

“Urban Design Code” as a New Guiding Tool for Urban Development in Egypt

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Abstract-Urban design combines a concern with the visual form and function of urban development with its fit in its surroundings and wider context. The concept of the public realm, achieving a good urban quality, a sense of place and the public significance of new development, is vital within the urban design perspective. In urban development, there is a need to propose and discuss new thoughts, approaches, or tools, which can support and guide the development plans, and form essential design principles needed for such development policies and appropriated for protecting and promoting urban character and local identity.

This paper introduces Urban Design Code (UDC) as a new urban tool that aims to guide urban development plans and manage change in urban societies, by ensuring good design principles for addressing urban character and harmony. The proposed UDC is not only enhancing intrinsic identity of existing urban character and architecture, but is proactively used as a reference code or a city-specific guide for new urban development. The paper methodology depends on;

1. Analyzing the UDC international concepts, thoughts, and experiences
2. Formulating a proposal methodology for integrating and contributing UDC in the national urban development plans.
3. Evaluating the Egyptian case for applying UDC concept.

The paper concludes that the UDC is an essential guiding tool for development plans to ensure applying strategies, adjusting quality, and enhancing local identity.

Keywords: *Urban Design Code, Urban Development; Character and identity; Urban Quality.*

1. INTRODUCTION

There is a need for facing or controlling the urban changing of the cities, for having a document that addresses the characterization of new forms of the city growth, which emphasizes a high quality environment, encourages innovative and sustainable design, recognizes and improves land use compatibility through design. Appropriate urban form will result when enhanced a greater sense of identity. That document may be reflecting the concept of “coding”.

Codes are not a new idea. According to (CABE), they have been used in one form or another since the Renaissance, and possibly earlier. Some of our most cherished developments, from the Georgian period through to the Garden Villages and New Towns, were based on adopted codes. There are several recent UK examples of the use of

urban design codes. The re-development of Hulme in Manchester in the early 1990s followed guidelines that were close to a code. More recently, the Prince of Wales’ development at Poundbury laid down a prescriptive code based on the principles of traditional urbanism, and His Royal Highness is sponsoring the development of codes for other projects within the Duchy.

The concept of an urban design code starts from the proposition that: *“the design of a new development can be planned and regulated to achieve a higher quality outcome.”* It introduces an increased level of design control in an attempt to exert greater assurance over the quality of the product. Most, although not all codes, are based on the further premise that there are certain rules or principles that apply to the process of making or re-making places that can be applied and interpreted for a given location and then captured in written and plan form,(CABE).

In the recent best practices in the 21st. Century, the urban design code appeared as an urban tool to:

- Promote urban conservation and local identity, the case of Fremantle, Western Australia 2011,(Agnieszka Kiera, 2011) .and the city of Edinburgh, Scotland, (Andrew Holmes, 2003).
- Enhance urban character and sense of place, the case of Victoria City, Vancouver Island, (Official Community Plan).
- Achieving a high quality built environment and protecting design quality in planning, (CABE 2004, and The City of Omaha Planning Department, 2009).
- Adjust and identify the urban harmony principles and criteria in the areas of special nature and urban values, the case of Egypt, (NOUH, 2010).

From the previous frame, the paper aims to;

1. Understand and identify the concept of coding as a guiding urban tool.
2. Clarify and Highlight the need for activating and contributing urban design code in the development plans
3. Analyze and evaluate international approaches and best practices to formulate a framework to establish urban design code
4. Evaluate the Egyptian case to document its positives and conclude development recommendations.

2. THE CONCEPT OF “CODE” AS A GUIDING TOOL
 Code, in the language, is “a systematic and comprehensive compilation of laws, rules of procedure or conduct, or regulations that are consolidated and classified according to subject matter.” (CITE 2008). Thus, a state may have a civil code, corporation’s code, education code, evidence code, health and safety codes, insurance code, labor code, motor vehicle code, penal code, revenue and taxation code, and so forth. Some codes are administrative and have the force of law even though they were created and adopted by regulatory agencies and are not actually statutes or laws, (CITE 2005).

So, code includes; laws, legislation, standard rules, procedures, and guideline frameworks related to important subject. In general, it is a directive tool.

- *Building Code*, for example, is a series of ordinances enacted by a state or local governmental entity, establishing minimum requirements that must be met in the construction and maintenance of buildings; it includes rules and regulations that specify the minimum standards for constructed objects, components and techniques. (CITE 2008). The main purpose of building codes are to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. The building code becomes law of a particular jurisdiction when formally enacted by the appropriate governmental or private authority. However, codes are important tool to ensure community’s good quality of life, it must have a legislative support to be implemented and applied. On the design level, there is a need for controlling and managing the new development along the wide urban scales. The need for a regulator tool to activate laws, design standards and rules, can be the design code.

- *Design Code* is “a document that sets rules for the design of a new development”. It is a tool that can be used in the design and planning process, but goes further and is more regulatory than other forms of guidance commonly used in the English planning system over recent decades. It can be thought of as a process and document – and therefore a mechanism – which operationalises design guidelines or standards which have been established through a master plan process. The master plan or design framework is the vision. It should be accompanied by a design rationale that explains the objectives, with the design code providing instructions to the appropriate degree or precision of the more detailed design work, (CITE 2005), as shown in figure (1).

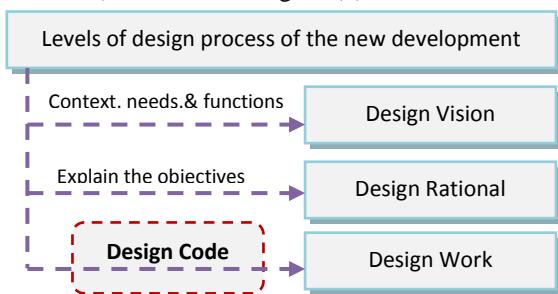


Figure 1, the role of design code in design process, source; adopted by author

In this way a design code may be a tool which helps to ensure that the aspirations for quality and quantity for new developments, particularly for large-scale projects, sought by the Government and other agencies are actually realized in the final schemes. It has the potential to deliver the consistency in quality exposed as lacking by the Commission for Architecture and the Built Environment (CABE)’s Housing Audit (2004).

With special application in urban levels, which focusing on the quality of urban spaces, redevelopment projects, enhancing identity and character of cities, and applying sustainability requirements in new development, an urban design tool has to be formed. It can be addressed as an Urban Design Code, UDC, which is a recent urban tool to apply and activate the standard criteria and principles guidelines for urban design.

3. URBAN DESIGN CODE’S BACKGROUND

UDC, in turn, is informed by and derived from the Source Code and therefore provides a specific and objectively contextual set of guidelines and defines the scope for compatible infill development. It defines the compatible grain, scale and massing of new development, with a schedule of the recommended heights and proportions for new infill buildings. The recommended heights, scale and proportions vary in each precinct of the city with identifiable character, such as the historic districts, downtowns, or the waterfront, and these features are objectively delineated through the Code’s analysis, (Agnieszka Kiera, 2011). The New Zealand Urban Design Protocol released by the Ministry for the Environment (MfE) in March 2005 defines urban design codes, UDC, as “the role in *achieving a high quality built environment in cities with the proper balance between development, conservation and environmental sustainability*, (MfE, 2011), as shown in figure 2.

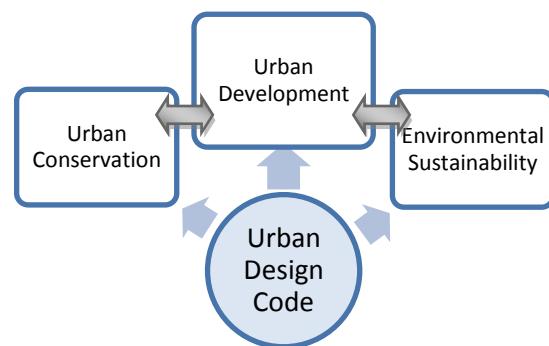


Figure2. Urban design code’s role in achieving balance of the built environment, source; adopted by author

Currently, several groups have adopted the coding approach. Some code templates, empirical practices and real developments are somehow jumbled in Table 1, (Yoshihiko Baba, 2009). Generative Code is a project that has evolved from pattern languages by Center for Environmental Structure, of which Christopher Alexander is a member. According to their website, a generative code is ‘a system of unfolding steps that enable people in a

community to create a wholesome and healthy neighborhood (Alexander, C. 1966).

- Duany and Plater-Zyberk (DPZ) has been developing an urban code template called *Smart Code*, which is '*a model transect-based development code available for all scales of planning, from the region to the community to the block and building*'. The code is intended for local calibration. The first version of Smart Code was developed as early as in 1993, based DPZ's earlier works, including widely known Seaside, Florida, (Yoshihiko Baba, 2009).

- The Prince of Wales hired Christopher Alexander and Leon Krier for *Urban Design Task Force (UDTF)* in 1980s and 1990s, now succeeded to the Prince's Foundation for the Built Environment (PFBE). The Prince's Foundation has worked on the development of codes for Coed Darcy (Llandarcy), Upton, Sherford and Crewkerne, and most notably, for Pundbury.

Country / State	City / Organization	Title	Version/ Date
US	Center for Environmental Structure	Generative Code	v.14 2005
	DPZ	Smart Code	v.9.2 2003
Florida	Seaside	Seaside Urban Code	1986
	Winter Springs	Winter Springs Town Center District Code	
	St. Lucie County	Towns, Villages, Countryside Land Development Regulations	
Virginia	Arlington County	Columbia Pike Form Based Code	
Texas	Farmers Branch	Truman Heights Revitalization Code	2007
Mississippi	Pass Christian	Pass Christian Smart Code	
	Gulfport	Smart Code	v.1 2007
Kentucky	Jefferson County	Land Development Code for Jefferson County	
UK	The Princes Foundation	Urban Codes & Pattern Books	2008
	CABE	Preparing Design Code	2006
England	Essex	A Design Guide for Residential Areas	1973
	Walker Riverside, Newcastle upon Tyne	Walker Riverside Design Code: Supplementary planning document	v.1.2 5/17/2007
	Upton, Northampton	Upton Design Code	v.2, March 2005
	Crewkerne, South Somerset	Crewkerne Key Site Easthams Architectural & Design Code	October 2005
	Cotswold	Cotswold Design Code	March 2000
	Taunton, Somerset	Taunton Town Centre Design Code: Adopted Supplementary Planning Document	October 2008

	Rotherham, South Yorkshire	Design Code for the Rotherham Town Centre River Corridor	September 2005
	Ashford Barracks, Ashford	Ashford Barracks Design Codes	March 2007
Wales	Coed Darcy Swansea, South West Wales	Code Darcy Master plan Area 1 Design Statement	A4946 June 2006
Japan	Machinami Iinkai of Kawagoe Ichibangai, Saitama	Kawagoe Machizukuri Kihan	24 April S62
Australia	West Australia	Liveable Neighbourhoods Community Design Code (LNCDC)	1997

Table 1. List of Urban Codes in Practice,
source; (Yoshihiko Baba, 2009)

- The Centre for Architecture and the Built Environment (CABE) is another organization in UK that explores *how urban design codes can help to increase property values, reduce crime, contribute to public health and ease transport problems*, (www.cabe.org.uk).

- Japanese cases are different to these organization-led developments. Although some developments, such as Makuhari Bay Town, which was developed with *strict design guidelines*,. In a word, they are still at its infancy. However, it is very interested because the codes have been developed by the local communities. Kawagoe and Kyoto are both historical towns with strong sense of communities, (Yoshihiko Baba, 2009). Table 1 clarifies and classifies the international development of urban design codes , which can result the following factors;

1. The variety of urban design code's titles; Generative Code, Smart Code, Urban Code, Design Code, Architectural & Design Code.
2. The variety of urban design code's roles; Development Regulations, Design Guidelines, for Residential Areas, Supplementary planning document, Design Statement, Revitalization Code.
3. The variety of urban design code's levels and applications; Seaside code, Centre District Code, Towns, Villages, Countryside Land Code, Riverside Design Code, Neighbourhoods Community Design Code.

Thus, urban design code is an important tool to having regulations and design guidelines for guiding and adjusting urban development, along many urban levels, with many objectives, and by many methodologies as it was applied in several successful cases. If so, development of template codes and the techniques to adopt them according to the local context will need to be developed.

4. THE NEED FOR URBAN DESIGN CODE IN URBAN DEVELOPMENT PLANS

The great challenges faced urban development around world became more complicated. The overlaps of urban components and levels, the great impacts of socio-economic, cultural, and political factors, the fast growth of population are the current prevailed problems within most of urban societies, (The Cities Alliance, 2006).

The situation is by far worse in developing countries, as shown in figure3, because of the long list of problems and deficiencies characterizing human settlements and settings, including: built environment quality, deteriorated fabric and infrastructure, lost continuity between the old and the new, poor management of resources and development processes, lack of visual references, cultural decay and alienation, (N. Abdel Kader & S. Ettouney, 1994)

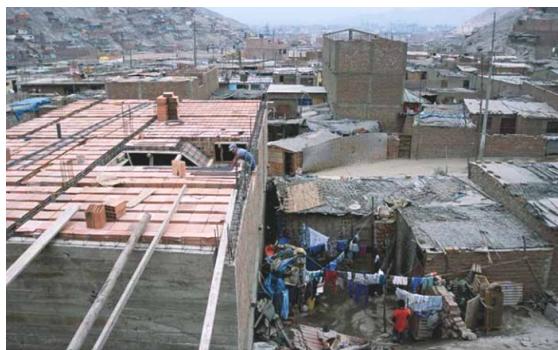


Figure3, new development problems in Lima, Peru
Source; the Cities Alliance, 2006

On the level of urban conservation and historic city's development, according to (Agnieszka Kiera, 2011), management of change in historic cities by ensuring that, while the regeneration and re-development of the built environment is taking place, the intrinsic identity of the existing urban character and architecture is not only protected, but is proactively used as a reference and city-specific guide for new development.

Thus, managing change in a city with a well-researched and established identity requires matters such as community safety, accessibility, sustainability, quality of life and protecting the heritage legacy, which are key concerns within the public realm and are significant elements within the urban design agenda. So that, the need for enhancing an urban tool to guide the urban development to ensure that strong pressures for development are directed to achieve better design quality in both the assemblage of buildings and their setting. An appropriate and durable fit of new development in its setting and ensuring high quality urban design is sought from new development across the whole city, (Andrew M Holmes, 2003).

To analyze the role of Urban Design Code “ UDC” in Urban Development, three main aspects can be concluded, as shown in figure 4, and detailed as following;

1. UDC and applying urban development strategy
2. UDC and adjusting urban development quality
3. UDC and enhancing urban character and identity

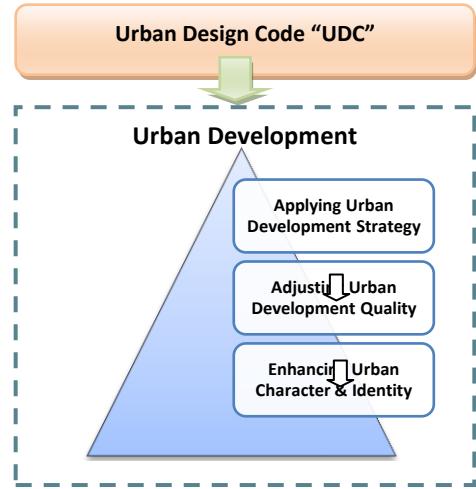


Figure 4. Three main aspects related to the importance of UDC in urban development, source; author

4.1 UDC & Applying Urban Development Strategy

A strategy, by definition, implies high-level guidance and coordination. The premise of city development strategies, according to (Doug Webster and Larissa Muller, 2006) is “that well-positioned and well-timed public, private, and civil society strategic in August H18 terventions can significantly alter a city’s development path. If national urbanization policy frameworks complement local strategies, change is likely to be deeper and quicker. Careful and effective initiation of an urban development process is essential to its success. Three principles associated with its success; (i) a strategy; (ii) a key stakeholders group; and (iii) guidelines for the process.”

So, on identifying strategy of urban development, the need for a guidelines tool is a significant issue. UDC, as a guiding tool, can apply and achieve the aimed strategy within each aspect level; governance, environment, spatial, and economy, as shown in figure 5, that will establish and formulate the detailed policies and action plans.

Thus, Agnieszka Kiera, 2011, connected the identification of urban development strategy with zoning of city's urban identity, which will identify UDC for each zone; “when preparing urban development strategy, it is important to make an urban identity zoning; city centre zone, historic zone, coastal zone, commercial zone, unplanned zone, .. etc, which includes establishment of the ‘big picture’ by identifying the strategic city areas available for new development, followed by the applying UDC guidelines for each area.

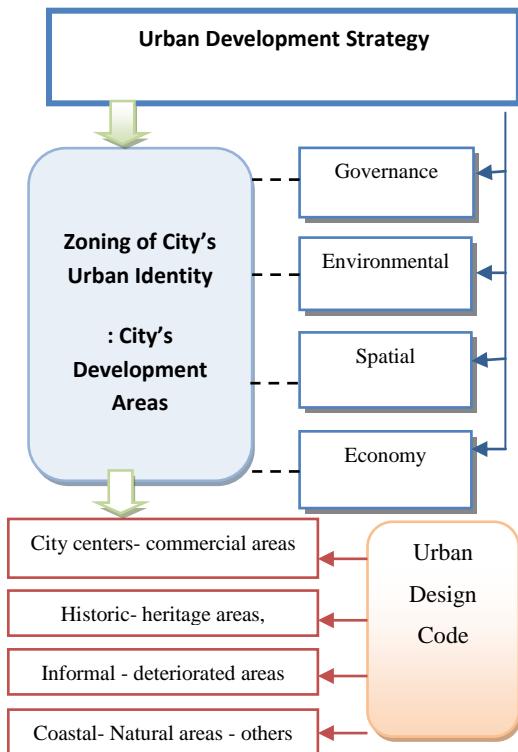


Figure 5, the main aspects and outcomes of urban development strategy and the role of UDC Source; author

Instead the objective clarity of an UDC for strategically defined areas with potential to accommodate higher density development is more likely to generate area-specific urban design solutions which maintain and enhance the overall harmony of the urban landscape.

4.2 UDC & Adjusting Urban Development Quality

Since dependability and quality in urban development and architecture, as well as the pace and legal reliability of public planning and approval procedures are playing an increasing role in competition between German and European metropolises, project and quality management are becoming more and more important in urban development. The satisfaction of aesthetic, social, and ecological quality criteria, local identity and image building, integration of individual projects into a longer-term strategy, and a democratic procedural culture are preconditions for the quality assurance in urban development, (Stephan Reiß-Schmidt, 2015). Thus, quality assurance in urban development requires applying quality standards (e.g., with regard to integration of urban levels and aspects, the quality of the built environment and public space, housing supply, mobility, etc).

According to the Commission for Architecture and the Built Environment, (CABE, 2004); “When the Governments plan to create new urban developments, this cannot simply be a matter of quantity. To create sustainable communities, we need to ensure that the houses and neighborhoods are well designed and are of sufficient quality to be places of which we can be proud, as Richard

Simmons- Chief Executive of CABE-believes, “in our haste to build new homes it would be a crime if future generations have to suffer the consequences of a lack of ambition to achieve design quality”.

It means that the quality of built environment is a great matter to be focused and adjusted in urban development.

Thus, all development proposals should respond to the standards of design, siting, density and spacing, reinforce attractive qualities of local distinctiveness and enhance areas of poor design. . (Basingstoke and Deane, 2008)

UDC, according to (Agnieszka Kiera, 2011), can be used as a guide to incremental, individual developments on the basis that each adds value to the well-defined ‘big picture’ (each zone of the city’s urban identity). It can provide greater quality assurance of good architecture in new developments than is the case with the conventional approach to planning. So instead of following a land use or individual developers’ driven model of regeneration, the UDC can be used as a tool to achieve what Christopher Alexander defines as ‘healing’ the city through a process where every act of construction contributes to creating a better ‘whole’ (Christopher Alexander et al, 1977). In ideal situation the UDC has the potential to facilitate the evolution of an increasingly and intrinsically unique, attractive, rich, multi-layered, sophisticated and livable city.

In the same way the zones of the city’s urban identity and UDC can provide a local solution versus to the trend towards globalization of the development culture, which relies on generic designs and mass production of urban sameness.

UDC also clarifies the relationship between heritage conservation and sustainability based on durability and resilience of the traditional built environment, particularly local architecture. This way it can be used as a counter response to the prevailing globally generic development, which relies on the cyclical replacement of what has been built before; represents an excessive waste of energy and is rarely sustainable.

In this respect UDC acts as a practical guide to extending the economic value of the surviving urban capital into the future by adding lasting value to what has survived to date.

- *The Case of Omaha city to Promote High Quality of Urban Development by UDC*

The urban design section of Omaha City’s Master Plan- Omaha, Nebraska, US- acknowledges the challenges in creating coordinated public spaces and streetscapes as developments are often designed and constructed independently of each other and lack coordination. The architecture and site design section promotes the following concept:

“The City will ensure that areas of the city are cohesive in terms of appearance and function. The City will require that the proposed projects be considered within the context of their surroundings and that they be consistent with an overall design concept that considers the interrelationships of buildings, parking, open space, pedestrian movement

and existing site features." (The City of Omaha Planning Department, 2009)

The quality of urban environment has been rated as one of the top three concerns by Omaha residents in a recent community survey. The urban environment is generally composed of public right of way (streets), private property and public open spaces (parks, plazas and squares). It acts as a reference guideline to match and harmonize between the following objectives;

- Create an attractive physical environment
- Ensure a cohesive and interrelated design of projects
- Emphasize people in the design of streetscapes
- Conserve existing stable neighbourhoods
- Reduce sign redundancy and clutter
- Prevent negative changes to neighbourhood character (slip-ins/conversions/spot zoning)
- Ensure a mix of necessary retail and personal services in all areas
- Reduce traffic congestion and cost by shifting from a "sparse hierarchy" to a more balanced transportation pattern with more emphasis on a "dense network" street system
- Preserve and protect unique natural and historic features which serve as a foundation for cities overall image

• *Understanding Omaha's UDC*

In August 2007, the Omaha City Council unanimously approved the adoption of urban design regulations for the City of Omaha. These regulations address critical physical characteristics of development that previously were unregulated which in some cases may lead to the reduction in quality for the built environment.

Implementation of these regulations is accomplished by gradually adding overlay zoning to existing areas of the City that have been identified in the urban design element of the City's Master Plan as candidates for becoming significant, "image forming" corridors for Omaha. These measures will ultimately stabilize important areas and help to improve the overall quality of development for Omaha, which was Omaha's Urban Design Code, which is implemented by;

1. Creating different overlay zoning districts; this allows for flexibility of use and adaptability to various existing contexts. These overlay districts are described in Chapter 55 – Zoning, of the Omaha Municipal Code, as shown in table 2.
2. Adjusting and identifying standard regulation for urban design elements within districts described under Article 22 – Urban design Applicability of the different provisions to the different Urban Design overlay districts. It includes guidelines and principles connected between districts zones and the elements of urban design" Design Provisions", as clarified in table 3

UDC of Omaha is intended serve as a guide for concerned citizens, developers, architects, engineers, other design professionals, city staff and the general public regarding the founding principles and intent of the urban design regulations for Omaha. In the UDC handbook each urban design provision has been illustrated with examples

organized into two categories; "appropriate" or "inappropriate". In general terms the "appropriate" illustrations fulfill the intentions of the code or are close in character while the "inappropriate" illustrations do not.

Not all "appropriate" photographs in this handbook depict the exact metric of the regulations; they intended to clarify the intent of the provisions.

The urban design zoning regulations are minimum standards of which the urban design principle they serve are deemed to provide contribution to the streetscape. Urban Development proposals may exceed these minimums but shall not provide less than these requirements; figure 6 is an example from UDC handbook references.

Types of Urban Districts	Code Section
Areas of Civic Importance Districts (ACI)	Sec. § 55-609
Civic Place Districts (CP)	Sec. § 55-627
Neighborhood Conservation/Enhancement Districts (NCE)	Sec. § 55-601
Industrial Gateway Districts (IG)	Sec. § 55-664
Major Commercial Corridor Districts (MCC)	Sec. § 55-681
Mixed-Use Areas (MU)	Sec. § 55-561

Table 2, zoning of Omaha Municipal Code, as the first phase of UDC applications for adjusting high quality of urban development

Design Provisions of urban district's zones	Types of Urban Districts city "Zoning of Urban Identity"					
	MU	MC	IG	NCE	CP	ACI
1.Sidewalk Areas						
2.Build lines & zones						
3.Ground-level transparency						
4.Service area screening						
5.Green parking areas						
6.Parking structures						
7.Site & building access						
8.Neighbourhood connectivity						
9.Location of utilities						
10.Signs						
11.Retaining walls						
12.Large retail building design guidelines						
13.General building design guidelines						
14.Tower locations: min/max façade Heights						
15.Important buildings						
16.Building design/architectural guidelines						
17.Significant						
18.Public spaces						
19.Mixing of uses						
20.Circulation systems						
21.Plazas and public places						
22.Green corners						
23.Storm water detention areas						
24.Required open space						

Table 3, standard regulations for urban design elements within each district, "Design Provisions"

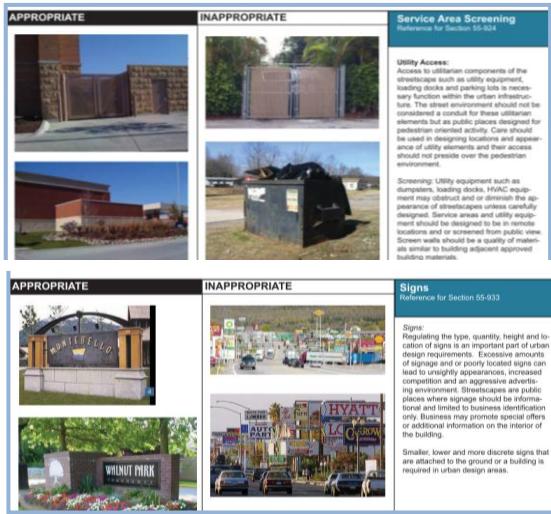


Figure 6, Service Area Screening and Signs Reference, source; (The City of Omaha Planning Department, 2009)

4.3 UDC & Enhancing Urban Character and Identity

Every town has its own story and distinctive character. Understanding that character and how it was formed is a cornerstone for urban development that aims to reinforce a sense of place (Alfrey, 2010). Thus, the importance of understanding and responding to the context is a fundamental message of urban design guidance, (BDBC, 2002). The distinctiveness of locality has been a central theme in the revival of urban design over the last decade and has been set out in planning policy guidance such as CABE adopted; urban design in the planning system ; towards better practice (CABE 2000). In this guide, the first of the seven objectives of urban design is that related to character, which is defined as a 'place with its own identity' where the objective according to (Ivor Samuels & Jo Clark, 2008) is: "to promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development, landscape and culture."

Character & Identity of places are a rather complex notion that combines physical and non physical aspects and reflects collective features of the built environment and the culture of related communities. As a conception; character covers and extends beyond identity, it may be defined as the visual references in and to communities; the flavor of places and the complex conception of feature that typifies a locality. It combines; setting, form (a1) structure, physical tissue, buildings, culture and people. Thus it carries the traces and output of the community in a given place and time (D. Gosling, 1984, N. Abdel Kader & S. Ettonney, 1992&1994). So that it occupies a prominent place in the urban development problems list, in existing and newly developed communities and human settlements. (Alfrey, 2010).

But, the real challenge is when thinking to propose a physical tool to guide and promote the urban character and identity with its dual nature physical and non physical fields, and for control the array of overlapping attributes affecting it.

Joongsub Kim,(2000), in the 88th. ACSA Annual Meeting has discussed the importance of understanding the integrating key elements of physical and non physical attributes of character and local identity. Kim proposed 5 key elements forming a working model to enhance and promote the community character and identity, which are be detailed in table 4;

1. Continuity; making history and values alive
2. Uniqueness; differentiation
3. Significance; positive evaluation
4. Compatibility; finding fit
5. Cohesiveness; fostering a sense of community or wholeness.

Key factors of Character & Identity	Design guidelines for emphasizing:	
	Physical Attributes	Non physical Attributes
Continuity; making history and values alive	Making references to traditional design elements – traditional architecture, urban heritage, local traditions, history, and culture.	Making references to properties of place that remind individuals of memorable personal history or group tradition, personal memory, familiar-looking environment
Uniqueness; differentiation	Emphasizing local characteristics of the built and natural environment –local, indigenous architectural & urban character, local landscape, local climate and geography.	Identifying self with place- personal character, personalization, personal identification of the built environment
Significance; positive evaluation	Preserving the built environment of local, historic and cultural buildings& sites	Positive feeling towards place that is meaningful to self-sense of pride, self-esteem, feeling good about living in locale
Compatibility; finding fit	Making individual buildings fit each other in a large context. Fit between buildings and the whole, fit between community's preferences & developers' preferences	Fit between self and properties/ functions of place- fit between individual lifestyle and what the environment offers
Cohesiveness; fostering a sense of community or wholeness.	Achieving character of whole-intimacy, homogeneity, compactness	Personal affiliation of place with shared emotional ties – bonding, membership, shared emotional connection, shared community values, a sense of homeness

Table 4, the key elements of understanding physical and non physical attributes of character and local identity, source: (Kim, 2000)

The five key elements/ dimensions can be used to form the UDC guidelines for enhancing character and identity, the city of Edinburgh used these dimensions to act as the main principles to activate the integration of the collective features of the built environment and the culture of related communities. The design guidelines of Edinburgh present the enhancement of the key factors of character and identity through stressing the physical and non physical attributes.

- *The Case of Edinburgh City to Promote Local Identity and Character by UDC*

According to Andrew M Holmes, the director of city development, the city of Edinburgh Council 2003, "Edinburgh's special character- as the capital of Scotland- is reflected in its unique central area, which is of World Heritage Status, and its quality suburbs and villages. In addition there are several urban expansions areas and these, with the large-scale regeneration of a number of inner and outer city sites help define the modern Edinburgh. Wide visual appreciation of much of the city's core and surroundings is made possible by Edinburgh's spectacular topography revealing both the urban grain and an often dramatic townscape. A complex interplay of elements has shaped the character of Edinburgh. It is a city in which landscape, history and buildings are combined in harmony".

Therefore, the Edinburgh City Council committed to delivering development that respects the special character of the city, is environmentally sustainable and is sensitive to the needs of people. The Council formulated an Urban Design Standards as a documented code. It has been prepared as part of the Council's intention to improve the design quality of new builds and enhance the city's local identity & character, in the same time. These Standards will be used to supplement plans and policies and to reinforce and expand the design training recently undertaken by many planning staff. Developers should find them useful in clearly stating the Council's design requirements.

- *Understanding Edinburgh UDC*

The Edinburgh UDC is set out as urban design principles and is divided to four aspects as shown in Figure 7, within a hierarchy which comprises the following urban levels: (Andrew M Holmes, 2003).

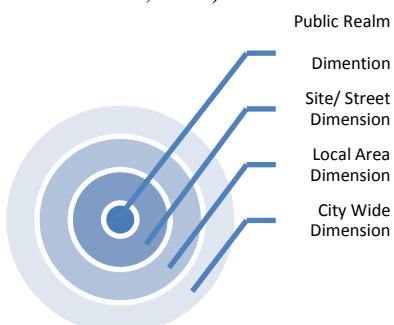


Figure 7. The four urban levels of Edinburg, UPC

■ *City-wide dimension*

The standards of urban design related to the city wide dimension are containing five main design principles;

1. Integrate new development and contribute to *distinctiveness*; recognize the role of the site within the urban structure. Integrate major new proposals into the city structure and ensure that new developments *emphasize, retain or enhance the City's identity*.
2. City wide view and context; protect and enhance views to and from *established landmarks, hills, skylines, and recognise distinctive urban zones, layers of built form* and backcloths. Maintain strategic views from major access routes and public vantage points.
3. Define *city edges*; city edges and settings can be improved through appropriate new development. These should provide integration and *visual continuity* from urban to rural areas.
4. Aim to *improve image and legibility*; enhance the appearance and maintain the complex and varied character of arterial routes.
5. Strengthen and extend the network of green and civic spaces; continue to maximise opportunities to *enhance and extend links* to individual spaces and the open space network in the city.

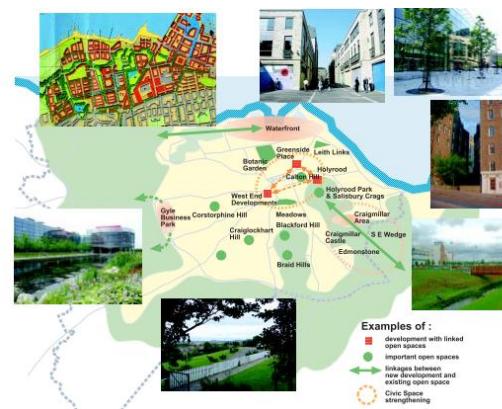


Figure 8, Links to major city assets can be physical and visual. They re-inforce the feeling of inclusion and aid orientation. source; (Andrew M Holmes, 2003).

■ *Local Area dimension*

The standards of local area dimension are set out of four main design principles;

1. Lively and attractive local places; mixed uses and human scale can give *vitality and create attractive places* that contribute to promoting *safe and sustainable communities*.
2. Reinforce local identity; where new development is to be located within a neighbourhood of *distinctive spatial structure*, townscape and landscape, the proposal should reinforce the existing character.
3. Make *distinctive urban form*; shape distinctive neighbourhoods to create local identity, where the existing development form is poor or due for regeneration.

4. Make *coherent layout*; provide a clear and coherent spatial structure offering potential for *diversity and vitality*.

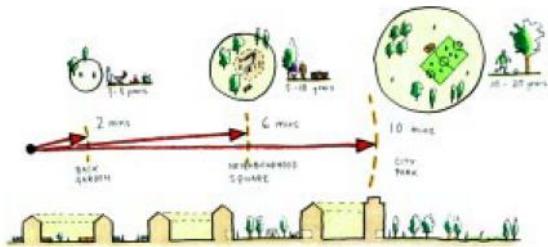


Figure 9, identity opportunities for new civic and open spaces to create identity and act as organizing elements



Figure 11, Development that is sited to enhance existing views and vistas, or create new ones, is valuable to the streetscape and helps people to find their way about by reinforcing a sense of place.

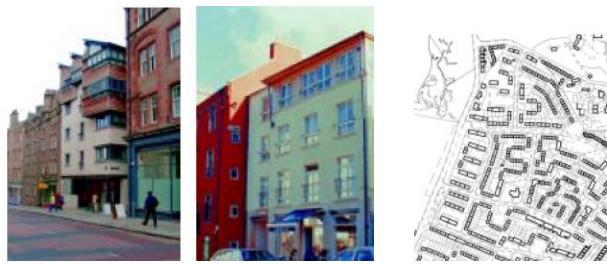


Figure 10, new development should demonstrate the distinctive areas to be found through the city, their coherence helps to reinforce spatial structure and enhance character.

■ Site/Street dimension

The standards of site and street dimension are set out of four main design principles;

1. *Reinforce character*; establish key elements, local references to ensure fit with surroundings.
2. *Promote pedestrian access*; developments should connect with, extend or improve the local street structure.
3. *Value open space*; new development should enhance existing, and provide new open space.
4. *Integrate car parking*; almost all developments require provision for car parking. This can be catered for in one of three ways; either, inside the boundary of a development; or outside, usually on street; or underground. The main consideration is how to integrate parking without allowing it to dominate the development, the street scene, or adjacent developments.

■ Public Realm dimension

The standards of Public realm dimension are set out of three main design principles;

1. The outside room that everyone experiences; wherever possible, opportunities should be taken to *create new active public spaces, which has visibility, orientation, facilities, accessibility, and opportunities* in association with development. Their design and management demands as much care and attention as the buildings which enclose them.
2. *Enclose public spaces*; buildings should give positive definition and enclosure to the shape and function of public space *encouraging a range of activities* to take place. Streets, squares, parks, walkways and canals should be *comfort, relax, have passive & active engagement, variety and change, have social engagement and active movement*.
3. Materials and street furniture in the public realm; *ensure high quality streetscape design*, street furniture and materials are used in the renewal provision of the public realm. *Street furniture should be located sensitively in relation to vistas, elevations of buildings* and should avoid becoming street clutter.



Figure 12, appropriate materials used to emphasize local design also give visual continuity and context, new physical elements should visually reinforce or enhance local character and the established street scene.

Each principle of the previous dimensions of Edinburgh is detailed obviously in the UDC, including secondary principles, design standards and criteria to implementation, case studies, and how to stress of the 5 key elements of physical and non physical attributions in the new development.

5. UDC ESTABLISHMENT METHODOLOGY

First of all, it is a good reminder to “CABE” thinking about UDC; “in thinking through UDC, we should first recognize that it can be destructive as well as constructive, it as a process is only a means, not an end. What matters is the content of the code. Ultimately, a code can only be as good as those who write it and those who implement it”. Through the previous international concepts and analysis of case studies about the UDC application and relations with the urban development, the paper proposed a UDC methodology to have an integrative comprehensive approach to establish a national UDC for guiding urban development in Egypt. The proposed methodology respects the international thoughts and benefits from its positive outcomes. UDC proposal contains three main phases as shown in figure 13;

1. *Identify city's development zones*; as the main outcome of the strategic city planning, aims to divide city into specific areas with development strategy or the process of “design vision”. It may include city centre, historic areas, coastal areas, etc according to environmental, governance, social, economic, cultural and spatial characterization, which can define city's urban identity zoning. The importance of this phase is essentially in establishment sources of cities characterization, conditions, designation into specific areas with common urban identity, and identifying borders of homogeneous nature areas. It helps in identifying visions, and guiding urban development strategies for each of these specific areas.

2. *Apply provisions of urban design elements*; the following phase focused on applying objectives of development strategies for each city zones, or the process of “design rational”. This phase adopts adjusting high quality for urban development policies and projects. It reviews all design provisions related to urban design elements within each city urban zoning to take into account on preparing action plans or detailed plans.

The design provisions can be classified into four urban levels to apply design standards for each urban design elements. That will adjust and ensure high urban design quality application. The four levels for applying design provisions depend on analyzing city urban components to its urban design elements or its urban structure;

1. City-wide's urban structure
2. Local area's urban structure
3. Street & site's urban structure
4. Public realm's urban structure

The design provisions of each urban level include some of the following design elements; Topography and natural setting, gateways, arterial routes, vistas, building patterns, urban tissue, townscape, city skyline, landmarks, dramatic view, open spaces, public parks, urban edge, urban panorama, city links, sidewalk, building lines, ground-level transparency, green corners, plazas, circulation systems, signs, lighting & utilities, building facades, parking structures, materials & colors, site & building access, service area screening, street furniture, landscape. ...etc. Design provisions in UDC present design standards to get high quality of urban design, as physical attributes, it include design criteria, requirements, appropriated materials, components, dimensions, scales, ratios, standard rates, functional needs, utilities, facilities, etc.

3. *Enhance urban design principles*; the third phase focused on promoting urban design principles which connect and integrate the design standards with the community culture, which is essential in “design work” process. It helps in clarifying how to use design provisions in local communities, how to harmony between physical and non physical attributes forming specific urban areas. However, urban development planning needs to have strategies, policies, and action plans, it needs to have local principles to ensure continuity of cultures, heritage, and communities identity. These important factors ensure the integration of urban development dimensions.

UDC's third phase adopts of understanding and respecting principles of urban design to enhance urban identity & character within urban development process. It integrates with the second phase to apply design principles for each urban level which have been identified;

1. City-wide's design principles
2. Local area's design principles
3. Street & site's design principles
4. Public realm's design principles

The design principles act as guiding concepts to apply design standard provisions in appropriating with the local communities characterizations, it adopts how to use - socially and culturally- the design provisions. It contains the following urban design principles adapted to each urban level; Continuity, Uniqueness, Significance, Compatibility, Cohesiveness, Attractiveness, Vitality, Connectivity, Accessibility, Distinctiveness, Flexibility, Coherence, Amenity, Permeability, Comfort & Relaxation, Passive & Active engagement, Social engagement, Active movement, Enclosure...etc.

The UDC proposal has flexibility in its content and application. It may be developed to matching with specific urban communities. It allows almost complete freedom in design creativity, can produce great variety in the architectural and landscape design of buildings and spaces while abiding with key urban design principles, resulting in a rich and attractive environment.

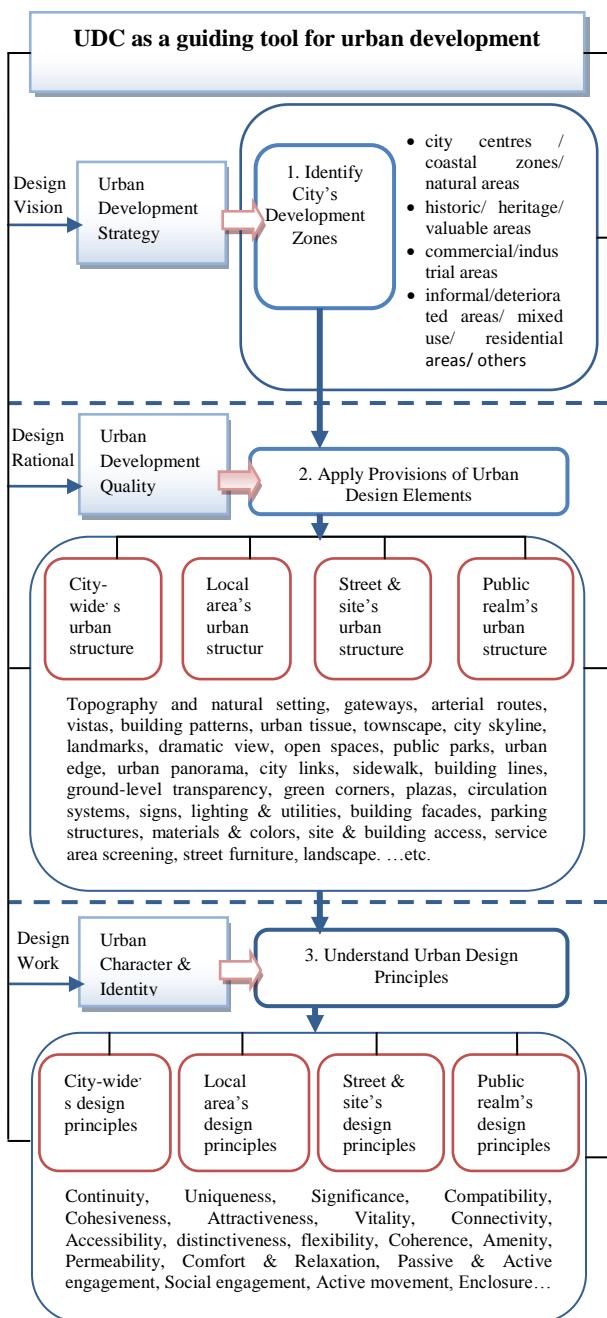


Figure 13, the proposal of UDC methodology
Source: author

6. UDC APPLICATION IN THE EGYPTIAN CASE

The case of Egypt, as shown in figure 14 &15, can be addressed by the failure of most urban development to deal with and manipulate urban design principles in its goals, strategies, policies, or action plans, it may be attributed to many factors, for examples;

- The socio-economic changes in the urban societies are not be included or regarded in the development plans.
- The misuse of the globalization between new planning and architectural trends which lead to the stereo-type elements of new developments, mass-housing, standard community facilities and set solutions (spatial and

otherwise); leading to diluted images, and lost identity, (N. Abdel Kader & S. Ettouney, 1994).

- The lost of urban design tools that guide, control, and manage the urban development plans results contradictions and incompatible development.
- The lack of understanding of the complex relation between urban “character” and culture results the lack of



Figure 14, the lost of urban identity in Cairo districts



Figure 15, the need to control the urban development in Alexandria and Cairo cities, Egypt

meeting the community self needs.

There is a need to draw the various threads of urban design advice. The principles will be an important reference in urban development planning, the preparation of master plans, and in design and development briefs. Recently, the Egyptian Government had applied great steps towards enhancement urban design provisions and principles within construction law and the planning process, as detailed in the following.

- *Evaluation of First Phase Application Of UDC Proposal.*

The General Organization for Physical Planning (GOPP) was established according to presidential decree no. 1093 year 1973- of the Ministry of Housing, Utilities & Urban Communities, Egypt- to be the sole official authority for planning human settlements in Egypt. Law 119/2008 gave GOPP the responsibility of formulating public policy planning and sustainable urban development; and preparing plans and programs for this development at the national, regional, governorate levels, then review and approve urban plans at the local level in the framework of the objectives and policies of national, regional and local planning and sustainable urban development.(GOPP, 2014). The Regulations 144/2009 under the Unified Construction Law 119/2008 recognized in article no. 13/4 the main outcomes of the strategic urban

plan, which is prepared by GOPP, the identification of development zones of the city or village, as follows;

1. Residential areas
2. Archeological areas
3. Areas with distinctive values
4. City centre areas
5. Touristic areas
6. Industrial areas
7. Craft areas
8. Commercial areas
9. Re-planning areas
10. Unplanned areas
11. Extension area, and any interested areas identified by the planner.

The previous works are directly included and adopted in the first phase of the UDC proposal. It acts as a legislative work, which is adopted in the national construction law. Thus, the first phase is totally applied in the Egyptian case, as assigned in figure 16.

- *Evaluation of Second Phase Application of UDC Proposal.*

According to article no. 21 in the Regulation 144/2009 under the Unified Construction Law 119/2008; the General Department for Planning and Urban Development prepares the detailed plans for each development zone, the urban harmony requirements and guidelines adopted by NOUH must be taken into account. The National Organization for Urban Harmony (NOUH) was established according to presidential decree no. 37 year 2001- of the Ministry of Culture, Egypt- to be the sole official authority for regulating and controlling the urban harmony policies in the regions of the Republic in a phased manner.

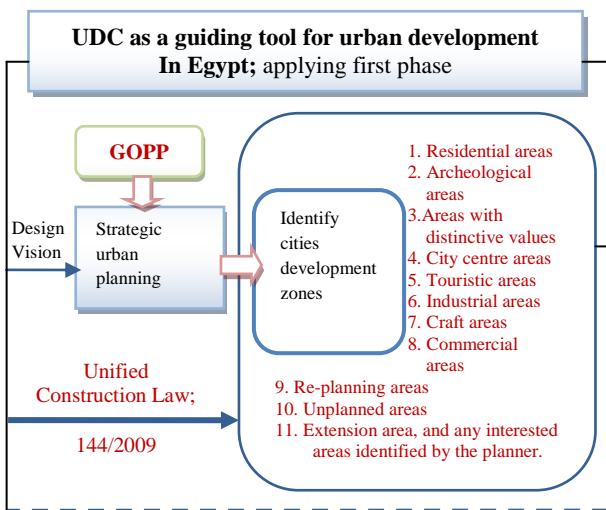


Figure 16, Evaluation of first phase application of UDC proposal in Egypt.
Source; author

NOUH is the responsible organization to formulate plans and programs for adjusting urban design quality and preserving historic and heritage areas in cities, villages and urban communities in Egypt. The main mission of NOUH is setting urban regulations, design standards and requirements to be considered in the detailed plans, which

are addressed as "Urban Harmony Requirements and Guidelines "UHRG, (NOUH, 2010).

The Regulations 144/2009 under the Unified Construction Law 119/2008 recognized in the second part; articles no. 77 to no. 90 all about the role of "Urban Harmony Requirements and Guidelines " in the urban development. These guidelines must be applied in license issue in cities, districts, and new settlements, (Article no.85).

UHRG are issued by the High Scientific Technical Committee of NOUH, who recognized two sources for establishing the guidelines; the international design standards & the characteristics, current conditions and problems of the built environment in Egypt. UHRG include urban design standards in the following parts;

1. Heritage areas	2. Roads & sidewalks
3. Signage & banners	4. Environmental rules
5. City centers	6. City Entrances
7. Open and green areas	8. Villages
9. Quality control	10. Natural areas & reserves
11. Coastal areas	
12. Lighting	

Only five UHRG are finished and published in 2010, as shown in figure 17; (NOUH, 2010).

- Signage & banners (design provisions)
- Heritage areas (documentation methodologies, types of interventions, management of architectural conservation)
- City centres (design provisions for its urban structures)
- Open and green areas (planning and design criteria)
- Quality control (for implementation phases of urban harmony projects)



Figure 17, the Urban Harmony Requirements and Guidelines "UHRG, which are issued by NOUH , 2010.

The second phase evaluation of UDC proposal for adjusting urban design provisions in the development areas detailed planning -as addressed in The Regulations under the Unified Construction Law 144/2009- is partially applied in the Egyptian case, as detailed and assigned in figure 18;

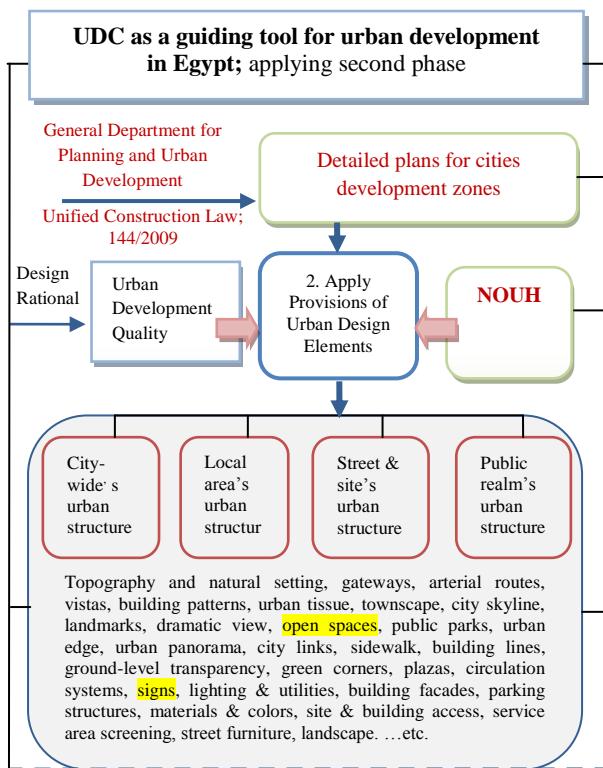


Figure 18, Evaluation of second phase application of UDC proposal in Egypt. Application gabs

The current condition of applying the second phase UDC need reformation for the methodology used in NOUH to prepare the design provisions of the development zones resulted and addressed in the strategic urban planning, according to Law 144/2009. The issued UHRG almost don't focus on urban design standards or provisions.

- *Evaluation of third Phase Application Of UDC Proposal.*

The third phase of UDC adopted on the design principles guidelines, NOUH, by law articles, have to prepare and issue these principles to guide the detailed planning of the city development zones. The UHRG include some of these principles, as the following;

1. Heritage areas; principles for promoting architectural and urban character
2. Open and green areas; design principles for green areas
3. City centers; design principles for its urban structure

Although its essential role in enhancing urban identity and character of Egyptian's urban levels, the issued UHRG didn't cover most of urban design principles, as shown in figure 19. Thus, it will be important to review and complete the issued UHRG. The combination of design standard provisions, in the second phase, and design principles, in the third phase is the way to integrate the

objectives of adjusting design standards and enhancing urban identity and character in the Egyptian cities.

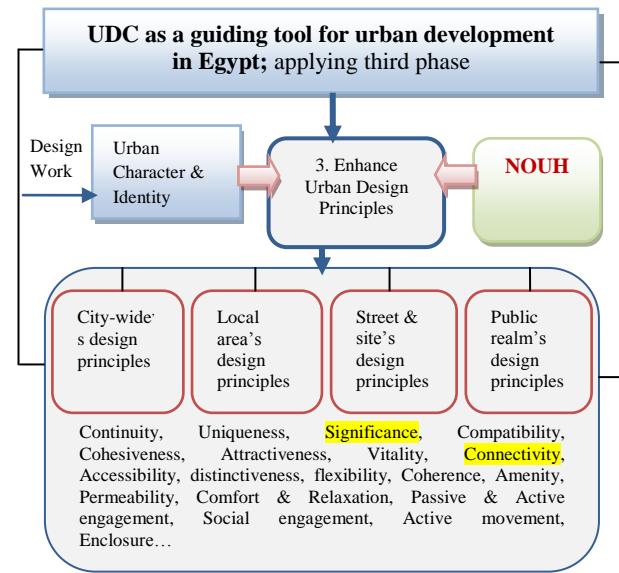


Figure 19, Evaluation of third phase application of UDC proposal in Egypt. Application gabs

7. DISCUSSION AND RESULTS

Urban Design Code (UDC) is an important tool to having regulations and design guidelines for guiding and adjusting urban development, along many urban levels, with many objectives, and by many methodologies as it was applied in several successful cases. It enhances applying good urban design; enforcing local distinctiveness based on historic character, achieving ease of movement, legibility, enclosure, adaptability and high quality of public space, ensuring continuity of character of local areas and streets. It can help designers and planners to create a clear and distinct sense of place. If so, the paper highlights the role of UDC in the urban development plans. It develops a proposal methodology to be applied and involved in the local planning system of the governments, which includes three successive phases;

1. Identify cities development zones
2. Apply provisions of urban design elements
3. Enhance urban design principles

The analysis of the international concepts of UDC as a guiding tool for urban development ensures the following results;

- The vital role of UDC in the urban development plans; to apply planning strategies, to adjust design quality, and to enhance urban identity and character.
- The applying of UDC depends mainly on the process of identification and designation city's development zones (zoning of urban identity, urban environments, or homogeneous nature areas). This process can ease the forming of design provisions and principles according to the local context characterizations.
- The urban design standards and provisions act as the physical references of the development plan, however the urban design principles reflect the creative thoughts and concepts. The integration between them in UDC phases will reinforce locally distinctive patterns of development.

The paper evaluates the proposal of UDC methodology in reviewing of the case study of Egypt's planning system, and achieves the following practical results;

- The Regulations 144/2009 under the Unified Construction Law 119/2008 enforced the application of the first phase of UDC within the strategic planning system along ARE cities. GOPP is responsible of identification of city's development areas as the main outcomes of the strategic urban plan. Thus, the first phase is totally applied in the Egyptian case, as assigned in figure 20.
- The second and third phases, which depend on UHRG, which are issued by the High Scientific Technical Committee of NOUH, need to review and re-evaluate through the standards of urban design provisions and principles. UHRG don't cover or meet all urban design elements, urban levels, varieties of development zoning and identities along the Egyptian regions. It need to include the conscious combination between design provisions and principles. So it is required a great efforts to satisfy the need of UDC establishment for the Egyptian case.
- The UDC establishment need to participation the concerned organization as GOPP (The General Organization for Physical Planning), MUDS (Ministry of Urban Development and Slums), NOUH (The National Organization for Urban Harmony), and HBRC (Housing and Building Research Centre) to prepare the full documents of the second and third phases. Figure 20 summaries the practical result of UDC methodology, the existing and required phases, and the organizations may.

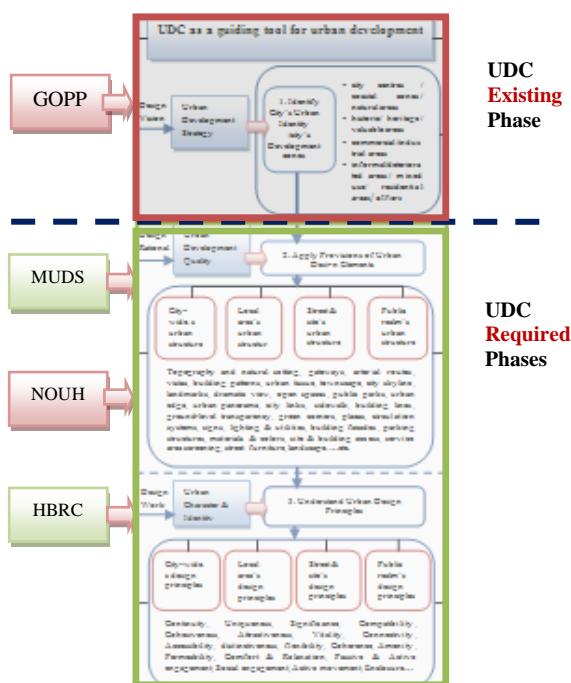


Figure 20, the results of applying UDC proposal in the Egyptian case.

8. CONCLUSION AND RECOMMENDATIONS

The concept of UDC, at its simplest, is a form of detailed guidance. It aims to regulate the design of a new development to achieve a higher quality of urban life and to enhance urban distinctiveness and local identity. It can be formed and developed according to international standards and the local context characterizations. UDC will often be adopted by the planning authority, following public consultation. This means that the guidelines are treated as a material consideration when planning decisions on detailed planning applications are taken and considered.

It needs to apply and update to be compatible and activated, and the most important to be involved into the governmental planning systems. With references to Egyptian case, the Government has great conscious to enforce the UDC concept; it was considered that the power of any code is dependent on the legal system of implementation including the levels of legislative enforcement. Generally, more efforts towards preparation of design provisions and principles have to be done to complete the levels and contents of UDC. A lot on the adaptive, appropriate, comprehensive components of design provisions and principles will strength recognition of the use of UDC as a local process within the local development plan itself.

The paper invites the Egyptian governmental commissions concerned in development planning (GOPP, NOUH and HBRC) to study in much more detail some of the issues raised in this paper. One positive option would be to pursue this work with the recently established; Ministry of Urban Development and Slums, which is committed to many of the principles set out in this paper.

However, also encourage the government not to think of UDC as a panacea, but rather one of several guiding tools that could be introduced to give greater certainty of high quality development and delivered more efficiently in our pursuit of sustainable communities.

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