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Landscape based urbanism enriched with geospatial understanding against landscape urbanism: Regeneration project proposal for Antakya City

Saye Nihan Cabuk¹, Alper Cabuk² and Recep Bakis³

¹Research Institute of Earth and Space Sciences, Anadolu University, 2 Eylul Campus, Eskisehir, Turkey.
²Anadolu University, Research Institute of Earth and Space Sciences, 2 Eylul Campus, Eskisehir, Turkey.
³Department of Civil Engineering, Faculty of Engineering, Anadolu University, 2 Eylul Campus, Eskisehir, Turkey.

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The importance of landscape values and human and nature interactions are usually ignored or degraded during planning processes not only in Turkey but most of the countries, resulting in unhealthy urban environment. This viewpoint causes exclusion of landscape planning from national planning stages, which in fact has a vital importance for the development of sustainable cities, in terms of both natural and cultural resources. The necessity of landscape consideration and urban ecology recognition in urban planning and design have led the emergence of various theories such as ecological urbanism, landscape urbanism and landscape ecological urbanism. However, there is still a need for a more definite and integrated model allowing for the landscape as the basis of the planning practices in the very beginning of the process. Landscape planning enables the detection and analysis of landscape characteristics supported by ecological concerns and thus provides a reliable basis for development plans and healthy decision-making. The spatiality of the data used in planning process, on the other hand, enables the utilization of geographic information systems (GIS) technologies for obtaining rapid, accurate and precise results. Moreover GIS offer opportunities to work with multi data sets and realize advanced analysis. Considering the need for improvement of traditional planning approaches especially within the context of the latest urban regeneration discourses of Turkish Ministry of Environment and Urbanism, in which an integrated planning understanding is lacking, this paper discusses the applicability of current urbanism theories comprising the evaluation of landscape and ecological systems and proposes a landscape based urbanism model enriched with geospatial understanding for Turkey, through the case of Antakya City Regeneration Project Proposal.

Key words: Urbanism, urban regeneration, landscape planning.

INTRODUCTION

In Turkey, there has been a considerably rapid urbanisation and industrialisation process since 1950s. Irrational land uses and the over-exploitation of natural resources associated with regard to this process have resulted in irreversible losses and the degradation of prime farmlands and other ecologically significant ecosystems around urban settlements. The most important national legislation regarding spatial planning
and development was put into force in 1985. The current planning legislation authorizes various institutions and organisations to prepare, apply and supervise the physical plans, which causes conflicts and inapplicable decisions. Moreover, the context puts forward significant shortages. One of these shortages in the national planning framework in Turkey is the ignorance of a multidisciplinary framework and disregard for the landscape values, natural systems and ecological concerns (Kilic et al., 2003; Ustundag and Sengun, 2011; Uzun et al., 2012). General understanding in planning focuses only on the target administrative boundaries, and an integrated approach is usually missing. In this respect, landscape planning stage is totally passed over. In practice, planning at any scale is the responsibility of regional and urban planners and mostly depends on the designation of use areas and mathematical calculations based on the number of citizens as described in the national planning regulations, where landscape is only considered as the left over lands. Moreover, geographic information systems (GIS) capabilities and required spatial analysis are barely used. This standpoint and ignorance end up with unhealthy rural and urban environments, loss of landscape values and valuable resources, and failure to develop disaster free settlement areas. Besides many others in the past, the latest earthquake in Van, Turkey, in October 2011, with a magnitude of 7.2, and its distressing results (Figure 1) have been significant reference points for reconsidering the characteristics of the current urban structure and the quality of building stocks in the Turkish cities. The earthquake that lasted 25 s affected a considerably large region in East Anatolia and caused deaths and heavy demolitions mostly in the city centres and villages of Van and Ercis. 2260 buildings totally collapsed, 604 people died and more than 2000 people were injured. In terms of the moment magnitude, Van earthquake took place among the first 10 earthquakes in Turkey for the last 110 years.
years (Anonymous, 2011; Emre et al., 2011). This earthquake draw attention to the necessity of a comprehensive regeneration process requiring the understanding and organization of both natural and cultural environments in order to minimize and prevent the disaster hazards. Regarding this, Turkish Ministry of Environment and Urbanism has declared the necessity of a countrywide urban regeneration project, with an estimated cost of 400 billion dollars, and enacted Regeneration of Disaster Risk Areas Law, in order to prevent and minimize the earthquake harms.

For the last 50 years, in Turkey, most of the productive agricultural lands have been transformed into urban and built environments through national planning and development processes resulting production loss and increase in the flood and earthquake risks in the cities. Besides, the existence of low quality building stocks and risky ground conditions within the city centres raises the importance of the mentioned national regeneration movement. The general context of this national project involves the determination and replacement of the weak buildings with the resistant ones all over the country. In other words, the movement provides an important opportunity for regenerating the risky and unqualified building stocks. As most of the casualties and damages during the earthquakes, as well the floods and other natural disasters, result from inappropriate planning applications in various scales, this national urban regeneration idea of the ministry presents an important opportunity and in fact a mission to improve the overall traditional planning process. However, both the regeneration law and the framework lack a clear methodology to define the disaster risk areas; the regeneration plan-making authorisation is given either to municipalities or the Provincial Directorates of Ministry of Environment and Urbanism; and regeneration plans, as well as the others in the country, are likely to be prepared only within the administratively designated local areas, ending up with the ignorance of an integrated planning approach and the relationships with the rest of the region or the city. Moreover, detailed landscape inventory and analysis methods and GIS capabilities are barely used.

Considering the current structure of the national planning framework, which totally ignores the landscape values and landscape planning requirements, this regeneration process is also of great significance as it provides opportunities to benefit from the urbanism approach alternatives to create more liveable and sustainable cities. It is not only an opportunity but also a mission to seek and adopt new urbanism approaches and models featuring the vital necessity of the landscape and natural systems for sustainability in order to improve the context of the traditional urbanism applications and the quality of urban life. Within this context, current urbanism approaches and discussions on the necessity and the methods of landscape and ecological concern adoption are essential references for the development of an alternative model to make up for the shortcomings of the national planning framework.

Urban design and urban regeneration works comprise multidisciplinary practices and contributions mostly from architects, regional planners, urban planners and landscape architects. The nature of the urban regeneration process itself is multidisciplinary for it requires a profound knowledge and a teamwork environment in a wide range of professional areas, from landscape and ecology to cultural and structural requirements. To fulfil this aim, this study considers the current arguments on shortages of traditional planning process, landscape urbanism theory and ecological considerations in urbanism practices, and accordingly proposes a landscape based urbanism model enriched with geospatial understanding applicable for the planning and urban regeneration processes in Turkey. In other words, the landscape based urbanism approach explained in this paper presents a general planning model alternative to current national planning activities where the landscape planning stage is a requisite and primal part of the planning and urban and landscape design process. The case study comprises a regeneration project proposal for Antakya, Turkey, to prevent and mitigate the earthquake and flood hazards in the city. The project proposal consists of three main phases supported by GIS technologies and comprises extensive multidisciplinary office and field works. The landscape based urbanism model in this paper includes a series of landscape surveys, analysis and planning applications to form the basis of the development plans. The landscape based urbanism model consists of detailed landscape inventory, landscape characteristics analysis and landscape planning phases where the resulting plan decisions are expected to be taken as the major input for urban planning and design applications in the future.

Landscape urbanism theory discussed in this paper is a new urbanism approach, with a past of 10 to 15 years, mostly popular in North America. Many professionals and academics question the context and debates over the advantages and disadvantages of it. Some of the discussions focus on whether landscape urbanism is a new field of discipline, while the others imply it is a new concept of urbanism methodology. In fact, landscape urbanism is not a new professional discipline. It is a theory stressing on the landscape's and nature's degraded role in city planning and design and bridging the natural environment with the cultural one. Regarding the indefinite methodology and application scale, it is not possible to fully adopt the landscape urbanism approach. Besides, the most disadvantageous circumstance is the fiveness of the realized landscape urbanism projects, which makes it difficult to fully comprehend the functionality of the idea. Moreover, the theory mostly seems to be dealing with the urban design applications and ignoring the planning requirements. Therefore, it should neither be denied nor solely adopted for the
physical planning and design process. However, the overall framework of landscape urbanism is worth dealing as a significant urbanism alternative in terms of environmental and ecological concerns, and the theory constitutes an essential outline to highlight the necessity of landscape planning. The advantages of landscape urbanism approach should be evaluated and better understood for the benefit of Turkish urban regeneration projects.

**Landscape urbanism**

Landscape Urbanism is the hot topic of most of the ongoing urbanism debates of the decade. It is commonly described as a set of strategies bringing the landscape architectural point of view, supported by ecological concerns and Ian McHarg’s (1969) “Design With Nature” into the contemporary urbanism approaches. It proposes engaging natural and cultural systems in the city by a manner in which nature is mostly undisturbed and put in the heart of the city planning process, on the contrary of traditional urbanism that places the green areas on the leftover lands unsuited for building.

The term was first coined by Charles Waldheim, the chair of the Department of Landscape Architecture at Harvard University, at the Landscape Urbanism Conference and Exhibition held in Chicago in 1997. Since its emergence, there have been many arguments on whether it is a new field of discipline, a new method in urban design, a defender of a greener sprawl or an alternative to new urbanism. The definitions still vary in a wide range, so do the practices by means of site and scale. Lindholm (SLU, Department of Landscape Architecture, Alnarp, Sweden, unpublished document) contributes to this discussion introducing landscape urbanism as an ecological way of understanding the city and its components and underlines the uselessness of the efforts to find a clear guideline. In *Landscape Urbanism: A Manual for the Machinic Landscape* (Mohsen and Najle, 2003), one of the most important publications in the field, landscape urbanism is defined as a theory “suggesting neither a new formalism nor a renewed emphasis on landscape in the city. Landscape urbanism is not a theory of design, but promises to innovate at the level of design practice.”

One of the leading figures in the field is James Corner, a professor of landscape architecture and the founder of Field Operations. Corner was the first to develop the phrase landscape as urbanism and his ideas were published in *Recovering Landscape*, which have become one of the key publications (Corner, 1999; Gray, 2006). One of Corner’s prominent projects reflecting his approaches was for Detroit’s shrinkage into the landscape. The city pattern was made up of abandoned factories, large areas of vacant housing and redundant commercial strips. Corner saw the voids of inner-city Detroit as the potential places of social action in the urban fabric, and proposed the common lands as the places of planned and unplanned activities. Charles Waldheim’s project for Detroit, on the other hand, addressed a more ecologically balanced four-stage model. These projects were also exhibited during the Landscape Urbanism Exhibition. Thus, Landscape Urbanism theory officially showed up as the reconsideration and re-evaluation of abandoned voids in the cities by shifting emphasis from the built form to the landscape in the design and development of these spaces (Shane, 2003).

Waldheim (2002) refers to the postmodern critiques of modernist architecture and planning in the late 1970s and early 1980s, to explain the origins of landscape urbanism. During these times, new urbanism movement emerged as a response to the sprawls of the modern urban design, which have become highly popular and widespread in the last 50 years in the United States, replacing the traditional compact neighbourhood development patterns. New urbanists condemned the suburban developments specifically for increasing the needs for motor vehicles for transportation, lacking human scale and urban identity, and occupying the large landscapes with socially disorganized structures. Therefore, they proposed connected networks of walkable streets, mixture of housing types and uses, street frontages and public spaces to overcome the mentioned problems of modernist urbanism and return to what is offered by the traditional cities (Steuteville, 2002, 2011). However this approach itself lacked the necessity of larger-scale infrastructural landscapes for the urban development.

Waldheim (2002) points out Barcelona’s program of public space and building projects in the 1980s and early 1990s as one of the best examples for this situation. The program focused primarily on the centre of the traditional Catalan capital and has desperately pushed the city to redevelop necessary areas and facilities such as airport, logistical zone and water treatment facilities.

The international competition for the design of Parc de la Villette (Figure 2) in 1982, Paris, comprising 35 ha at the outer edges of the city, was also a milestone in both urban park design and landscape urbanism theory. The submissions of Bernard Tschumi and Rem Koolhaas adopted landscape as the medium of urban transformation. The projects have drawn attention to landscape as the primary element of urbanism to sustain natural and cultural systems and construct a liveable city. After la Villette Competition, there have been some other important landscape urbanism projects. James Corner and his Field Operations’ plan for Fresh Kills (Figure 3), a former landfill area covering 890 ha in New York, suggested a conversion into a park and proposed a 30-year plan for the restoration of the landscape. Another example is the High Line Project (New York, 2004) of Field Operations and Diller scofidio+Renfro (Figure 4), which proposed linear walkway between paved and
Figure 2. Parc de la Villette, Paris (http://www.tschumi.com/projects/3/).

Figure 3. Fresh Kills Park, Staten Island, New York (http://www.fieldoperations.net/).
planted surfaces along 2.33 km long abandoned rail line (Steiner, 2011).

The fewness of the realized landscape urbanism projects still make much of the arguments today. As to the supporters of the new urbanism, leaving the nature undisturbed, deriving from McHarg’s “Design With Nature”, as landscape urbanists feature, still seems as an unrealistic, infeasible and inapplicable way of planning a city.

Is landscape urbanism ecological urbanism?

For, today, man’s behaviours inevitably have both direct and indirect impacts on almost every place and system on Earth; scientist have recently started to argue the definition of nature, separation of human from non-human and the context of ecology. As the absence of human intervention is not realistic, some ecologists have proposed the development of a new model allowing for the human, urban processes and the landscapes within the scope of ecology. This scientific point of view as well as the necessity to accord priority to nature and landscape in the design of the built environment has affected the development of urban ecology and the involvement of landscape architecture studies in urban design process. Since ecologists have usually taken the urban environment as a degraded version of natural conditions, while urban planners mostly focus on urban nature as tress and parks; considering the urban environment as a participant of natural processes require new aspects in the urban planning and design processes (Gaspar, 2006).

The first remarkable studies to deal with nature for planning process were from Ian McHarg and his students. McHarg’s approaches brought people closer to

Figure 4. Highline Park, Manhattan, New York (http://www.thecoolist.com/landscape-architecture-designs-10-modern-masterpieces/).
nature and formed the basis of the landscape urbanism. However, landscape urbanism departs from McHarg in the way it refuses to separate natural systems and the cultural ones and instead considers these as the elements of the city form. Therefore the proponents allow multiple functions to occupy the same territory simultaneously (Steiner, 2011). In other words, landscape urbanism takes human and environmental relations into account and adopts this interaction as a necessary process.

Nevertheless, the context and the definition of landscape urbanism are still undetermined for some, causing the term to be referred as the refinement of traditional landscape architecture or a hybridized way of city planning. Waldheim (2006) remarks "landscape has become a lens through which the contemporary city is represented and a medium through which it is constructed". Thus, a multidisciplinary understanding of landscape in a larger scale and its potential to bridge nature and human is necessary. Lindholm (SLU, Department of Landscape Architecture, Alnarp, Sweden, unpublished document) explains that landscape architecture, as simply a discipline of landscape planning, rehabilitation, management and design, for so long have adopted this understanding in its origins, despite the efforts to side-step the discipline to a craft of suggesting design solutions and plant schemes for landscapes in already located sites.

Contemporary landscape urbanism practices reject the camouflage of ecological systems with pastoral images of nature that intend to provide stylistic and spatial exceptions to the grided urban fabric. Rather, contemporary landscape urbanism recommends the use of infrastructural systems and the public landscapes they engender as the very ordering mechanisms of the urban field itself, capable of shaping and shifting the organization of urban settlement rather than offering predictable images of pastoral perfection (Waldheim, 2002). Landscape urbanism has been an essential reference to reconsider the necessity of ecological systems and define urban ecology in the urban planning practices. Urban planning process requires new ideas to keep up with the environmental problems that have global reflections both ecologically and socially. Although landscape urbanism is presented as the solution for the integration of natural systems into urbanisation, some professionals in the field underline the lack of recent urban ecology knowledge and approaches in the theory.

Most of the people put the ecological concerns out of the city and the urbanism concept. Moreover, consistency of landscape architecture with urban planning is mostly ignored. As a result, the importance of nature and sustainability within the city also remains ignored and landscape is represented only as the urban green areas and parks. However, urban ecology and landscape urbanism debates have lately put stress on the subject. Increase in the traditional urbanisation patterns and built environment excluding the urban ecology threat the sustainability of the resources and the cities themselves. Among the consequences of this development are the increase in the pollution, wastes and green-house gas production, disturbance of valuable resources and habitats and degradation in social and cultural issues. Although highlighting the necessity of natural systems, from this perspective, what landscape urbanism proposes may be found inadequate to sustain the nature and liveability.

Landscape urbanism has a role of integrating the man made environment with the natural ones at the very beginning of the planning process. However, besides creating a city form where the natural and cultural landscapes are balanced allowing for the diffusion of the ecological systems into the city, the role of the landscape urbanism theory, as well as the traditional ecological design, to encourage issues such as green energy, climate regulation and waste control is not very definite. Within this context, ecological urbanism seems to be the supplemental aspect of the landscape urbanism theory. This is why some name this combined idea as the "landscape ecological urbanism".

Cities are living organisms and create ecological systems where the dominant element is the human. Therefore, urban planning and design process should benefit from this fact for urban and ecological sustainability. Here, the idea of designing with nature from the landscape ecological urbanism point of view contributes to the enhancement of ecosystem and its potential to improve the quality of life.

Objectives

The general aim of the project proposal is to put forward a landscape based planning framework, which consists of detailed landscape inventory, landscape characteristics analysis and landscape planning phases supported by GIS technologies, for regeneration of Antakya to prevent and mitigate the earthquake and flood hazards in the city.

MATERIALS AND METHODS

Project area

The project proposal introduced in this paper includes a series of phases for Antakya, which is the central city of Hatay Province in southern Turkey. The project proposal was prepared for and presented to Antakya Municipality. The total municipal area is 689 km² with a population of 213,000 citizens. The main sources of income are trade, agriculture and agricultural machinery manufacturing.

Antakya region has been an important settlement area since ancient times. In fact, it is one of the oldest settlements in Anatolia. Anciently named Antioch, the city was first founded by Seleucus I around 300s BC, on the banks of Asi River and productive Amik Plains, and has been actively occupied by various nations. Its importance came from trade roads; it was located in the intersection of roads. After the conquest of Arabians in the 7th century, Islamic
characteristics started to show up in the city. During the Ottoman
Empire sovereignty, Antakya was still seen as an important region
for its geographic and economic location. Having been under
the dominance of various cultures and religions, it is not surprising
that the city has become a significant place for its social, cultural
and physical diversity and consequently, outstanding historical
and cultural heritages. Social and cultural ethnic groups have formed
a very different and rich physical pattern also in the settlement. The
pattern of the city still bears the marks of its early Hellenistic and
Roman structures, especially in the formation of geometrical grids.
The configuration of the streets reinforces Islamic characteristics;
cul de-sacs mean privacy and street structure is narrow. The plain
on which the city is located is mainly formed by alluvial deposition of
Asi River. The city comprises ecologically significant farmlands and
a great potential for the development of industry and tourism, and
the expansion of urban areas (Kilic et al., 2003; Kara, 2005; Akyuz,
2008; Oner, 2008; Topcu and Kubat, 2012). However, today,
modern urbanisation implementations in the region change the
traditional city patterns rapidly, and threaten the sustainability of
traditional architecture and other urban identities (Kaypak, 2010).
The location and the current urban structure of the city, on the
other hand, confront the citizens with serious risks of floods,
landslides and earthquakes. Antakya and its surroundings are in
the effect area of the active Dead Sea Fault. According to the
classification of dominant periods, Antakya city can be divided into
five zones, probably prone to different levels of seismic hazard. The
shorter natural periods are in inner Antakya and both the sides of
Asi River (that is, northern and southern parts). The eastern and
western parts of Antakya have maximum dominant periods. The city
has been hit by many destructive earthquakes since 140s BC, with
magnitudes of 8, 9 and 10, and had to deal with serious floods.
However, there has not been any earthquake to discharge the
stress in the last 135 years (Korkmaz, 2006; Over et al., 2011). In
other words, the region has been quite stationary, by means of
earthquakes. This situation draws attention to the possibility of a
serious earthquake risk in the very near future. The current
characteristics and the locations of the buildings located especially
on agricultural lands or slopes increase the risks of disaster hazards
in Antakya even more. Figure 5 illustrates some problematical
urban spaces within the area.

The overall project proposal consists of three main phases. The
landscape based urbanism model is presented in the last phase
and the resulting plan decisions of the phase are expected to
be taken as the major inputs for urban planning and design
applications in the future.

Phase I: Determination of earthquake risks

The first phase of the regeneration project proposal consists of 4
stages for the determination of urban regeneration priorities in order
to minimize and prevent the potential earthquake hazards in
Antakya. The stages are as follows.

Building inventory

This stage is based on detailed building inventories for 4 and upper
storey buildings within an area in Antakya Municipality territories,
which will be designated depending on the evaluation and analysis
of geological, geophysical and geotechnical data, as well as other
necessary urban information. This building inventory data will be
used for the determination of potential hazard risks in case of an
earthquake.
Implementation of local seismic station network

This stage is based on the implementation of a seismic station network to continuously detect the earthquakes to determine the ground characteristics of the project area.

Determination of relationships between buildings and ground

The earthquake information and necessary parameters will be used to model the ground data, which enables the identification of ground behaviours and reactions against varying conditions. In other words, the relationships between the buildings and the ground will be defined. This definition provides the detection of low quality and hazardous building stocks, and so the regions, in case of earthquakes depending on different magnitudes.

Determination of urban regeneration priorities

This stage is aimed at the determination and thus alteration of current plan decisions unsuitable for development of Antakya, in terms of potential earthquake risks. New decisions may include storey limitations or strict construction measurements depending on the results obtained in the previous stages. Besides, the most important output of this stage will be the determination of urban regeneration priorities in earthquake risk areas. The priority determination will be basically based on the degree of the risk and the quality of the buildings and is of great importance for minimizing the number of casualties and physical damages in case of an earthquake.

Phase II: Determination of flood hazards

The second phase of the project focuses on the detection of flood risks of Asi River within Antakya transition to prevent the potential environmental and natural disaster hazards of the river and improve life quality of Antakya citizens. This phase is quite challenging as Asi River rises in Syria and flows through Antakya until it discharges into the Mediterranean Sea. This circumstance requires the application of advanced engineering interventions. The main stages of this phase are as follows.

Determination of hydrological characteristics

This stage focuses on the examination of Asi River hydrological region within Turkish borders to determine its hydrological characteristics.

Determination of flood risks

Depending on the river’s hydrological characteristics, flood risks were determined and this information utilized as an important input for the rest of the stages in this phase.

Engineering projects for minimizing flood risks

In cases like Asi River, where the river is dammed in another country and accordingly the flowing regime is highly changeable and sometimes unpredictable, flood risk minimization requires detailed engineering measurements depending on the hydrological characteristics. This stage proposes the development of significant construction projects for reservoirs and flood ponds to control the floods.

Engineering and bioengineering studies for decreasing pollution and pollutants

This stage is mainly aimed at the determination and evaluation of water quality in terms of public health, so that the most appropriate water treatment systems can be adopted.

Phase III: Regeneration

The main objectives of this phase include the enlivenment of the river, creation of balanced common open-green spaces, settlement and commercial areas along the river corridor and within the city, and improvement of the social and physical quality standards and public opportunities, depending on both earthquake and flood risks and other natural, physical and cultural data within the project area. In other words, this phase focuses on an overall evaluation of the current urban fabric, hazard risks and landscape characteristics in a broader scale, compared to the current national planning approach, so as to produce plans and determine the most appropriate land use types which will be referred as the basis of urban design applications. To fulfill this aim, it is necessary to conduct a series of comprehensive surveys and landscape planning activities from an integrated point of view. It will presumably result in unsustainable and disconnected urban patterns to limit the concept of regeneration with only urban design practices in a designated area. Regeneration decisions and urban design processes are directly related to plan decisions. It will also cause disregarding the importance of cultural heritage to accept landscape only as the natural landscapes. Consequently, regeneration phase requires adoption of a comprehensive urbanism method framework allowing for the landscape values and vital outputs and results obtained in the previous phases. The mentioned framework, namely landscape based urbanism model, introduced in this phase, respectively include the implementation of landscape inventory, landscape characteristics analysis and landscape planning processes as a prerequisite to producing land use and development plans, and finally urban and landscape design studies. Besides the data produced in the first two phases of the project, other accessible biotic (flora, fauna, sensitive ecosystems, forests, etc.), abiotic (geology, hydrology, geomorphology, etc.) and cultural (demography, economy, transportation, etc.) data will constitute the main datasets in this phase.

The nature of the physical planning depends on geospatial understanding. Geospatial understanding requires comprehensive perception and detailed information of the planning and neighbouring environment regarding every necessary feature and attribute. GIS is the most important technology of the era enabling this geospatial understanding. The power of GIS is in its advanced spatial analysis, modelling and mapping tools. These tools are also certainly necessary for landscape based urbanism applications as well as the other planning processes. This is why GIS is an inevitable part of the landscape based urbanism method.

The initial step of landscape based urbanism method is the landscape inventory, which will be utilized for the determination of landscape characteristics of the project area. Landscape inventory rely on extensive field surveys and evaluation of current plans and data. The landscape characteristics analysis is of great importance and an essential input for the landscape planning process. Landscape characteristics analysis enables the determination of physical, cultural, recreational and natural landscape characteristics and potential. These characteristics will be utilized to identify the influence zones of proposed land uses and water basin territory. Within these territories, 1/5000-scale landscape plan decisions will
be made and used for the production of 1/5000-scale master development plan, followed with 1/1000-scale landscape land use plans. These plans will form the basis of 1/1000-scale development plans. As in landscape planning process, both natural and cultural landscapes are considered; it tackles with the questions on the future of cultural heritage as well. Thus, though primarily exalting the importance of natural systems and values in urban planning, landscape based urbanism model does not deny or ignore the necessity of surviving the cultural urban heritage. On the contrary, it provides opportunity to realize urban and landscape design works from an integrated point of view. Figure 6 illustrates the landscape based urbanism model for Antakya case. As seen in the figure, landscape consideration is included throughout the whole planning process in accordance with the national legal planning framework. 1/1000-scale implementation development plans present the basis of urban and landscape design studies.

RESULTS AND DISCUSSION

The biggest threat to the environment and nature, as well as human life, comes from man’s own activities and interventions. Regarding the fact that thousands of people die everyday as they cannot reach clean water resources and food, it is an incontrovertible reality that unless man changes his behaviours towards nature and Earth, similar threats will be affecting more and more of the population in the future. Storms, hurricanes and other similar meteorological events, which are the consequences of global warming mostly resulting from anthropogenic activities, cause considerably devastating effects and damages in the settlement areas. Accordingly, recent flood events in Turkey and their distressing harms are likely to increase depending on the climate change in the very near future; and disasters such as floods, storms and landslides will be as much threatening as the earthquakes in the country. It is foreseen that the results of climate change will have varying influences on different parts of the country: Some regions will be exposed to heavy rains and lose productive farmlands, and some other regions will suffer from erosion and desertification. Consequently, besides earthquakes, it is also of great importance to consider these mentioned disaster risks during the targeted national regeneration project, stated by 6306 numbered Regeneration of Disaster Risk Areas Law, which is important for urban
regeneration process in Turkey, with an estimated budget over 400 billion dollars. Food and shelter are, of course, the fundamental needs of man. However, having access to food resources and conservation of productive lands are usually underestimated compared to the latter, in Turkey. Within this context, national urbanisation process mostly focuses on meeting housing needs and cities are expanded on valuable plains and agricultural areas. As a result, not only productive lands and water basins are wasted but settlement areas on these lands are exposed to floods and other risks as well. These consequences reveal an urgent need to adopt a new urbanism approach to overcome the problem. As a matter of course, floods and earthquakes are natural processes that shape the environment. However, inappropriate interventions, urbanisation and industrialisation turn those processes into disasters. In this respect, a new urbanism model for the regeneration projects, where landscape and environmental approaches are primarily considered in order to protect and sustain the resources is of great significance. Although there is a good tradition of landscape planning in the United States and some countries in Europe, most of the countries including Turkey still disregard the necessity of implementing landscape based planning approaches.

Within this context, landscape urbanism seems to be a new model dealing with landscape values and characteristics. Although there are many opponents to the idea that suggests creating wide public and green areas within the urban fabric, this is considered practicable in Turkey, where most of the city scales are relatively small and the distances from and to city centre are short. Nevertheless, it is important to adopt a hybrid model rather than fully shrinking into landscape for the regeneration of the cities, regarding the richness of urban historical heritage patterns in the country. The regions possessing cultural and historical heritage and protection sites should be regenerated through restoration and urban protection processes. This regeneration method and hybrid model provides conservation of urban and social identity and characteristics, on the contrary of Waldheim’s 4-stage model to let nature’s infiltration for Detroit’s regeneration, as some people criticized. The landscape based urbanism model presented in this paper, for Antakya, adopts a more detailed methodology for urbanism and thus regeneration studies starting from the landscape inventory, analysis and planning stage for developing development plans and urban and landscape design basis. As the current Turkish urbanisation framework totally ignores the necessity and importance of landscape planning and its eminent role in use and protection balance, even in the planning of national parks and protected areas, the model proposed, which is enriched with GIS capabilities, promises a new and a visionary dealing for the country, which is quite innovative not only for Turkey but also for the other countries where landscape is usually disregarded. Especially regarding the national urbanisation legislation focusing primarily on fitting in with the targeted quantities in the regulations and determining the territories of land use regardless of existing landscape resources and characteristics, landscape based urbanism model becomes even more significant.

The main purpose of landscape based urbanism model is to understand the environmental and ecological characteristics in order to create settlements, which neither threats the nature nor is threatened by it. In case of Antakya, the model focuses on the sustainability and protection of natural, cultural, historical and agricultural areas, and minimisation of flood and disaster risks. Understanding those characteristics requires determination of natural, cultural and physical environmental features. It is also necessary to understand the landscape characteristics to provide compliance with natural systems within the Turkish urban regeneration projects. Traditional urbanism approach in the country and current implementations are lacking in these requirements. Regarding the deficiencies that have long resulted in inappropriate rural and urban environments in Turkey, landscape based urbanism itself alone may be also considered inadequate to be declared as a new urban planning concept and encouraged to be improved. However, the possibility that millions of current buildings in Turkish cities are to be replaced with new ones as a national policy to handle the disaster risks all over the country charges the authorities and the academicians with the responsibility and opportunity to deal with new issues that have been often undervalued, such as energy efficiency, sustainability of natural resources and landscape characteristics, mitigation of environmental problems, besides the disaster risks. Within this process, landscape based urbanism is not an absolute but a practicable alternative. This approach proposes a comprehensive planning process based on the natural systems and landscape values, against the traditional planning applications, which identify the landscapes as the leftover lands unsuitable for building. To sum up, this approach benefits from the advantages that natural values in the urban fabric is likely to present especially for the upcoming regeneration implementations and contributes to issues such as sustainable architecture, green technologies, energy productivity, prevention of climate change and urban ecology.

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