Principles of developed cities

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Abstract

The future and development of the high-rise metropolis presents a number of fundamental challenges. The standard of living experienced by those that have migrated could be seen as drastically reduced due to issues such as overcrowding, noise pollution and the stratospheric costs of living in a city. These can be classed as profoundly negative impacts which will only amplify in their power over time. Megacities will expand and become more densely populated and hence more crowded. Though the temptation to move to a city can be alluring, these challenges will only increase as time passes. London as an example of a developed city has experienced the brunt of many of these challenges. Congestion, a low standard of public services and overcrowding that of course leads to competition for these services can be seen by simply walking through London's Victoria train station. The dreams people may have of an extremely high standard of living are shattered when faced with the reality of these increasing challenges. It is therefore profoundly important to investigate the principles of the developed city; as in the ways and mechanisms in which the megacity can be a warm, habitable place to live. This paper will investigate these principles and potentially put forward ideas for how the megacity can develop moving forward in order to contribute to providing better places for the planet's population to live.

Keywords: *high-rise city, high-density, metropolis, skyline, megacity, development.*

1 Introduction

Over the next four decades more than seventy per cent of the world's population is projected and expected to live in high-rise skylines of heavily populated developed cities. The specific year where this is set to happen is the year 2050 (Wilson [1]). The developed city is already the home of half of the planet's

current population. Hundreds of cities across the globe now have a population greater than one million. As we move towards the projected time frame of 2050 we will have cities that could potentially have populations that are greater than ten million. The interesting and intriguing trend of these cities is that they are in effect becoming more crowded, congested and fundamentally denser. The overriding pattern is that most of the world's population are moving and migrating to these megacities. Perhaps people are seeking the bright neon lights of the city life or perhaps they are seeking the alluring economic opportunities of a city-based career. The truth is more and more people are rejecting isolation in the outer, less densely populated living areas and moving to the densely-populated developed city.

The future and development of the high-rise metropolis presents a number of fundamental challenges. The standard of living experienced by those that have migrated could be seen as drastically reduced due to issues such as overcrowding, noise pollution and the stratospheric costs of living in a city. These can be classed as profoundly negative impacts which will only amplify in their power over time. Megacities will expand and become more densely populated and hence more crowded. Though the temptation to move to a city can be alluring, these challenges will only increase as time passes. London as an example of a developed city has experienced the brunt of many of these challenges. Congestion, a low standard of public services and overcrowding that of course leads to competition for these services can be seen by simply walking through London's Victoria train station.

The dreams people may have of an extremely high standard of living are shattered when faced with the reality of these increasing challenges. It is therefore profoundly important to investigate the principles of the developed city; as in the ways and mechanisms in which the megacity can be a warm, habitable place to live. This paper will investigate these principles and potentially put forward ideas for how the megacity can develop moving forward in order to contribute to providing better places for the planet's population to live.

2 Principle 1: urban development as a future-focused objective

The key fundamental issue with the megacity is the use of the land mass in relation to the density of the city. A striking example of this would be the city of Tokyo. Japan is limited in its available land so hence has been forced to compromise on space via some clever mechanisms of making the most of what it has (Cox [2]). This involves a heavily dense city that forces for example living apartments to be extremely reduced in size. The idea and thinking behind this is that the population will sacrifice on living space in order to provide adequate accommodation for fellow residents. A forced compromise but a necessary one nevertheless. It is however profoundly important that even with limited space and a large population that a city not become restricted, confined and challenging to live in for its residents. The key resolution to this issue is balance. Balance and

a focus on development along with re-development as a long-term effort that prioritises the importance of the longevity of the city's well-being over several decades.

The needs of the population both past and present must be met. This must not however come at the sacrifice of satiating or achieving short-term objectives for the greater good of the city over the horizon of the long-term. Calculated planning as well as ingenious and effective urban design can mitigate the issue and secure the future of the city over the very important long-term.

3 Principle 2: population and the environment

It is of paramount importance to consider population in the high-density heavily populated megacity. The megacity will inevitably host a vast range of people from all walks of life from the humble taxi driver to the high-level businessmen. With this in mind it is important to primarily consider this range of people when building a city that is warm, welcoming and inclusive. It is important to note that a wide ranging and varied population can inevitably result in that population becoming separated and divisive.

Densely populated cities obviously host a population that can potentially be very different from one another and yet one that lives so close together. The migrants to these high-density cities should not feel outcast or rejected to the side-lines. They must feel included. They must feel that they are contributing members of society. In order to achieve this, the densely populated city must foster a sense of inclusion and togetherness which in turn is generated by encouraging greater social interaction. Another aspect that can potentially have a negative impact on the developed city is that of the environment. High-rise city tower blocks and a sprawling metropolis can relegate the environment to the point of being eradicated. A good example of this is New York. Though New York hosts a series of sky scrapers and a theme of bright lights that glisten across the skyline of the grey and concrete the environment has been safeguarded by securing and preserving Central Park in Manhattan (Firth and Cramer [3]). This must serve as an example for the rest of the world. The environment or more specifically nature must be preserved and protected to a certain extent given that it is nature that contributes to the sanctity and well-being of human beings. The developed city must therefore strike a balance between the artificially generated tower blocks and the natural features of the environment with a profound emphasis placed on the security and preservation of both.

4 Principle 3: housing requirements and the function of space

When considering the function and development of the heavily populated city one must place importance and emphasis on the places in which the population will live. The neighbourhoods of a crowded city can inevitably become too strained and claustrophobic should insufficient attention be placed on their successful development. Neighbourhoods that are limited in available space must

therefore be carefully designed and implemented in order to provide an acceptable and contented living environment for its residents.

Basic services such as public schools and parks must be placed in walking distance to reduce the need for resorting to public and private transport for example. This will reduce congestion and pollution on the native infrastructure of suburban neighbourhoods. It would allow the population to walk throughout the streets in which they live in a calm and pleasant atmosphere. Another factor to consider is the function and use of space. This is particularly important given that imperatively space in a densely populated city will inevitably be limited (Krulwich [4]). It is therefore important to make use of all of the space that is available and give every sector of space a purpose and function. In many smaller cities throughout the world one can often find wide open spaces that are empty and dormant. Within the restricted confines of the densely populated city these very same spaces must be used and perform a function. This would therefore have a positive impact on the local population giving them further commercial and recreational services whilst making the most of the limited space that a heavily populated city has to offer.

5 Principle 4: infrastructure, transport and environment design

One major negative impact that a bustling, busy and alive city can feature is the effect of the constant use of congested and loud transport both in its public and private forms. Visit any major city of the world at rush hour and the scene can become a flash of rushed urgency (Scheuring and Domokos [5]). Speeding cars, loud horns and an overwhelming amount of noise pollution can be found in a city that has poorly designed infrastructure that of course leads to transport becoming the dominating force of the city's streets. This is inevitably a compelling and profound issue that requires an effective and long-term focused solution.

The switch and move to transport that is safer for the environment is one positive step towards this. A public transport system to encourage people to share their transport over using private cars is another. These two ideas in tandem would assist in reducing pollution and contributing to a healthier and safer experience for those who have chosen to live in the developed city. Another factor to consider that is tangentially related to this very issue is the value of the natural environment. If a city is densely populated by meandering roads, tunnels and highways then evidently the city is going to represent and demonstrate this design choice. The developed city should therefore not be designed to be a predominantly urban maze of concrete high-rise tower blocks and an overwhelming force of infrastructure designed to facilitate transport. Creating a sparser and more spacious feel to the city via the mechanism of effective and intelligent urban design is of profound importance. A positive step towards this is creating layers of nature and greenery around the perimeters of the sprawling urban buildings to create a pleasant escape from the fast-paced and intense urban city life. This all contributes to a city that is safer, more aesthetically

pleasing and overall superior to live in for the general population. The key therefore is in the design.

6 Principle 5: function of safe space and technological solutions

One key issue that must be touched upon is the security, safety and well-being of the population when placed in a high-density developed city. A vast and sprawling population living in a busy, confined and restricted area can inevitably result in dangerous issues such as misconduct and crime (Koichi [6]).

In order to have a high-standard of living and to live in a city that is both safe and secure residents must have a tangible sense of personal security. This can be intrinsically traced back to urban development and design. Open spaces whereby, for example, one street can be seen from another allows greater visibility for the population. Should therefore a crime happen a well-designed space where other people or law enforcement can rapidly intervene has a very real effect of increasing the general security for everyone living in the developed city. Visibility which can be implemented and instigated in the initial design phase is therefore paramount, profoundly important and key. Another factor that must also be considered is the pressure and restraints placed on space and availability of land. As a developed city expands and grows space becomes more and more strained and limited. This also has an effect on available resources.

A large, dense population obviously has extremely high requirements and needs when it comes to consumption of resources. The solution to this can come in the form of combining ideas and technology. A focus on technological advancements that can therefore relieve constraints on space and resources is fundamentally important. Technology changes and advances at a rapid pace so it is therefore key that developed cities adopt the latest and greatest in these technological developments to relieve the pressure on limited space and resources. This of course is both important and requires substantial investment.

7 Principle 6: concept of compact city development

One of the primary concepts that is yet to be discussed in this paper is the idea of compact city development and whether this is a viable and strategic option that may be applied as a key principle of the developed city.

There is in fact an exceptionally strong connection between sustainable development and urban form. The latter can be identified as the concept whereby a city is designed to encourage and accommodate its citizens in terms of generating a practical infrastructure for transport whilst maintaining a sufficient compactness to allow meaningful social interaction. The intrinsic factor that can therefore be linked to compact city development is the urban form of concentrated and compact cities at the design phase. Design that exerts a limitation on space yet also provides an appropriate and acceptable living environment for the city's population is profoundly important. Existing cities are also a concern given that the concept of the compact city can still be viable and

applied through the means of intensifying development and working on the existing infrastructure to revive and regenerate cities to which primary development has already been completed.

The key theory behind the compact city can be located in the idea of containment, a process by which designers would maximise the use of space in a way that is both supremely efficient yet also socially sustainable. An important idea that is tangentially related to this is that of infrastructure design that reduces the need to travel. A population that is encouraged to walk and cycle for example will be a population that therefore produces significantly reduced vehicle emissions.

The key issue here is that the very concept of the compact city whether implemented in the design phase of new cities or in the re-development of existing ones creates the potential to solve many of the negative externalities present in today's developed cities. On the other side of the argument the inefficient implementation of compact city development can also result in issues such overcrowding, congestion and a reduction of urban quality that therefore results in a living environment to which the population finds it challenging to live. It is therefore paramount that strategic and intelligent urban design is planned and considered in order for the concept of the compact city to achieve any degree of sustainable development over the horizon of the long-term.

8 Conclusion

This paper introduces several issues and challenges that are present in today's developed cities. As cities proliferate across the world and naturally expand and transform from the city to the high-rise metropolis it is profoundly important to consider these challenges and execute effective plans to mitigate their potential negative impacts.

This paper has also proposed a range of intelligent solutions to each of these challenges. It is however important to note that as a developed city evolves so do the challenges that may be faced and hence the solutions to these challenges must also evolve in tandem. It is not enough to introduce partial solutions to each of these challenges. Each potential solution must have the scope to evolve and change over time in order to meet challenges that may amplify in their power and become more intense as time passes. These potential solutions to the various challenges that are introduced and discussed can therefore only be considered a "foundation" of what is required to create a functional, pleasant and fundamentally liveable city. The key issue and conclusion is that more ideas must be generated and developed as indeed the city itself expands and develops over time. Cities must be designed and focused on supporting larger and more dense populations without negatively affecting the standard of living for its residents. Cities will almost certainly become more densely populated. High-rise tower blocks will dominate their skylines and the populations of the cities will encounter challenges in living an effective and quality life in their chosen place of residence. The principles discussed in this paper along with the potential

solutions put forward a “foundation” and starting point for planners and designers in developing an effective, liveable developed city.

The final conclusion of this paper is that though these challenges may be daunting there are stunning examples of effective developed cities across the world that are both liveable and functional, examples that exist to shape the development of future cities to come.

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