawl by series of ordinances that were issued in 1580, 1583, 1593, and 1605 (Pevsner, 1962: 48:49). These ordinances can be compared to green belt controls or five acre zoning of the twentieth century. It also resulted in an increase in property prices and practices of subdivision, overcrowding, and shoddy construction. Of the population of 225,000 attributed to London, only around 75,000 lived in the city, the rest lived in the inner suburbs.

This period also experience increase of wealthier people building themselves villas, country residence, away from overcrowded London, something, which was very characteristic to English culture, but did not appear in the rest of Europe. And although English towns may have been experiencing sprawl by the end of the sixteenth century, nevertheless, as in the rest of the Europe, city life was superior to life in the suburbs. The city offered security, employment and freedom, the city was the place where innovation and prosperity emerged. Cities worldwide still foster entrepreneurship and facilitate social and economic mobility. Note though that the city that Shakespeare referred to in *Coriolanus* was a very different city to London today, it was full of people and diverse activities but it was also crowded and unhealthy, and poorly constructed, which in turn led to the great fire in September 1666.

When Shakespeare wrote *Coriolanus*, he was nominally referring to the city of Rome in the fifth century BC. His book was based on Thomas North's translation in 1579 of Plutarch's *Lives of the Noble Grecians and Romans* (Shakespeare and Furness, 1928) but he was probably also commenting on the London of his day, with all its problems and benefits. For him the most important element of the city was its people. It is something that planners and architects of the twenty-century have appeared to forget. If we were to define a city by its people and their capacity to participate, how many places in the world today will we consider to be effective cities?

2. The industrial revolution and the city

The cities in which we are living today are, in many ways, the direct result of the Industrial Revolution of the nineteenth century, a change that brought tremendous changes to cities, to the way we live and to the way we relate to one another. The Industrial Revolution introduced mass production and, consequently, lower prices for these products. For the first time in history, such goods became affordable to the broad public. As a consequence, quality of life started to improve but not for everyone equally.

Urban opportunities for employment were very desirable for those living in rural areas. Life in the countryside was extremely hard and many people could not feed themselves adequately. The city offered opportunities, and although the life in the city was very hard as well but it was often much better than in the countryside. The mass urban inflows started, people left the countryside in their thousands, and the cities transformed quickly. The migrants sought work in factories, on the docks, or as domestic servants, servicing a rapidly increasing middle class. The government found it very difficult to deal with this rapid increase in the urban population and struggled to meet the demand for basic requirements such as housing, water and food.

Life for the poor was difficult and life expectancy short. In overcrowded dwellings without water or sewage systems, disease spread quickly. Unfortunately very little had been done before 1834 when the Poor Law commission was first established. The first Sanitary Commissioner and Poor Law Reformer was Edwin Chadwick who published, at his own expense, a report on conditions he observed in London (Chadwick, 1842). In this, he described in detail living conditions of the working class. This is the first detailed record of the consequences of rapid urbanisation and economic progress and led six years later to the first Public Health Act in 1848 (Calman, 1998). The aim of the act was to improve the sanitary conditions of towns and populous places in England and Wales. And therefore, *the Chadwick Report should be acknowledged as not only being a survey of the social and environmental condition of a large number of towns and cities, but an act to create public health policy* (Morley, 2007: 69). Chadwick's report was pioneering research bringing together health and sanitary issues, previously isolated, to address health issues through legislation. Quality of life in cities started to improve after implementation of first Public Health Act of 1848 that provided for the first time a proactive public health system that established minimum environmental standards (Hamlin, 1998). This marked the start of an era of Public Health Acts, Building Ordinances and Planning Regulations that has had a profound impact on the shape of cities globally.

3. Chadwick and Hong Kong

The impact of such legislation can be readily observed by looking at the development of Hong Kong. In 1882 Chadwick's son, Owen, was commissioned to report on housing conditions in Hong Kong. At this time, due to constant influx of people from the rest of China, overcrowding and insanitary conditions had dramatically worsened. Even before Chadwick had been commissioned, two Ordinances had been passed related to health and safety. In 1856, the first ordinance was introduced to reduce fire risks, making it illegal to construct wooden verandas over the street level. In 1878, the second Ordinance was enacted to address structural and fire issues and led to the verandas supported by stone or masonry structures. Of greater impact on urban form, however, this Chadwick report however made it illegal to build back-to-back houses (Chadwick, 1882). The reduction of depth of buildings improved ventilation and light within the dwellings.

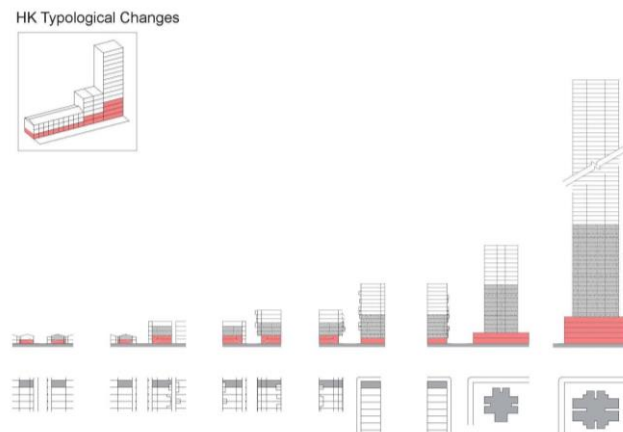


Figure 1. Typological changes due to Building Ordinances from 1843 to 2000 (Shelton et al, 2011)

The veranda typology was extensively used in Hong Kong until the late 1950s when new legislation was enacted demanding that the street received adequate sunlight and staircases sufficient ventilation. This, in turn, led to a cantilevered typology and indentation in the façade in order to provide light to the staircases (step 3 in Figure 1). After the 1961 Ordinance, this indentation disappeared from the elevation and was replaced by locating staircases between two buildings, serving both. The Building Ordinance of 1962 prevented construction of tapered floors and metal balconies and the Building Ordinance of 1964 led to the massive block type. And eventually due to demand for provision of open recreational space the podium structure became the model for the new typology (Shelton et al, 2011).

What we observe in Hong Kong is how both the demand for space and ever more stringent building regulations to promote health and safety standards led to ever changing typologies within constrained footprints, leading to vertical expansion. Importantly, though the city remained intensely used and dense, with mix-use and activities always present at the street level. Unfortunately with the podium structure, the idea of adaptability, flexibility and ability to incorporate change, changing demands and unforeseen circumstances has been lost.

What is also important to notice is the fact that above descriptions of different typologies happened between 1843 and 1997. In the same time in Britain, under the same administration, London was expanding, following the rules of health and safety, but in dramatically different manner.

4. Industrial Revolution and question of housing

In Britain, between 1848 and 1892, a further sixteen Public Health Acts were created dealing with drainage, water supplies, sewage, and street lighting. In the 1885 Housing of Working Classes Act, power was granted to local authorities to shut down unhealthy houses and making landlords personally liable for their tenants' health. It also made it illegal for any landlord to let property that was below standard (Roberts, 1999).

Although living conditions for the working classes may have slightly improved, they were still far from desirable. The rich lived around squares created after the fire of 1666, enjoying light and well circulated air. Hannover Square was built by Earl of Scarborough, Seville Row and Burlington Street by Earl of Burlington, and Berkley Square by Duke of Devonshire. The splendour of the city was also supplemented by houses in the countryside. The new created middle class was getting wealthier but could not afford properties in Central London, however, had access to more affordable properties in the suburbs. One of the great examples of a fully developed suburb was St John's Wood. The planning of the estate started in 1794, predating Howard's Garden Cities by over 100 years. Burnett (1986: 107) and Galinou (2010: 77) both write that the Eyre Estate in St John's Wood was not only the first estate in the world to introduce closely packed villas but also the first to introduce the semi-detached dwelling. As early as 1732, the Eyre family purchased almost 500 acre of land and by the nineteenth century that it began to be known as the artistic quarter. The original master plan of 1794 went through variety of changes and modifications but when the construction of the estate commenced in 1805 semi-detached houses still dominated the final design (Galinou, 2010).

The first master plan had a large number of large semi-detached dwellings set in substantial gardens. The status was then defined by the size of the plot or of the garden rather than by the type of the house, with the semi taking on a new and influential role.

The detached upper class suburban villa split into two during the eighteenth century, although in the correct location and with the right form and style, the architect-designed pairs remained socially desirable for the upper middle class. When the middle classes adopted the values of the rural village, including its double cottages, for their suburbs, this opened up opportunities for the nineteenth century speculative builders to provide double villas for aspirational middle and lower middle classes. In effect, semis had moved down the social scale from the upper middle class to the rest of the middle class. The artisans were provided with terraces or tenements, while labouring classes remained in the older housing, much of which had become slums (Lofthouse, 2013).

It is notable that the image of semi-detached houses seen from a distance looked much like a Palladian villa in a pastoral landscape. In the reconstruction of the plan of Eyre Estate from beginning of eighteenth century, the impression of an adjoining pair of semis is that of a single villa set within a large garden (Galinou, 2010). Although not large, the semi was equipped with all the necessary elements to support a new type of family life. Previously available only to the upper classes, these houses provided kitchen facilities and bathrooms.

Although semi-detached houses were unknown typology before the Eyre Estate, Galinou believes that the architect George Dance the Younger was first to introduce semi-detached villas in his Camden Estate proposal in 1790. As this was never built, the idea remained only on the drawing board. In 1824, fourteen years after the first semi-detached villa was built by Robert Todd on Alpha Road in the Eyre Estate, John Nash also designed semi-detached houses in Park Village East and Park Village West, adjoining Regents Park. Although his semi-detached houses were not surrounded by the large gardens, they also presented themselves as villas. It was in this development that Nash sold to the upper classes the benefits of semi-detached dwellings. Within a few years, semi-detached villas became socially acceptable, although only in the right location and only if they appeared to be single large villas. In later years, architects of these semi-detached villas competed with each other by designing them in a variety of styles; Italian Palladian villas were the most popular, followed closely by gothic revival, and Queen Anne, although such acceptance has not been consistent.

The Italiante villa suffered the ultimate humiliation by becoming two houses rather than one (Summerson, 1964)

These villas, set up in extensive gardens, stood in contrast to the most common typology of London at that time, the terrace house

“the first part of London and indeed of any town, to abandon the terrace house for the semi-detached villa — a revolution of striking significance and far-reaching effect.”(Summerson, 1964)

Similarly, Abercrombie (1939: xix) observed that “...*semi-detached villa [was] perhaps the least satisfactory building unit in the world*”

When the Eyre Estate was being built, the middle class in London was 15% of the total population (Burnett, 1986: 14, 97). Although only a small percentage of the population could identify themselves as middle class, the desire of this new created group of people was to be different from the working class. One way of differentiating themselves from the working class was to move out of terrace housing and overcrowded slums into what was considered the healthier environment of suburbs. The middle classes were very much focused on family and family life, where the wife no longer were involved with running the business, but rather running the home and family life, protected from poor morals and unacceptable behaviour of the working classes. The suburbs offered an idealized approximation to country living, similar to that available to the upper classes, not associated with the squalid living that many of the middle class had just escaped. The idea was relatively easy to sell and it accelerated the move towards what we today understand as urban sprawl. But what has started as idea to move people from unhealthy environment, towards better quality of life, led to something very different: Hong Kong was expanding vertically, London was expanding horizontally.

Today it will be very difficult to repeat the words of Shakespeare to describe the city: “*What is a city, but the people; true the people are the city*”. Our cities are often without any people in them and if you find them, they most probably be just visitors. They come to city to work, to shop, to be entertained, and then to depart, therefore not the part of the city fabric.

Some of them may have returned to the city centre but majority remain in the suburbs but claiming that they are the urban population. The suburban lifestyles, however, promotes isolation, individualism and segregation which have very little to do with urban life. As Mumford (1923) noted, they are unanchored: *[T]he growth of the metropolis throws vast numbers of people into distant dormitories where ... life is carried on without the discipline of rural occupations and without the cultural resources that the Central District of the city still retains.*

Therefore can we really say that over 50% of the world population lives in the city or can we say that over 50% of the population is urbanized? Both of the statements describe the situation, which means that over 50% of the world population no longer lives in rural areas. The way we live today, whether we live in detached, semi-detached or terrace houses is much closer to Frank Lloyd Wright's Broadacre City Project. Wright (1932) describes the project as the antithesis to the densely populated city propagated by Le Corbusier, but Wright's city is not a city at all. It is decentralized, self-sufficient and merges into its surroundings seamlessly. For him, car dependence and agriculture fields represented an opportunity for a self-determined democratic life. The nuclear family was the centre of this "urban life". Each family house had 4,000 square meters of land to grow its own food. With consequential average density of 5 people per hectare, it will be difficult to call this a city ("Density Atlas," 2013). There were some denser areas with the project located adjacent to the transport links of the monorail and highway, grouped according to their function. Higher density housing and high-rise office towers for municipal administration were attached to the nodes of a road grid, but the distances between these nodes were determined in order to prevent them merging into an urban agglomeration. Wright referred to Broadacre City as a "new pattern for living in America", his vision was to eliminate the difference between rural and urban life, by relying on the car.

Although many may not subscribe to this vision of individualisation, the desire for a detached villa in the countryside remains a strong force. If the nineteenth and twentieth century visions of cities are failing us today, it is a time when we should come up with new ideas, the ideas for the twenty first century.

5. A twenty first century city

In the above chapter we traced history of two different cities during the same period of history, when health and safety rules led to transformation of typologies and the way we live today. Two cities, same aspiration to promote better quality of life, healthy and safe environment, but two very different outcomes. Vertical and horizontal sprawl, both of them, although different, are still very much rooted in 19th or early 20th century ideas; ideas, which came out as the result of rapid population expansion. Today, once again, we are facing tremendous population expansion, but the models we have are not only outdated but also are the models that failed us.

A city is a direct reflection of its inhabitants where the design directly influences the living conditions of the people. Modernist city theory is similar to the modernist house philosophy, the machine for living. Both seek to create

a system independent of its environment. The glass box free standing in beautiful landscape, observable in its isolation and admired for its self-referential purity, is a close summary of our attitude to urban life. We have promoted distinction and segregation, and this, in turn, has led to a remoteness and loneliness of many cities inhabitants. We have also been promoting towers, high-rise, high-density developments, based on Le Corbusier ideas, which have similar problems of isolation, in form of vertical suburbs. And even if the idea of the shop house, as functional mix, may still exist in some developments, unfortunately it has lost its ability to readapt, to change and reconfigure itself to the different requirements and circumstances.

While perhaps no longer valid, we recognise that those models were innovative and were not locked into extant forms. When Cedra designed the extension plan for Barcelona in 1859, there were no precedents for him to look at. Similarly, when Le Corbusier designed Ville Radieuse, most of the buildings in Paris were no more than 6 floors high and Ebenezer Howard proposed Garden Cities at a time when most people still worked from home. Over 100 years ago, these designers managed re-conceptualized the city and city life. Can we do it again? Can we come up with a new alternative?

Our capacity to direct and determine cities according to static rules gleaned from standard guides, translated into prescribed master plans, is readily outpaced by market economies. We now recognise that Modernist assumptions of rigid universal functionalism, on optimization based on predictability, and the support of individualism, have proven to be unsuccessful and damaging. However, even if we now started to recognize complexity and recognise the strength of the informal, we still have not come up with new alternatives for cities.

Rather than a city as a manifestation of a carefully constructed master plan, it is more accurate to consider the city as an organism or complex adaptive system. In this, we have the capacity to envision a city in a model distinct from those used in the past 150 years. We have now techniques to access and model data to explore alternatives. We have also the capacity not to describe form but model processes and consequences. Using, for example, parametric techniques, we can control multiple variables readily. We can create not only complex physical forms but also describe complex processes and multidimensional space. Our perception allows us to visualize easily three dimensions. But in order to visualize fourth dimension we revert to three-dimensional perception, therefore, although we now that mathematical space maybe multidimensional, we can still only visualize three-dimensional space. Fortunately we now have to our disposal computers that can enable us to at least conceptualize multidimensional space when designing future alternative urban scenarios. It is not as much to add fourth dimension to design

of our cities, but the fifth, where choice of the route the development can take is the part of design. Therefore the form in these scenarios will be secondary to activities that could place within them. And this time the old modernist slogan; "Form Follows Function", which in the past few decades has been changed to: "Forms Follows Profit" will become: "Forms Opens up Possibilities", where form will be result of negotiation developed through the feedback loop. And in order to include feedback loop into design we will need to work in multidimensional space, where environmental, social, economic and political aspects are incorporated into the form of the development. This multidimensional space will probably have more than just five dimensions. And maybe then we will be able to say once again: "What is the city, but the people; true the people are the city".

References

- Abercrombie, P. S.: 1939, *The Book of the Modern House. A panoramic survey of contemporary domestic design*. [By various authors.] Edited and prepared under the direction of P. Abercrombie. [With illustrations.], Hodder & Stoughton, London.
- Burnett, J.: 1986, *A social history of housing, 1815-1985*, 2nd ed., Methuen, London.
- Calman, K. C.: 1998, *Potential for health*, Oxford University Press, Oxford.
- Chadwick, E.: 1842, Report to Her Majesty's Principal Secretary of State for the Home Department, from the Poor Law Commissioners, on an inquiry into the sanitary condition of the labouring population of Great Britain; with appendices. [Compiled by E. Chadwick.] (Report on the Sanitary Condition of the Labouring Population of Great Britain. A Supplementary Report on the results of a special inquiry into the practice of interment in towns. Made at the request of Her Majesty's Principal Secretary of State for the Home Department, by E. Chadwick.-Sanitary Inquiry.-England. Local Reports, etc.-Sanitary Inquiry.-Scotland. Reports, etc.), W. Clowes and Sons, London.
- Chadwick, O.: 1882, Mr. Chadwick's reports on the sanitary condition of Hong Kong: With appendices and plans, Colonial Office, London.
- "Density Atlas": 2013. Available from: <<http://densityatlas.org/>> (accessed July 10).
- Galinou, M.: 2010, *Cottages and villas: the birth of the garden suburb*, Yale University Press, New Haven, Conn. ; London.
- Hamlin, C., S. Sheard: 1998, Revolution in Public Health: 1848, and 1998, *BMJ*, **317**(158), 587-591.
- Lofthouse, P.: 2013, The development of English semi-detached dwellings during the nineteenth century, *Papers from the Institute of Archaeology* **22**(83-98).
- Morley, I.: 2007, City Chaos, Contagion, Chadwick, and Social Justice, *Yale Journal of Biology and Medicine*, **80**(2), 61-72.
- Mumford, L.: 1923, *Story of Utopias: Ideal Commonwealths and Social Myths*, Harrap, [S.I.].
- Pevsner, N.: 1962, *London. I, The Cities of London and Westminster*, 2nd ed., extensively revised. ed., Penguin, Harmondsworth.
- Roberts, A.: 1999, *Salisbury : Victorian titan*, Weidenfeld & Nicolson, London.
- Shakespeare, W. and Furness, H. H.: 1928, *Tragedie of Coriolanus*, Lippincott, [S.I.].
- Shelton, B., Karakiewicz, J. and Kvan, T.: 2011, *The making of Hong Kong: from vertical to volumetric*, Planning, History and Environment Series, Routledge, Abingdon.
- Summerson, J.: 1964, *The Classical Language of Architecture*. [With plates.], Methuen & Co., London.
- Wright, F. L.: 1932, *The disappearing city*, W.F. Payson, New York.