A Study of the Urban Design and Its Characteristics and Principles

Mohammad Reza Nematinasab

1M.Sc, Urban Planning

ABSTRACT: As urban areas become more congested, and concerns over the environmental damage that can be caused by vehicle emissions grow, many municipalities are adopting land use guidelines that encourage compact development. A city with greater density, they theorize, will reduce the need to drive by bringing services and retail closer to the areas in which people live. Urban development should be guided by a sustainable planning and management vision that promotes interconnected green space, a multi-modal transportation system, and mixed-use development. Diverse public and private partnerships should be used to create sustainable and livable communities that protect historic, cultural, and environmental resources. In addition, policymakers, regulators and developers should support sustainable site planning and construction techniques that reduce pollution and create a balance between built and natural systems. New sustainable urban developments or redevelopments should provide a variety of commercial, institutional, educational uses as well as housing styles, sizes and prices. The provision of sidewalks, trails, and private streets, connected to transit stops and an interconnected street network within these mixed-use developments provides mobility options and helps reduce pollution by reducing vehicle trips. Walking, bicycling, and other mobility options should be encouraged throughout the urban mixed-use core and mixed-use neighborhoods with easily accessed and well-defined centers and edges.

KEYWORDS: urban design, urban planning, development, urban design qualities

1. INTRODUCTION

Urban City planners, universities, and technology companies are increasingly viewing urban areas as natural places to develop living labs. Urban areas, particularly that are newly built, offer opportunities to implement novel infrastructure, conduct longitudinal research studies, and co-create innovation with an engaged and readily identifiable set of users. In addition, urban areas with active living lab projects are often attractive to residents, because

This work is licensed under a Creative Commons Attribution 4.0 International License.
innovation activities create added value for them. Even though living labs have different focuses and their innovation activities represent diverse goals, urban living labs fit definition of the living lab as a virtual reality or a physical region in which different stakeholders form public-private-people partnerships of public agencies, firms, universities, and users collaborate to create, prototype, validate, and test new technologies, services, products, and systems in real-life contexts.

At least three types of urban living labs can be distinguished. First, urban areas can serve as technology-assisted research environments, in which users give feedback on products and services through webpages or sensor-based methods. In this context, the goal of a living lab is to improve an urban environment or local services, such as housing or public transformation. Second, users can co-create urban artifacts and local services, such as communal yards, garden allotments, or daycare services. Third, a living lab can develop new kinds of urban planning using new tools and processes with the engagement of citizens. In this case, the goal is to facilitate the vision-making of the area and planning procedures, and increase the access and mutual learning of stakeholders. Thus, a living lab can provide a platform for stakeholders to participate in a city’s planning initiatives and decision making. In new urban areas, the boundaries between different living labs may become blurred because the many diverse actors may be simultaneously collaborating in multiple labs.

Planning, in general, means that the act or process of making, or carrying out of plans; specifically, the establishment of goals, policies, and procedures for a social or economic unit. As a complex governmental process, planning comprises policy-making and policy implementation, which involves the collection of data and information, the formulation of goals, objectives and priorities, and the devising and evaluation of alternative ways of attaining goals and objectives. The function of planning is to inform, to stimulate, and to guide those responsible for policy decisions, to reduce the incidence of guesswork in policy-making, and to enable the community to make intelligent choices about its future development.

Planning is a process for providing healthy and livable human settlements, as well as a blueprint of industrial growth and a road map of development. It helps in deciding objectives both in quantitative and qualitative terms. It is a setting of goals on the basis of objectives to be pursued and achieved by the administrative authorities. Planning involves purposeful design of the future through societal action as society and its members devise their own images of a desirable future. Planning is not only of importance to the society as whole but
also to the individual’s lives. As public resources are limited and its needs always exceed its coffers, efficiency is a vital element in their use. Planning, then, serves this purpose best.

1.1 Some Conceptual Issues

The word “urban” originated from the Latin word “urbanus” and from “urbs” which means the “city.” In English, the word “urban” means “of, relating to, characteristic of, or constituting a city.” In Turkish, however, the word for “urban,” “imar” has a different connotation than its English counterpart. “Imar” is a word which comes from the Arabic, and means “to construct,” “to repair,” “to make happy or gay,” or “to restore from decay.” The exact matching word for “urban planning” in Turkish is “şehir planlaması” which literally means “city planning.” The plural form of the word “imar” in Turkish “umur” means “orders,” “commands,” or “deeds,” etc.

The relationship between the English words “urban” and “city” is more obvious than the relationship between the Turkish words “imar” (urban) and “kent” (city). However, the concept of “imar” relates to the word “kent” (city) in the sense that the former refers to the reconstruction and renewal of the latter. The determination of areas such as “urban” or “rural” is generally connected to administrative, political, historical or cultural considerations as well as to demographic criteria.

The main distinction between the city, town and village is drawn based on the number of inhabitants as a city is more densely populated than a town, which is more densely populated than a village. Cities are defined – from a realistic perspective– as population aggregates, large, heterogeneous, and densely settled within a limited land area, in which persons are more often cultivated for specific gains and objectives rather than on an intimate face-to-face basis. This is because large aggregates of populations may lead to different pursuits that interest and attract people from different geographical locations. Anonymity and mobility are the other features of cities.

The word “urban,” it is argued, shall be reserved for the areas of 20,000 or more inhabitants, and that calculations indicating degrees of urbanization will be based on places of 20,000 or more and places of 100,000 or more of population. The reason why such assumptions should be accepted is that in the areas where population is under 20,000, typical characteristics of urban life are not likely to appear. However, this mode of definition ought not to exclude the determinants of size, heterogeneity, and density of population.
Another criterion for distinguishing between such administrative units is drawn upon the economic, social, and political structures of the human settlements. Villages are small rural settlements, whose inhabitants are mostly dependent on agriculture in which to live. In another words, the village economy is only viable with the development of agriculture as the dominant way of making a living, while that of the town is a function of increased agricultural productivity, the proliferation of the crafts, development of trade, and/or more efficient means of transportation.

However, the metropolitan economy mostly rests upon the combination of technological and organizational changes associated with industrialization and the emergence of the metropolitan complex with the large city as a nucleus for an interdependent hinterland. Cities, or metropolitan areas, compare to towns and villages, have industrial, commercial and residential areas; for which planning becomes more than a necessity.

As to the Turkish administrative system, the distinction is made between such divisions as “city,” “town,” and “village.” To refer to its administrative structure, cities are also called provinces. Besides the historical factor, there are – as explained above – several other criteria in declaring or defining a certain area as a “province,” such as a geographical situation and economic conditions, or public service requirements.

Finally, urban planning bears some relation to urban community and urbanization as well. The term “urban community” is defined as:

“a community characterized by a dominance of commercial, industrial, and service occupations; an extensive division of labor and its corresponding social complexity; an accompanying and underlying high density of population; and the development of coordination and social controls on a non-kinship basis.”

Definition of urbanization, however, refers to social, ecological, and cultural trends which produce positive developments in any or all of these four aspects.

In this context, “urban planning” may be defined as one of the planning deeds of government pursued as a means of improving urban environments and achieving certain economic, social and cultural objectives; as an effort of creating a spatial order of living together which meets human needs; as the determination, in the best interests of the society, of such a spatial order.

1.2 The Scope of Urban Planning
Urban planning is a term that encapsulates both science and art, which has strong relevance to several disciplines and brings them under a single umbrella. It encompasses almost all aspects of a city, whether it be physical, social, or cultural. In response to urbanization, these aspects vary from the construction of children’s playgrounds to highway or railroad infrastructures; from the construction of residential, industrial, or commercial sites to governmental plants and buildings. However, planning activity involves not only building or re-construction of a whole city but also the construction or restoration of a single building.

The public activity of urban planning is not just about the construction of such facilities for public use; it must also meet some cultural and social needs of society, as well as an answer to some aesthetic considerations. Ought urban planning to concern itself only with the present and future needs of the urban community – in a manner limited to the current modes of social and cultural change, or limited to devising remedies for the problems engendering these changes? The scope of urban planning will be varied based on answers to this question. The answer, indeed, prompts a distinction between two types of urban planning activity.

Boskoff distinguishes between corrective planning and creative planning, according to the scope of, and the aims pursued by, the urban planning activity. Although both types of activity relate to the physical and social aspects of planning, corrective planning is said to be preliminary to the planners’ fundamental objective – the creation of an urban region that provides the maximum in physical services and social amenities for its residents[29]; creative planning, on the other hand, being regarded as an ideal, a projected image, and a utopian perspective, directed to building urban areas “in which changes can be consciously selected and articulated with one another so as to achieve the highest level of experience and opportunity from the urban potential.”

Between the two lies “master plans,” a practical approach to both types of planning, which seeks to realize the ideals of creative planning and to confront the objections to it. Despite its feasibility and desirability, master plans are deviated from their original conception, focusing in practice on the physical features of the planning activity.[31] It therefore disregards the social, cultural, and political aspects of the planning; each has a part to play in shaping the identity of the urban area. The scope of the term “urban planning” ought not to be limited to the narrow meaning of the “master plan.” Therefore, both types of urban planning will be taken into account in this work.
In practice, urban planning is usually carried out through the preparation of “urban development plans,” which are and ought to be conducted in accordance with either the ordinances or the specific decisions of government authorities. In our modern society, no one should be allowed to perform any activity involving the exercise of such plans without the explicit consent of the authorized public body. Those who act against the rules and ordinances governing urban planning shall be punished by law. As urban planning is strictly governed by law, it carries by definition this sanction in case of violation.

In this context, the law of urban planning is not only applicable to the private actors but also to the public bodies. And the activity not only concerns itself with the public bodies’ acts of general character but also the individuals’ acts of a particular character.

2. THE KEY URBAN DESIGN QUALITIES

Evidence The Urban Design Protocol identifies seven essential design qualities that create quality urban design: the seven Cs. They are: Context, Character, Choice, Connections, Creativity, Custodianship and Collaboration. These are a combination of design processes and outcomes.

The seven Cs:
- provide a checklist of qualities that contribute to quality urban design
- are based on sound urban design principles recognized and demonstrated throughout the world
- explain these qualities in simple language, providing a common basis for discussing urban issues and objectives
- provide core concepts to use in urban design projects and policies
- can be adapted for use in towns and cities throughout New Zealand.

Context
Quality urban design sees buildings, places and spaces not as isolated elements but as part of the whole town or city. For example, a building is connected to its street, the street to its neighbourhood, the neighbourhood to its city, and the city to its region. Urban design has a strong spatial dimension and optimises relationships between buildings, places, spaces,
activities and networks. It also recognises that towns and cities are part of a constantly evolving relationship between people, land, culture and the wider environment.

Quality urban design:
- takes a long-term view
- recognises and builds on landscape context and character
- results in buildings and places that are adapted to local climatic conditions
- examines each project in relation to its setting and ensures that each development fits in with and enhances its surroundings
- understands the social, cultural and economic context as well as physical elements and relationships
- considers the impact on the health of the population who live and work there
- celebrates cultural identity and recognises the heritage values of a place
- ensures incremental development contributes to an agreed and coherent overall result.

Character
Quality urban design reflects and enhances the distinctive character and culture of our urban environment, and recognises that character is dynamic and evolving, not static. It ensures new buildings and spaces are unique, are appropriate to their location and compliment their historic identity, adding value to our towns and cities by increasing tourism, investment and community pride.

Quality urban design:
- reflects the unique identity of each town, city and neighbourhood and strengthens the positive characteristics that make each place distinctive
- protects and manages our heritage, including buildings, places and landscapes
- protects and enhances distinctive landforms, water bodies and indigenous plants and animals
- creates locally appropriate and inspiring architecture, spaces and places
- reflects and celebrates our unique New Zealand culture and identity and celebrates our multi-cultural society.

Choice
Quality urban design fosters diversity and offers people choice in the urban form of our towns and cities, and choice in densities, building types, transport options, and activities.
Flexible and adaptable design provides for unforeseen uses, and creates resilient and robust towns and cities.

Quality urban design:
- ensures urban environments provide opportunities for all, especially the disadvantaged
- allows people to choose different sustainable lifestyle options, locations, modes of transport, types of buildings and forms of tenure
- encourages a diversity of activities within mixed use developments and neighbourhoods
- supports designs which are flexible and adaptable and which will remain useful over the long term
- ensures public spaces are accessible by everybody, including people with disabilities.

Connections
Good connections enhance choice, support social cohesion, make places lively and safe, and facilitate contact among people. Quality urban design recognises how all networks - streets, railways, walking and cycling routes, services, infrastructure, and communication networks - connect and support healthy neighbourhoods, towns and cities. Places with good connections between activities and with careful placement of facilities benefit from reduced travel times and lower environmental impacts. Where physical layouts and activity patterns are easily understood, residents and visitors can navigate around the city easily.

Quality urban design:
- creates safe, attractive and secure pathways and links between centres, landmarks and neighbourhoods
- facilitates green networks that link public and private open space
- places a high priority on walking, cycling and public transport
- anticipates travel demands and provides a sustainable choice of integrated transport modes
- improves accessibility to public services and facilities
- treats streets and other thoroughfares as positive spaces with multiple functions
- provides formal and informal opportunities for social and cultural interaction
- facilitates access to services and efficient movement of goods and people

This work is licensed under a Creative Commons Attribution 4.0 International License.
provides environments that encourage people to become more physically active.

Creativity

Quality urban design encourages creative and innovative approaches. Creativity adds richness and diversity, and turns a functional place into a memorable place. Creativity facilitates new ways of thinking, and willingness to think through problems afresh, to experiment and rewrite rules, to harness new technology, and to visualise new futures. Creative urban design supports a dynamic urban cultural life and fosters strong urban identities.

Quality urban design:
- emphasises innovative and imaginative solutions
- combines processes and design responses that enhance the experience we have of urban environments
- incorporates art and artists in the design process at an early stage to contribute to creative approaches
- values public art that is integrated into a building, space or place
- builds a strong and distinctive local identity
- utilises new technology
- incorporates different cultural perspectives.

Custodianship

Quality urban design reduces the environmental impacts of our towns and cities through environmentally sustainable and responsive design solutions. Custodianship recognises the lifetime costs of buildings and infrastructure, and aims to hand on places to the next generation in as good or better condition. Stewardship of our towns includes the concept of kaitiakitanga. It creates enjoyable, safe public spaces, a quality environment that is cared for, and a sense of ownership and responsibility in all residents and visitors.

Quality urban design:
- protects landscapes, ecological systems and cultural heritage values
- manages the use of resources carefully, through environmentally responsive and sustainable design solutions
- manages land wisely
- utilises 'green' technology in the design and construction of buildings and infrastructure
• incorporates renewable energy sources and passive solar gain
• creates buildings, spaces, places and transport networks that are safer, with less crime and fear of crime
• avoids or mitigates the effects of natural and man-made hazards
• considers the ongoing care and maintenance of buildings, spaces, places and networks
• uses design to improve the environmental performance of infrastructure
• considers the impact of design on people's health.

Collaboration
Towns and cities are designed incrementally as we make decisions on individual projects. Quality urban design requires good communication and co-ordinated actions from all decision-makers: central government, local government, professionals, transport operators, developers and users. To improve our urban design capability we need integrated training, adequately funded research and shared examples of best practice.

Quality urban design:
• supports a common vision that can be achieved over time
• depends on leadership at many levels
• uses a collaborative approach to design that acknowledges the contributions of many different disciplines and perspectives
• involves communities in meaningful decision-making processes
• acknowledges and celebrates examples of good practice
• recognises the importance of training in urban design and research at national, regional and local levels.

3. URBAN LIVING LABS AS REGIONAL INNOVATION NETWORKS

A regional innovation system is understood as a system of innovation networks located within a certain geographical area in which firms and other organizations are systematically engaged in interactive and collective learning through an institutional milieu characterized by social embeddedness. It typically consists of different kinds of multi-actor networks including actors with different aims and knowledge interests [1]. Regional innovation networks can be categorized as follows: i) large, loose regional networks, ii) heterogeneous multi-actor
innovation networks, and iii) closed homogeneous public-actor networks ([2]. Within this classification, living labs represent multi-actor innovation networks involving actors from different sectors of society with a commonly accepted goal; a commonly accepted coordinator steers activities and interactive learning is emphasized in getting results. Regional innovation networks and living labs share the emphasis on open innovation and networking.

What are the crucial differences between these two approaches? First, regional innovation networks do not necessitate user involvement as living labs do. Second, they focus on the quality of knowledge creation and innovation process rather than actor roles and outcome accomplishment. An urban living lab can be seen as a special type of regional innovation network that puts emphasis on residents and their communities as users (i.e., ordinary people who want to solve their real-life problems). With regard to other actor roles, utilizers refer to enterprises and other service providers that want to develop their businesses in the area. Enablers include various public-sector actors and financiers, such as cities and area-development organizations that have far-reaching goals for regional and societal improvements, and that provide infrastructure and resources. Providers represent various development organizations, such as universities, educational institutes, and consultants offering tools and methods for research and development. All actors should acknowledge user participation and open innovation as key elements of the living lab.[5]

The most important lesson to be taken from regional innovation networks is their distinctive method of knowledge production, which emphasizes "learning by doing". The method is organized around a particular application and is heterogeneous, diffuse, and transient by nature. Innovators need to gather and combine different types of information from different types of sources at different times. This kind of knowledge production is called Mode 2, in contrast with Mode 1, which represents science-based innovation activity drawing on homogeneous accumulation of knowledge and clearly-defined problem solving within a particular discipline. Mode 2 activity dominates knowledge production in regional innovation networks and, arguably, in urban living labs, where the innovation process is more practice-based than theory-driven. Scientific knowledge from various disciplines can offer tools for problem solving but cannot supersede place-based knowledge that is inevitably required to reach working solutions.

Wallin (2013) further points out that problems in urban areas vary in complexity [3] and therefore different kinds of problem solving techniques are needed in urban planning. First, there are simple complex problems, such as bus routes or energy consumption, that can be
demanding but still solvable through special expertise and Mode 1 thinking with a top-down process. Second, there are problems arising from disorganized complexity, such as the availability of services and workplaces, unemployment, or segregation, that are difficult to comprehend and handle due to their multidimensional and changing nature. These types of problems call for the emergence of Mode 2 thinking and a bottom-up process. Third, there are problems of organized complexity caused by a multiplicity of organizations that seem rational and well-steered but “end up in a [rigid], competitive, and overlapping system of administration that triggers wicked urban problems”. Problems of organized complexity can be especially compelling in urban living labs that involve public sector organizations, such as cities and municipalities, which are characterized by top-down planning and steering and which may contradict bottom-up innovation processes as well as parallel bureaucratic top-down processes.

Melkas and Harmaakorpi (2008) argue that proactive networking is closely linked to knowledge creation because innovation potential lies on boundaries between different groups and, consequently, actors able to span them are at higher “risk” of having good ideas.[4] Actors also need to create shared long-term goals and prioritize them over short-term benefits; this process requires mutual trust and commitment. An urban living lab should be flexible and adapt to rapid changes, but simultaneously be able to guarantee its stability in terms of crucial skills and accumulating knowledge. Coordinators of networks need strategic leadership and communication skills, as well as visionary thinking. To summarize, previous research suggests that proactive networking, practice-based innovation, and commitment to long-term development, accompanied by strategic leadership, are success factors for urban living labs. In the next section, we present a case study of Suurpelto, a living lab in southern Finland, to better understand characteristics and success factors of urban living labs [6].

4. TOWARDS CONCLUSION

Good urban design will produce new environments that have a deeply considered response to place and context; incorporating a creative and where appropriate exciting response to design challenges. It produces lively places with distinctive character; streets and public spaces which are safe, accessible, pleasant to use, easily managed and owned, and where appropriate human in scale. Achieving high quality and inclusive design requires a good
The design process that applies the right skills and knowledge at the right times. Ultimately, the creation of successful places depends upon using skillful and creative designers, and the existence of a Steering Group with vision and commitment. It must be grounded in knowing how a place works and who it is for, in particular drawing upon local community knowledge. Collaborative working across disciplines and between diverse groups and interests is critical. For these reasons, place making and achieving urban design quality pervades the advice contained in this Guide. It brings together all of the project themes, perspectives and disciplines and should, if pursued with imagination and conviction, make a significant contribution to delivering positive human experiences and strong social contexts.

REFERENCES


This work is licensed under a Creative Commons Attribution 4.0 International License.