CHAPTER 8: Transforming City Studio

Abstract

This chapter equips the reader with skills to develop concepts, spatial structures, programmes and design rules and creatively integrate all these into robust urban design and architectural proposals. The leitmotif of this studio is to design liveable, beautiful and open urban spaces. The reader is expected to gain knowledge and skills in reconciling the dynamic forces of urban transformation with architecture and planning. In this manner, high-quality urban spaces that are responsive, yet specific to their context, contributing to a sustainable balance of our urban environment, can be created. The areas covered in this chapter are based on contemporary urban themes, such as design and densification of urban nodes and quarters, revitalisation of former industrial and harbour areas and sustainable transformation of the city landscape.

INTRODUCTION

This chapter aims at proffering skills for the overall development of robust urban design and architectural proposals in the planning and design of cities. This is done through discussing concepts, spatial structures, programmes and design rules that can transform cities into liveable, beautiful and open urban spaces. The evolution of cities throughout time has meant their design considerations should change to suit the prevailing conditions and human needs. Thus, city studio must be manned with a responsive agenda of urban design that is specific to context to create a sustainable balance in the urban environment. The major aspects of this chapter are based on contemporary urban themes such as design and densification of urban nodes and quarters, revitalisation of former industrial and harbour areas and sustainable transformation of the city landscape.

BACKGROUND AND CONTEXT

Urban spaces have been created throughout the world because of varying factors and theories of development. This chapter emphasises buildings that Lossifova (2017) argues define cities and space.

Historically, large parts of the built environment have been and continue to be created without the help of formal professionals. This means that in the past, professions such as architecture and urban design, were not there but cities existed. This qualifies the saying "architecture without architects" as highlighted by Lossifova (*ibid.*). With time, humans began to formalise knowledge through oral histories and inter-generational tradition of knowledge and practices, such that fields like architecture, became formalised and later, urban designers. This chapter thus looks at the transformation of city studio that is understood as the "design room" for cities, responsible for the structuring and development of cities of today. Some of the fundamental aspects include what "urban" means for architecture and urban design, the changing architectural and urban design professions and how they relate to the city. Cities are, however, subject to continuous transformation as new components appear, disappear and reconfigure space over time. The type and characteristics of cities are further subject to changes in the social and economic organisation of a society. This means that cities have existed to serve various and different needs specific to a time.

The period of industrialisation was a major driver of urban transformation, especially in terms of their qualitative change and enlargement of cities around the globe. Beginning in mid-18th century, smaller towns and mercantile centres saw enormous expansion, triggered by new means of transportation and communication such as ship canals and railways. Lossifova (*ibid.*) argues that in old city centres, huge factories and warehouses replaced old merchant housing and reduced de facto available open space, leading to overall environmental deterioration. Accordingly, the concept of affordability came into play where those who could afford to move out of the inner cities, moved out to leafier areas along railway lines. Those who could not afford, had to remain behind in the factory towns that had no appreciation of basic human needs.

The conditions in industrial towns, characterised by overcrowding, lack of sanitation and adequate provision of water, air and light, triggered the emergence of a whole new system of public responsibility and social enterprise. It was during this time that minimum standards were

slowly introduced to ensure adequate provision of space and a variety of services in low-cost housing. Formal architectural training began with the birth of the Industrial Revolution. It is at this time that architecture shifted in perception as equal to art, rather than science or craft. The major shift emphasised emotional experience over objective reason and inspiration over common sense (Lossifova, *ibid.*). This saw the production of beautiful drawings, rather than the context and feasibility of a project. On this background note, Lossifova (*ibid.*) argues that although architects and urban designers are often associated with the development of visions for built spaces, it is impossible to consider their activity a purely artistic exercise. Lawrence (1993) thus argues that buildings are shelters that can act as a filter between the private and the public, they can be symbolic and they can carry economic and environmental implications. The illustration above serves to provide the basis that architects and urban design came to be of importance in the creation of today's robust urban environments.

Present architects and urban designers have their spaces of activity and influence frequently overlapping and converging and they set parameters for specific design briefs and designing for the client's intention and goals. Although issues associated with costs are critical in this regard, there are concepts such as robustness, resilience and sustainability that play a critical role in determining the types of designs and the skills required in city studio. Lossifova (2017) argues that when shaping urban space, architects and urban designers deal with its social content. Some schools of thought, such as the modernists, assume that the work of architects and urban designers in the form of spatial designs could change society and this happens in the name of the concept of environmental determinism. However, other schools of thought reject this thinking by suggesting that there is a relationship between people and their environment as one of mutual exchange. As observed by Lossifova (*ibid.*) urban design is understood as the socio-spatial management of the urban environment using both visual and verbal means of communication and engaging in a variety of scales of urban socio-spatial phenomena. With these background aspects of the city studio, it is important to note that the processes are dynamic and needs specific such that the 21st century requires an upgrade of the traditional ways of determining urban form and structure. Thus, this chapter tries to proffer the skills required in the creation of robust and sustainable cities.

THEORIES UNDERPINNING THE STUDY

SUSTAINABLE URBAN DESIGN

This theory of urban development connotes a new relationship between the natural environment, urban form and structure, economic and institutional processes and social livelihood. The relationship assess above requires a transformation of the existing socio-economic, environmental and urban design settings. As observed by Atkinson and Ting (2002), sustainable urban design is an attempt to recognise the complex and hitherto-neglected relationship between the natural environment (sustainable) and the city as an artefact (urban design). One important goal is to enable the natural processes that sustain life to remain intact and to continue functioning alongside initiatives for the improvement of individual quality of life and the well-being of society. Wheeler (1998) also argues that sustainable urban design adopts a systemic and synergistic reorganisation of environmental, economic and socio-economic goals that enhance the long-term health of natural systems and the vitality of urban communities.

Linked to this chapter, the theory of sustainable urban design calls for a comprehensive framework of new urban design ethic to promote sustainable cities. This is the aim of this development of literature to influence the development of liveable, beautiful and open urban spaces. The application of this theory, however, is not a straight-jacket process or approach; it is determined by the context in that the principles are applied that determines the form of sustainable urban design (Aina, *et al.,* 2013). The local context remains key in the development of urban design guidelines for a particular local area.

This theory argues for sustainable communities as places where people want to live and work, and in the future. These communities meet the diverse needs of existing and future residents and are sensitive to their environment and contribute to a high quality of life. These settlements should be safe and inclusive, well planned, built and run and offer equality of opportunity and good services for all. The pillar of environmental sustainability aims at maximising the efficiency of land use through the conservation of energy and of natural terrain, the minimisation of pollution, creation of parks and green areas,

securing of open space and the maximisation of land-use efficiency through multidimensional and complex development.

THE INTEGRATIVE THEORY APPROACHES

The integrative theory approach was suggested by Sternberg (2000). The effort was much to do with the establishment of the theoretical foundation for urban design. Sternberg (2000) observed that urban design had been relying on techniques and ideas that have no clear theoretical basis and suggested an integrative approach to defining the foundations of urban design. He argued that "the ideas that inform urban design usually coalesce around contending approaches" and shared principles of these approaches should be integrated to establish a general theory of urban design. There are four elements of integrative urban design, including good form, legibility, vitality and meaning. For this chapter, there are concepts related to these four elements such as liveability, beautification and sustainability that have been referred to. Sternberg (*ibid.)* went further to provide some set of criteria that the integrative theory should have, including highlighting the underlying principles of contending approaches, addressing substantive urban design issues, awareness of the "constituents of the human experience of the built form", unifying economic and architectural traditions and being realistic and practical. These criterions are key in the integrative framework for sustainable urban design.

SYSTEMS THINKING

Systems thinking is a perspective of seeing and understanding systems wholly. As observed by McFadden (2018), systems thinking is a web of interconnections that creates emerging patterns over time. Cities across the globe face unprecedented social and environmental sustainability challenges. The problems they face are intricate and complex. They are products of interactions that vary with time and space involving multiple actors and disciplines composed of interconnected relationships often with nonlinear effects. Thus, the application of systems thinking is strongly considered in the subject of cities to acquire an understanding of urban problems through the study of urban interactions. Voulvoulis (2012) argues that problems can be viewed as products of the interactions within a city, and also argues

that systems thinking embraces the union of interdisciplinary, integrated and holistic principles to create the mindset that addresses problems wholly.

Understanding a city as a whole and finding pathways to more sustainable futures, means integrating urban design, architecture, planning, strategic thinking and economic analysis, among others. It requires an appreciation of complex interactions between different urban systems. Hard and soft elements of city systems and the way they exist and interact should be considered. The built environment considers the hard systems that have easily quantifiable elements. An example may be a new railway urban design project which can reduce journey times in a city. This is measurable, but how are other elements of the city system measured, like community engagement, multi-cultural diversity or city liveability? This means systems thinking is a necessary tool in the subject of city design and liveability. It is imperative for informed dialogue and collaboration between professions in the built environment and civil and government engagement to produce sustainable cities.

CONSTRUCTIVISM

The constructivism theory provides a broad theoretical foundation at a high level of abstraction which could give professionals in the built environment a better understanding of their role. The theory is a result of a general acceptance of the insufficiencies of the systems theory. Constructivism is a set of assumptions on the nature of human learning that guide constructive learning theories and teaching methods. Merriam and Caffarella (1999) provide that constructivism is about how people make sense of their experiences. The constructivist epistemology emphasised that people generate their own “rules” and “mental models” that they use to make sense of their experiences (Kurt, 2011). Learning, therefore, is accepted as the process of adjusting their mental models to accommodate new experiences. In urban design and architectural education, the learning environment is based on the structure of design studios and these should provide the following:

1. Provide experience to students for construction of design knowledge,

2. Facilitate students to find alternative solutions to their design problems through multiple perspectives,
3. Present learning activities in a realistic and relevant context,
4. Make learners feel ownership of the process and feel responsible for their learning,
5. Create process-oriented learning strategies,
6. Practise the learning as a social activity,
7. Promote the students to use various representation modes
8. Generate self-awareness of the students
9. Form self-motivated and self-reflective students,
10. Encourage to use strategies, and
11. Make students respectful to multiple perspectives and world views.

Principally, the constructivist approach in architectural and urban design instruction combines the constructivist education basics and the information technology, intending to provide essential improvement in architectural and urban design education (Kurt, *ibid.*). The positive impact of technological developments on architectural and urban design education can be obtained by the implementation of hybrid educational systems which provide unification of traditional and constructivist attitudes in a studio environment. Constructivist principles in design education accomplish the idea of constructing knowledge to create meaning by doing and that the resulting knowledge 'creation' is unique unto the individual. For this reason, in architectural and urban design education, each student's level of learning gained from the studio process has a different value and the design products have unique characteristics. The learning environment in constructivist education is designed to foster intensive use of digital technology in the design process.

CONCEPT MAPPING

Concept mapping is the process of creating concept maps or diagrams that organise, represent and create knowledge. Concept mapping can be utilised by individuals or small groups with the latter referred to as collaborative concept mapping. Wheeldon (2011) also indicates that concept maps are further delineated depending on the author's theoretical and methodological orientations. The concept map demonstrates how an individual or group builds on previous knowledge to incorporate new concepts into a mental schema. Concept maps

have been used quite differently across the world and disciplines, but in the context of urban design and architecture, they can be used to organise and document city design ideas that can facilitate the achievement of sustainable cities. In terms of city studio, educators can use concept mapping to present new ideas and students can use concept mapping to demonstrate new learning (Yelich Biniecki and Conceição, 2016).

THE RATIONALE FOR STUDYING TRANSFORMING CITY STUDIO

Urban design and architecture are forces to reckon with in the development and liveability of cities. In other words, urban design and architecture are important in as much as the multidisciplinary study of cities and regions is concerned. These subject areas focus on the city as an agent of change and on the role of design in re-defining the 21st-century urban landscape, advancing new paradigms of research, practice and pedagogy to meet challenges of climate change, rapid urbanisation, among others. As an ever-changing dynamic place, cities are places where there is no need to wait for the next day or next week to play a part in their development and orientation. Thus, it is important to study the dictates of urban design and architecture, especially focusing on how to design liveable, beautiful and open urban spaces.

Transforming City Studio as a subject matter of transforming the design of human settlements through urban design and architecture is a key learning area in the built environment. It argues the fundamentals of how communities are shaped, focusing on their physical form. Urban design and architecture address the functional and aesthetic qualities of the physical environment at a range of scales, from the individual streetscape, park, or block to the larger community, city or region (Owen, 2020). Some of the important points to note in this instance are that Transforming City Studio matter is responsible for addressing the sensory environment where it affects how people perceive and use their environment. It is of great importance to note that people care about the look, feel and liveability of their communities and urban design and architecture argues that aspect to the built environment.

APPROACHES TO UNDERSTANDING TRANSFORMING CITY STUDIO

Understanding Transforming City Studio requires an engagement to real-world scenarios and skills necessary to creatively formulate design problems in cities. It is imperative to reintegrate the inherent complexity of urban systems and employ design operations that identify and cultivate networks, correlations, dependencies and interactions while simultaneously exploring multiple agents and avenues of transformation. To understand transformation city studio also requires an understanding of multiple approaches to urban design, many of them originated, tested and applied by morphosis throughout history. Examples of influential urban developments informed by experimental and analytical studies in urban design, architecture and society, broaden the horizons of understanding transforming city studio.

Designing and redesigning the city through effective studio designing can be used as an effective tool to give places new meaning with limited challenges. The designing and redesigning of city space can, therefore, be viewed as an important factor in not only promoting the sustainable development of cities through the creation of green spaces, but also as a way to boost the economic status of cities. Strategies for transforming the city can include engaging the conceptual model of green urbanism through the creation of zero-carbon cities that are supported by urban agriculture, densification and urban renewal strategies (Lehmann, 2010) and these measures usually revitalise the city centre. Another example is that of Downtown Springfield, which is changing urban fabric with the most visible example being the construction of the MGM Casino Resort with some project objectives encompassing the designing and creation of pedestrian-and-bicycle friendly corridors in East and West Columbus to allow for slow traffic movements and the creation of small social places to sit together (Alpay *et al.*, 2018). Such developments do not only improve the area's attractiveness, but improve the vitality and economic activity of the area.

The redesigning of downtown Lubbock (Figure 1), Texas, in what was termed the urban Courtyard Project, that drew upon the courtyard traditions of Spain to restructure urban alleys into a series of interconnected courtyards, was done after getting feedback from the

public, industry professionals and the civic leader after engaging in a series of small charrettes and feedback sessions as this aimed at promoting the needs of society as opposed to private needs (Elliot and Driskill, 2016). This shows the importance of incorporating the needs of the people in development as it also helps inducing resistance to change.

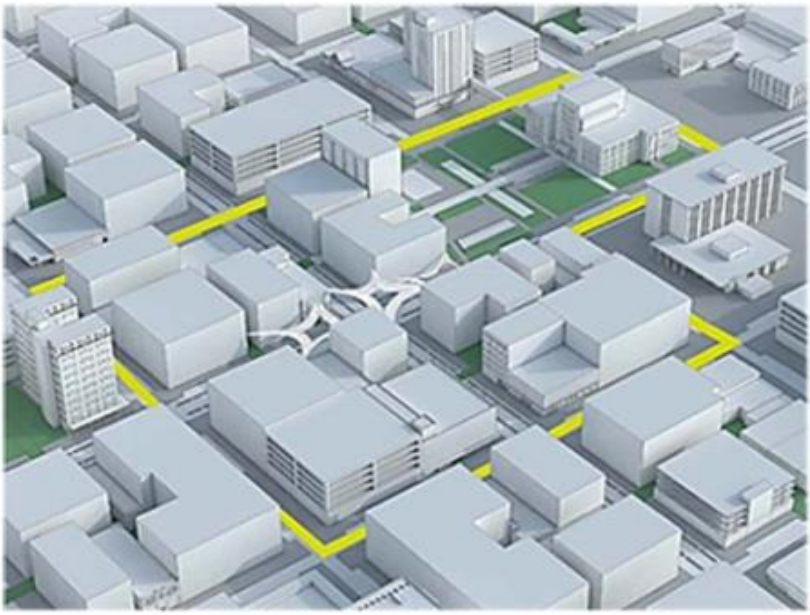

Figure 1: A digital model of the urban courtyards' projects applied to the centre of Lubbock Central Business District including the proposed plaza with the Lubbock County Courthouse *(Elliot and Driskill, 2016).*

It is, however, argued that although many of Green Urbanism strategies are universal and transferable, no single formula is applicable everywhere (Lehmann, 2010) and hence the need for innovativeness by planners in different regions/countries/cities to formulate on home-grown solutions for the greening of their areas. In improving city functionality, the transport system of a country must also be operating smoothly.

GLOBAL CASES IN THE STUDY

Cities have undergone a myriad of transformative phases throughout their history. Owing to rapid urbanisation and globalisation, the smart sustainable cities initiative has been launched across the world to provide the necessary skills and direction for the development of liveable and environmentally sensitive cities. Kim and Kwon (2018) argue that achieving successful transformation towards smart sustainable cities constitutes a significant challenge for policy-makers and one such challenge is the inclusion and collaborative framework of professions of the built environment such as urban design and architecture. Cities are significant in terms of development, they provide a platform for people to live and work, establish services and operations for citizens in a wide range of ways and facilitate close contact between local government officials and citizens.

.In an international context, the theories and ideas that dominate today's urban design discourse have been defined and categorised in various ways resulting in differing categorisations and definitions such as "territories of urban design", "images of perfection", "urban design force fields", integrated paradigms in urbanism", "urbanist cultures and approaches to city making", "new directions in planning theory", "a model of good design" and "typologies of urban design". As observed by Haas (2008, 2012), the three dominant ideas that stand out are new urbanism, post urbanism and sustainable urbanism. There are other important categories such as everyday urbanism, ecological urbanism and landscape urbanism. Kim and Kwon (2018) then argue that in the end, all these paradigms share a concern with shaping and composing public spaces and creating liveable and healthy places of variation, interest, familiarity, interaction and contrast.

These differentiate paradigms in terms of urban design and architecture as some work in the traditional way of advocating public squares and perimeter blocks as integral to the shaping and composition of cities based on historical and proven principles (new urbanism and sustainable urbanism), while others turned to vanguard approaches referring to globalisation, mediatisation as a theory that argued that the media shapes and frames the processes and discourse of political communication and the society in that that communication takes place and contemporary architectural transformation (post urbanism, city marketing and place branding schemes).

Some looked for narratives and hidden dimensions in the micro-sphere of the public realm (everyday urbanism) and others turned to solutions connected to urban ecological design and systemic landscape design schemes (ecological and landscape urbanism). This chapter pays much attention to the open urban spaces that have a profound history in the study of urban areas in the world. As observed by Kim and Kwon, (*ibid.*) historically public space originate from long-established community characteristics similar to the ancient Greek Agora and the Roman Forum, was a reflection of the social solidarity and community life of the citizens. Publicing spaces were an aggregate of the elements that defined its character such as traffic, history, culture and physical elements. In this same sense, Kim and Kwon (*ibid.*) argue that the interest and necessity of sustainable design can be found in the macroscopic change of the global environment, each country's trends in the process of global agreement change and implementation, and thus urbanisation and increase in the desire for public space improvement.

Kim and Kwon (*ibid.*) indicate that as the physical boundaries between cities have been broken down, the environment has become an important variable in urban design. European countries, in particular, share similar cultural and ethnic backgrounds but show prominent regional differences. Therefore, the architectural, landscape and urban devices based on the public urban space, are divided into northern, middle and southern regions, as observed by regional characteristics.

This has a bearing on how cities are planned for or, rather, designed. A look into the middle region of Europe that consists of Austria, Germany, France, the UK, Hungary, Latvia, Netherlands, Romania, Serbia and Slovenia shows that the design of cities is affected by the visual ground that is effective because it is suitable for architectural form as scenery. In the middle region, the focus of urban design and architecture is on the physical ground that people use directly. It emphasises environmental sustainability by enabling people to maintain a pleasant environment during use. The southern region has a ground that combines natural resources such as water or wood to cope with high temperatures.

In light of the above, city studio that is understood as the platform for urban design and architecture should take into account the priorities of each region. Cities continue to grow and it is nearly impossible to

imagine the scale that they will come to reach. Hence the design of cities oriented towards urban sustainability is a task that should be carried out by the millennial generation.

REGIONAL CASES IN THE STUDY

Urbanisation in Africa is rapid and it is safe to argue that Africa is catching up and African cities are growing fast. As observed by the World Economic Forum, Africa's population is expected to double by 2050 with the majority of growth happening in slums. Thus, Lucchese (2017) argues that it is time to act to avoid uncontrolled and random urban expansions and consequently unsustainable and vulnerable urban landscapes. However, Lucchese (*ibid.*) poses a question that asks on the relevance to talk about urban design in a continent where major issues are access to basic needs such as water, food, sanitation and electricity. It, thus, points to the fact that the approach taken on urban design outside Africa is not suitable in Africa, a continent bedevilled with many development challenges. In this regard, Lucchese (*ibid.*) argues that the reality of urbanisation in Africa is that it is less about aesthetically pleasing schemes, which are often conceived in isolation and only for the privileged few and more about access to basic infrastructure, education, jobs and housing and all that makes for thriving urban living. Many foreign developments are based on an aspirational vision, but typically cater only for a wealthy segment of society, leaving the majority in poor conditions. Instead, visions that residents can relate to and experienced practitioners that are sympathetic to local needs are required to build resilient and sustainable urban environments.

Urban areas have evolved over time in Africa and the potential for African cities to grow exponentially become dense as urban metropolis have always deeply fascinated people. The Urban Design Group (2017) indicates that the idea of massive cities, containing bustling millions has filled science fiction for decades. Mega cities are fairly a new phenomenon in terms of urbanism and the growth of Africa's megacities is still managing to take place in a unique context. Lucchese (2017) posits that African cities are growing incredibly rapidly, in many cases without the supporting industrial development that has accompanied it elsewhere. These cities and mega cities are bedevilled with challenges such as food security, lack of clean drinking water, poor sanitation, energy challenges and poor health services. Beyond the challenge of basic needs are those of a more complex

socioeconomic nature: housing, transport, environmental protection and job creation. Globally, the solution to these problems has been to leverage public-private partnerships. But in these environments, often defined by poverty, conflict and political instability, how is the private sector to be encouraged to engage in a supportive and not exploitative way? Yet all of the wicked problems being faced are equal opportunities for innovative urban planning solutions, finding approaches that end in more sustainable, equitable and liveable cities.

An examination of Kinshasa in the Democratic Republic of Congo (DRC), one of the fast-growing cities in Africa, highlights that Kinshasa is gaining 555 000 people a year with the vast majority moving into informal settlements and living well below the poverty datum line. This development trajectory represents the growth pattern for almost all of Africa's cities and megacities. Thus, planning for a change on this scale represents a major undertaking. This change requires long term planning and the creation of organisations that can only respond rapidly to present problems and better equip the continent's urbanists to face these challenges. Thus, the scale of urban design and city planning means it has traditionally been large and slow, or strategic and cautious. Jackson (2017) argues that this can represent a complete disconnect between the designer and people's daily lived experiences. Hence facing challenges on this scale is going to require a flexible and ambitious approach, with interventions that are small and fast and yet still contributing to an overall strategy of development and sustainability.

In light of the unplanned or informal nature of the growth taking place in African cities, the role of the urban professional, i.e. the urban designer, planner and architect needs to be viewed differently. When the vast majority of people are operating outside official systems, either due to economic barriers, socio-political reasons or the conceived illegality by which they inhabit space, then the top-down and authoritative techniques traditionally used for designing and building cities, might no longer be appropriate. People flooding into Africa's cities are almost universally young and coming from the rural areas. This indicates an opportunity to rethink how cities engage people in inhabiting and building their environment allowing for a more human centred design approach. All of this shows that there is exciting potential for African cities to be at the forefront of development and innovation as far as the design studio is concerned. As observed by

Jackson (*ibid.*), the work to be done and the solutions being developed in Africa's megacities can help shape more than a purely local body of knowledge. They can contribute to the global discussion on how future cities should be made.

Urban design and architecture in the contemporary period have largely been influenced by the new urban agenda. For Africa, this remains valid and a target so that liveable cities are created. The United Nations Sustainable Development Summit on 25 September 2015 adopted the 2030 Agenda for Sustainable Development, including a set of 17 Sustainable Development Goals (SDGs) to replace the previous Millennium Development Goals (MDGs). A notable addition to the new list of goals is number 11, the Urban Goal, entitled Sustainable Cities and Communities: make cities inclusive, safe, resilient and sustainable. However, noble as the new urban agenda sounds, Africa is taken further from the vision as the new genre of plans emerging in the last few years are seen by other schools of thought as "urban fantasies". These new plans are usually compiled by international architectural and engineering companies and suggest an urban future echoing Dubai, Singapore or Shanghai. An argument raised here is that these plans largely depart from the reality on the ground and are equally, if not more, excluding of the poor than the older colonial plans. Watson (2017) argues that they assume either that the existing informal city is cleared away to be replaced by the new, or that brand new satellite cities will rise on green-field sites. They are often branded as smart cities or eco-cities.

A key example of such scenarios in the design of cities in Africa are the new satellite city visions such as Nairobi in Kenya and Hope City in Ghana, promising a modernised and sanitised living environment for the middle classes far removed from the squalor and congestion of existing cities (*ibid.*). Hope City, designed by an Italian architect who was evidently inspired by African beehives, is a particularly futuristic conception of buildings that contain all of the facilities needed for their resident and working populations and removes the need to go outside at all. Other cities are creating large land areas through infill to create new urban extensions. Kinshasa is one of Africa's largest and poorest cities, yet a major land infill of the Congo River will support up-market retail and residential developments and in the process, many small farmers along the banks of the river will have their livelihoods destroyed. Eko-Atlantic is on an artificial island, off the coast of Lagos,

the island stretches for over 10km and will allow some 250 000 people to disengage themselves from the congestion and pollution of existing Lagos. These plans propose future cities that are unsustainable in the extreme and are inappropriate in terms of climate, available infrastructure (particularly power) and affordability ().

LOCAL CASES IN THE STUDY

Human settlements in Zimbabwe evolved from entirely scattered and sparsely populated rural settlements with no cities and towns except the long-deserted pre-colonial city states of Great Zimbabwe, Khami and Dhlodhlo. The coming in of the urban front because of the colonial era that saw white settlers establishing towns for several reasons in their endeavour to colonise Zimbabwe. Munzwa and Jonga (2014) argue that one cannot discuss urbanisation without making reference to colonisation and its impacts. They indicate that the mission of the settler was to take occupation of the land and make it his home, by exploiting all the available resources to his best advantage. One can argue that the design of cities and towns in Zimbabwe was influenced mostly by foreign standards and innovations that tried to make the settler comfortable in Zimbabwe. Of notable development in Zimbabwe is the City of Harare that was originally called Fort Salisbury.

The City of Harare was established as a small administrative centre by the Pioneer Column in 1890 at the foot of a kopje called Harare. As observed by Machakaire (2015), the prefix, “Fort” appeared on the city’s name because fortification was a notable and necessary element of the early colonial towns because of the perceived need to protect the white settlers from both physical attack and disease epidemics presumably from potential hostile and disease-carrying natives. With this in mind, the key design parameter of the early colonial city then was segregation and it was underscored by racial theories. Machakaire (*ibid.*) goes further to argue that such a parameter immensely contributed to the current form of the city that turned and set the tone for current planning practices and frameworks. Njoh (2009) also indicates that the exclusivity of the colonial towns was further strengthened by urban design standards that aim at matching the standards in the colonial power’s country, Britain.

EMERGING DEBATES IN THEORY, POLICY AND PRACTICES

Cities have long been centres of cultural, political and economic dynamism. Kinkead and Johnson (2019) argue that as we looked to

2020 and beyond, urban density in many parts of the world was predicted to continue escalating at unprecedented rates. Thus, city leaders, urban planners and designers are challenged to address a broad range of environmental, systemic, infrastructure and socio-economic issues related to the design of cities. Kinkead and Johnson (*ibid.*) indicate that global population estimates are forecasted to reach 8.1 billion by 2025. As density increases, many communities will struggle to mitigate harmful environmental consequences that stem from unsustainable and inequitable growth models. Problems in the cities will rise and they are seen mostly through deteriorating air and water quality issues, diminishing food and water supplies, soaring energy consumption, increased pollution, chronic health crises and more. Hence within architecture and urban design fields, there is an expectation to see a shift in focus from improving building-scale performance to rethinking systems and networks, safeguarding against infrastructure breakdowns that often cause increased inequalities for most vulnerable citizens. Kinkead and Johnson (*ibid.*) argue that the practice of urban design authorities will shift as “cities, institutions and communities will turn their attention away from building-scale sustainability to focus on adaptation and implementation of more equitable support structures within communities”.

The emerging difficulties envisaged in cities of tomorrow calls for a massive adaptation strategy at all scales. Baumgartner (2019) argues that the management of the emerging difficulties of cities requires city planners, urban designers, systems engineers and policy strategists to develop robust solutions together. Thus, the design of urban areas must be broadened to include issues of inclusivity and opportunity, while creating a richer context of urban districts, neighbourhoods and infrastructure. Built spaces designed for a single purpose will increasingly be adapted or re-used to accommodate a more robust mix of purposes with thoughtful design and redevelopment strategies. In case of abandoned uses like factories, defunct rail corridors, alleyways, outmoded industrial and waterfront infrastructure and underutilised office parks and shopping malls will transform into sustainable urban systems that address a variety of evolving community needs.

Mobility is essential to the success and liveability of our cities, facilitating access to workplaces, educational opportunities, healthcare, goods and services that are foundational to thriving urban centres.

King (2019) presents that for the better part of a century, the way cities were planned and experienced, they were dictated largely by the automobile. However, unintended impacts on communities came, including unsustainable sprawl, congested roadways, unsafe and unattractive streets, concentrated poverty and inequality. Transport remains a significant impact on the environment and urban design and architecture technologies and innovations will pave way for more resilient transportation solutions and alternative multimodal transit systems. Johnson (2019) also argues that autonomous and connected vehicles will force planners and designers to think about new ways of street right-of-way and use, leading to more flexible and equitable forms of mobility.

The design industry (urban design and architecture) are called to educate municipal and institutional leaders on the impacts that changing technologies, human behaviour, fiscal constraints and regulatory structures bring to bear on the built environment. This means that the design community must be active in establishing initiatives that drive the development of more resilient, sustainable communities. The design of cities needs to be comprehensive to ensure that environmental, systemic, structural and socio-economic viability for future generations. This can be realised through data-driven design and planning in the built environment, and coupled with inclusionary and innovative engagement, will ensure the successful design of cities. Kinkead and Johnson (2019) suggest that it will take progressive leadership combined with compassionate and data-driven design to create the change required for cities to continue to grow and thrive.

A Practical Approach to Transformative Studio

Urbanisation is changing the face of the planet and some may argue this change to be for better and for worse. The transformation of cities calls for a transformative city studio which means the way cities are designed should change to put cities on a sound footing as far as sustainable development is in context. Increasing urban challenges points to the need for urban transformation, yet it is not clear to many how to spur and sustain such required change. Transforming city studio cannot be achieved through a single conceptual lens. It is imperative to explore the multidimensional nature of the city and factors that affect their quality, that design ideas and management process that shape the cities and influence urban design practice must

be fully addressed. To transform city studios, planning authorities should not only concern themselves with how many public spaces they create but also consider the unique requirements of different places, avoiding a one-size-fits-all policy. City studio can be transformed only if a holistic approach to urban quality is applied, to avoid over-simplified planning regulations and homogenised standards (Gehl and Svarre, 2013).

Robust and liveable cities do not depend on design concepts but, more importantly, on how such spaces are created, safeguarded and maintained by public authorities and other stakeholders. Lang (2017) says the focus should be on how spaces should be designed and the integration of design quality within implementation strategies. Discussing the integration of urban design into government policy, Hall (2008) highlights the importance of a proactive urban design approach in connecting spatial fragments, creating better development outcomes and ensuring design quality.

To improve physical quality, planning authorities should express spatial planning policy and detailed guidance for developers. Global experience indicates that the number of published policies and the extent of their prescription has created good architectural quality, while promoting numerous public realms (Hall 2011, 91). The proactive urban design adds value by creating better and more attractive spaces, thereby enhancing urban functionality. This provides a clearer understanding of the influences that impact how urban spaces are used, providing more accurate predictions of its appropriateness for users and its broader context and establishing guidelines and policies to transform public realms (ICCPP, 2016).

LESSONS DRAWN

Cities are increasingly dynamic, complex and global in their impact. The chapter looked at the processes of city transformation through urban design and architecture to satisfy urban planning principles and paradigms such as sustainability. Some of the fundamental lessons drawn from this chapter include the realisation that urban spaces have been created throughout the world because of varying factors and theories of development. This means that for each city in the world, there is a story to be told and an example is that of colonial cities in Africa that developed because of political and defence reasons. These factors affect how these cities were designed and those colonial marks

are still visible even in the 21st century. However, it was also realised that cities are subject to continuous transformation as new components appear, disappear and reconfigure space over time. Architects and urban designers play a paramount role in changing the face of cities as they follow certain design parameters based on their client's intention and goals in the built environment. The chapter also assessed that the design of cities is also dependent largely on concepts such as robustness, resilience and sustainability that play critical roles in determining the types of designs and the skills required in city studio.

From the cases presented in this chapter, it has been observed that there is general agreement towards the future of cities as every case is pointing its future to the achievement of smart cities. However, literature suggests that there is no universally accepted definition of a smart city and that the conceptualisation of smart city varies from city to city and country, to country depending on the level of development, willingness to change and reform, resources and aspirations of the city residents. However, it is agreed that the objective of smart cities or, rather, smart urban design is to promote cities that provide core infrastructure and give a decent quality of life to their citizens. Global, regional and local case studies presented agreed that urban design and architecture as the most city studio professions and practices, can transform existing areas into better-planned ones, thereby improving the liveability of cities. Urban design and architecture are also important in the development of greenfield areas. Thus, smart solutions enable cities to use technology, information and data to improve infrastructure and services and these, in a way, improve the quality of life in the cities.

CONCLUSION AND FUTURE DIRECTION

Transforming city studio is of importance in the planning of sustainable cities. This chapter aimed at proffering skills for the overall development of robust urban design and architectural proposals in the planning and design of cities. Concepts, spatial structures, programmes and design rules were elaborated on and how they can transform cities into liveable and sustainable places. Urban design plays a vital role in fostering sustainable cities as urban spatial structure and form have considerable influence on the social, economic and environmental processes in the urban area. Thus, this chapter has proved that urban design and architecture offer an opportunity to guide city development towards sustainability. This

chapter recommends the establishment of appropriate guidelines and frameworks for making the city studio (urban design and architecture) sustainable. It is also recommended that liveable cities can be achieved only if the procedural, substantive, institutional, policy and methodological aspects of urban design and architecture are interlinked and guided by sustainability principles.