

A Review of urban design projects and theories: types and criteria

Abstract

This article reviews urban design projects in terms of types and criteria. It categorizes urban design projects and identifies the criteria based on which an urban project comes to fruition. Reviewing categories and successful factors for urban design projects may support urban decision makers and activists to enhance their activities more systematically. In addition to an extensive urban design literature review, the consensus from various professional panels is generated through structured questionnaires. Some groups of urbanists including architects, urban designers, planners, sociologists, and urban managers have continuously taken part in the surveys. In the first stage, proper urban projects are suggested by various groups. After categorizing the suggested projects, next surveys have continued structurally to discover, summarize and evaluate these selections. As a result, four urban project types and three main criteria have been summarized.

Keywords: types of urban design projects, design theories, design success and failure, evaluation of development plans

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Introduction

Even though some models and measurement tools have been used to compare plan outcomes with plan intentions, more reports with new methods are needed for investigation of implemented object-oriented planning success.¹ This article tries to identify the type of urban design projects as well as the successful criteria for these types of projects, based on the literature review and knowledge of professionals. Understanding why certain planning succeeds should be one of the main occupations of planning theoretical and empirical inquiry. However, the determination of what makes a plan or policy successful or unsuccessful is wide open. When divorced from the outcome or implementation, the notion of success in plans and policies is controlled by the interpretation of the evaluator.^{1,2} Therefore, one of the main goals of this research has been to categorize different public urban designs and to decipher the main successful criteria for urban developments within the study timeframe.

In addition to reviewing extensive relevant literature and documents, the main research was conducted on a Delphi method through four main consecutive rounds¹ in order to explore, discover, and summarize urban projects criteria and types. A group of panels made up of experts across various professions were gathered to ensure diverse perspectives have been engaged. It includes urban designers, urban planners, urban sociologists, architects, and urban managers. The experts answered the relevant and structured questionnaires. The level of the projects has been limited to urban level, thus micro scale projects, regional decisions and policy-based plans have not been the target. The technique applied to this research, for discovering prominent urban projects, can be considered as a unique method in terms of diversity of participants, number of rounds and wide range of projects. Neither assumption of the type of projects nor successful criteria were predetermined in this research method. All the results have emerged purely based on the final panelists' agreement.

The outcomes of this report will hopefully pave the road for more successful urban projects and show which urban projects have or have not been taken into account. Helping decision makers, planners, city

researchers and urban advocates to advance the future urban projects in Iranian cities, has been an implicate goal of this study.

A classification of theories and design processes

Various classifications based on different aspects are provided in terms of urban and architectural design processes, theories and projects.³ Although 'System designing' and a systematic look at designing as a 'manner of thinking' started in the twentieth century and somehow related to the military requirements of World War II, the intuitive or creative approach to the design was common since the beginning of architectural design processes. Alexander's thoughts highlight both rationalism and empiricism. However, he ultimately thinks of design as 'diagrams' or 'patterns' and believes that each design problem starts with an effort to achieve fitness between two entities: the form in question and its context. Broadbent pointed out three concepts of designing namely rational, empirical and pragmatic.⁴

Another aspect of design method may focus on the orientation or 'directions of the processes. It may deal with the 'product' by synthesizing several elements and converging them all in the design solutions. Or it could emphasize on the analysis 'process' diverging from the core of the problem. Substantive views in designing elaborate on the physical essence of built environment and products. On the contrary, there is the procedural view, which elaborates and explains the process of the built environment creation. For example, according to Colin Rowe's Collage City, designers create their works by adding to or reducing from the status quo that is a procedure which is more like the art of collage than any other form of arts.⁵

Some design theories judge and evaluate design works such as architecture and reveal some norms or values about the environment. For instance, Adolf Loos put his normative paper 'Ornament and Crime' up for debate in the early twentieth century, in the midst of economic concerns, political opposition and ultimately aesthetic criticisms. On the other hand, another group of theories, unlike normative views, just describe what lies there. Such views are called positive or classificatory views.⁶

'Design' is the common ground among fine and applied arts. Apart from architecture and urban design, which are categorized as 'applied arts', most 'visual arts' such as painting, graphic, collage

¹Some rounds included more minor rounds. A case was selected for the main research. But this article reports the general part.

and sculpture contain design. The design scope might be considered from different aspects, for example, from the aspect of design-related professionals, academic disciplines through theoretical or practical approaches, individual or group views and other similar dimensions.⁷

The level of the designer’s and user’s engagement in design processes has always been one of the most significant challenges. This is to the extent that from the aspect of the level of ‘designer’s role’ and people’s participation, there is more emphasis on participatory design than individualist and elitist design. Henry Sanoff’s writings have emphasized many instances of participation in design. He defines participation as the face-to-face interaction of individuals who share a number of values important to all.⁸

As for employing the ‘design tools and sources’, using computers is now considered the most recent dimension of the design process so that it has put forth new paradigms for designing. As a result, in the course of history, form and space ‘paradigms or models’ have been transformed into a novel design process. Therefore, from another view, if we take paradigms of creating form and space posited by architecture and urban design theorists into consideration, we can measure various dimensions and aspects in design processes.⁹ Table 1 indicates a classification of design process theories.

Table 1 Depicting the aspects and a classification of design process theories

No	Aspects	Classifications	Various cases in the course of history
1		Models and paradigms	‘Space and time’ to ‘space-time-information’ Formal or historical-philosophical
2	Roots	Manner of thinking	From empiricism to rationalism Intuitive, rational and participatory designing
3		Design tools and sources	From letters and words to using computers From internal sources to external origins
4		Position	Positive to normative
5	Direction	Process direction/ orientation	Product orientation to process orientation Analysis to synthesis Problem orientation to solution orientation Convergence to divergence
6		Design scope	Science, engineering and technology to various arts
7	Intensity	Designer’s role	Design-centered to participatory outlook Top-down to bottom-up
8	Outcome	Place and time	From place to placelessness From real to virtual but not actual spaces

Different type of urban design projects

Urban design products might be instrumentally prepared in different ways such as policies, plans, guidelines, programs, projects or designs to control city developments, conservations, and communities.^{10,11} Strategic plans can also be considered as tools for policy-oriented urban designs whereas for design-oriented approaches, urban design

frameworks and three-dimensional master plans might work as appropriate tools.^{12,13} American planning association has categorized and defined different development plans, upon urban areas or subjects, into comprehensive, urban design, regional, neighborhood, transportation, housing, economic, parks & open space, critical and sensitive areas, community facilities, downtown, corridor, redevelopment area, and hazard mitigation plans.¹⁴

In terms of urban design plans and projects, however, some of the primary classifications have been offered by different thinkers such as.¹⁵⁻¹⁷ Appleyard has classified urban design project, especially conservations, based on the level of interventions, into three conservations. First, deep conservation attempts to restore a historical area in a rigorous form. Second, surface conservation tries to maintain the physical appearance of a historic area. Third, deep social conservation ensures participation from local inhabitants and provides new services and amenities.^{2,15} Gosling and Maitland have categorized several well-known urban projects into different categories based on the program and type of projects:

1) Program

- City planning frameworks
- Central-area development projects
- New towns
- Villages
- High/medium/low-density residential neighborhoods
- Squatter settlements

2) Use types

- Conservation programs
- Rehabilitation projects
- Pedestrianization schemes

3) Particular issues

- Universities
- Fun fairs
- Alternative transportation modes
- Energy efficiency
- Design guides¹⁶

According to Shirvani, open spaces that can be defined as all landscape, hardscape, parks and recreational spaces in urban areas consists of different elements serving as parks, urban green space, tree, benches, planters, water, lighting, paving, kiosks, trash receptacles, drinking fountains, sculptures, and clocks.¹⁰ Jon Lang, in 2005, has classified urban design types based on their procedures or products. Procedural types of urban design include four classifications, according to Lang:

- 1) Total urban design is a type of design in which all services in all levels are controlled and prepared by one single team or a specific organization.
- 2) All-of-a-piece urban design type happens in collaboration between different teams.

²By referring to Appleyard, Golkar has summarized three kinds of urban design practices as development, conservation and community urban designs (Golkar, 2007, p37)

- 3) Piece-by-piece urban design type is when the development procedure happens organically with several teams but without any pre-planned collaboration between them. It occurs based on the market flow and the development is essentially controlled by the local policies.
- 4) The last type is plug-in urban design which means that projects will happen after installing infrastructure. Urban design product types can be of the followings as Lang writes:
 - a) New towns;
 - b) Urban precincts of which there are many types, new and renewed
 - c) Elements of infrastructure
 - d) Possibly individual items within the city that add luster to it such as clock towers, monuments, works of art and curiosity objects.

George Hazel and Roger Parry have divided 28 urban initiatives from all around the world, into three sections, each tackling a different area of urban design challenges. The first, ‘Arriving in the City’, profiles some of the world’s most successful gateways and transport interchanges such as airports, bus and taxi stations, ferry terminals. ‘Enjoying the City’, the second section highlights the ingenious approaches that can be taken to parks, shopping malls and public spaces, demonstrating that it is a large number of small-scale amenities that make a city fun. Finally, ‘Getting Around the City’, such as greenways, bike roads, LRTs, streetcars, bus ways, addresses what is the biggest challenge for most urban leaders – how to move people around in safety, comfort and speed.¹⁸ Sarah Gaventa in her book has identified urban spaces into five different ranges from high-budget projects to small urban spaces. Accordingly, there are squares and plazas, promenades and streetscapes, gardens and parks, transformation of old urban spaces into new uses.¹⁹ A typology is summarized in Table 2. Table 3 also demonstrates some examples for different types.

Table 2 Urban design typology

No	Thinker	Base	Classification	Date
1	Donald Appleyard	Level of Intervention	Deep, surface and social conservations Development, Conservation, Community Urban Designs	1979, 1985
2	David Gosling, Barry Maitland	Function	City planning frameworks, Central-area development projects, New towns, Villages, High/medium/low-density residential neighborhoods, Squatter settlements, Conservation programs, Rehabilitation projects, Pedestrianization schemes	1984
3	Hamid Shirvani	Tools	Policy, guideline, plan, program	1985
4	Robert Cowan	place	Urban design framework, development brief, master plan, design code, design guide	2000
5	Jon Lang	Services	Total urban design, All-of-a-piece, Piece-by-piece, Plug-in urban designs	2005
6	Korosh Golkar	Performance tools	Strategic plans work as tools for policy-oriented designs, and urban design frameworks in addition to 3D Master plans work as tools for design-oriented urban designs.	2009
7	Matthew Carmona	Function	Corporate space, civic space, consumer space, community space, domestic space, in-between space	2014

Source: (Rezaei, 2018)

Table 3 Design types and examples

No	Design types	Examples
1	Macro Urban Designs	Design Guidelines, Policies, Housing Projects, Affordability Plans Comprehensive and detailed plans, District and Subject Plans, Urban Renovation Suburban plans, New towns, Informal settlements integration, Downtown Development Plans
2	Transportation Plans	Highway Plans, Public Transit Plans (Such as bus lines, subways, street cars) or Cycling (Bike lanes) Ferry, Buses or Train Terminal Stations
3	Urban Architecture	Shopping Malls, Cultural Centers, Libraries, Airports, Colleges / Universities, Health Care Centers, Hotels Sport Centers, Entertainment Centers/ Theme Parks International Fairs/Exhibitions
4	Urban Open Spaces	Parks and Green Spaces, Sidewalks, Pedestrian Passages, Squares, Waterfronts and green path systems Plazas, Streets, Community Centers
5	Urban Elements	Urban Furniture, Monuments, Sculptures, Fountains, etc.
6	Specific Projects	Environmental Concerns, Energy Use, Sustainability Designs, Green Roofs, Biodiversity Plans, etc.

Source: (Rezaei, 2018)

Main criteria for success

The project success is apparently relative. Five panels of urban experts in the fields of architecture, urban planning, urban design, urban management, and sociology through four consecutive rounds,

based on the Delphi method, came to a consensus of identifying three success criteria: people needs and demands, leadership concerns as well as design quality.

Table 4 summarizes the criteria that the panel has offered.

Table 4 Summary of success criteria for urban design project

Priority	Criteria	Related factors
1	People Needs	Public Participation, Affordability and Personal Income, Housing and Residential Complexes, Social Inclusion and Female Needs, Disability Plans, Alternatives Prioritizing, Project Significance, Relevant to local identities, Desirability, Traffic challenges, public transportation, Green Space, Entertainment Centers, Tourism Plans
2	Management and Performance Concerns	Financial planning and Budgeting, Leadership and stewardship, Project Maintenance, Experts' Eligibility, Professional Ethics, Respecting National and City Wide Plans, Monitoring and Schedule Adherence, Site Work Inspections, schedule management
3	Design Quality	Sustainability Principals, Socio-economic Concerns, Local and ecological concerns, Accessibility, Appearance and Aesthetic Aspects, Identity, Place-making and Public Realm Considerations, Location-allocation, Site and Surrounding Considerations, Urban Design Standards, Comprehensive Study of Urban Planning, Feasibility, Considering Codes and Applying Proper Technologies

Source: (Rezaei, 2020)

The more public the project serves, the more successfully it works. Open spaces have become the most successful design types because those appear to be most demanded places for the general population. In spite of the significance of design quality in improving urban realms, publicizing and activation of urban spaces with appropriate programming and management could enhance urban projects notably.

The interviews conducted in this research confirm that the success of urban plans is highly associated with basic needs of people, management concerns, investors support, experts' eligibility, law and regulation bodies and design or plan qualities. Furthermore, the role of education system, media and presentation must be counted as the other factors that promote the level of success for an urban plan over the period.

Nevertheless, urban planning and city design should work comprehensively and systematically. It is not design quality per se which makes urban designs relatively successful. Diverse disciplines, multiple organizations, diverse needs, various status quo plans, socio-economic conditions, and urban projects' dependency on governmental bodies and decision makers, among many more other factors, influence the success of urban projects.²⁰⁻⁴⁵

Conclusion

A successful city plan comes out of a systematic, holistic and integrated model of thinking, strongly related to the national and local government as well as community structure. Community demands, appropriate participation, professional stakeholder engagements, proper leadership, fair budgeting programs, respecting local and environmental considerations play a crucial role in successful urban development. Discovering, categorizing and ranking the successful, implemented urban projects along with reviewing their success criteria from the viewpoint of experts facilitate the improvement of future urban designs for designers and decision makers. It also evaluates the quality of urban spaces within cities.

The physical form, beauty and project appearance do not necessary affect the success of a project. Rather it is the socio-cultural perspectives and planning processes that heavily affect the projects.

Therefore, in addition to design-oriented plans, appropriate policy-oriented plans, up-dated planning procedure and collective future visions are required for the sustainable and healthy development. Users for urban plans, designs and polices are all people. High priority should be given to public needs, people participation and local community satisfaction to allow a project or plan successful. The more responsive to the people's demands, the more successful the plans will be. Individuals must be able to reasonably affect and influence urban policies.

Apart from the importance of engaging people in the municipal decision making process, project performance, budgeting management and design qualities are the other significant factors for successfully implementing urban design types. A perfect plan, as well as a quality urban design process involving all stakeholders in different phases of plan preparation, approval, management, and implementation, will facilitate successful urban design.

Any successful urban plan or design requires meaningful connections and networks articulated to social, economic and cultural impact to the society. Understanding people's need plays a very significant role for urban decision makers. It apparently varies from community level to personal needs such as employment, public housing, public transportation, education, health care and entertainments. Accordingly, all types of city plans from macro to micro levels must follow these needs.

At the macro level, affordable housing plans, suburban and informal settlement integration require more attention. In the transportation plan category, further focus on cyclists and bike lanes are required. In the urban architecture types of projects, entertainment, healthcare and educational centers must be highlighted.

It is recommended to control the quality of urban projects. Running professional competitions targeting urban design at various levels will give societies supports to advance their city outcomes. Urban design standards and codes need to be revised, consolidated and amended to the current regulations by the highest level along with implementing appropriate supervision and monitoring processes. Establishing or developing professional urban design boards and committees at

different decision-making levels such as municipalities as well as encouraging local community engagement will improve the quality of future projects.

More discussions may analyze the correlation between the categories and juries' expertise, municipal staff or mayoral efforts, success criteria, project locations and so forth. Further studies and research might also utilize different methodologies to include either general population or different experts. Some might investigate the success of the projects based on different criteria such as costs, timing, and progress or project efficiency. Similar research may focus on non-physical aspects and take further socio-economic issues into account. Research on more recent plans could also complement the results of these studies. Studies may also concentrate on limited periods or specific types of implemented projects. On the contrary, it is also useful to contemplate on unbuilt projects in order to obtain further insights on success or failure factors.

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