SUBURBAN TRANSFORMATION AND NEW URBANISM: THE EVALUATION OF NEW SETTLEMENT AREAS IN ISTANBUL ACCORDING TO THE NEW URBANISM MOVEMENT

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ABSTRACT

In historical continuum of architecture, urban planning and urban design varied approaches arise by developing new solutions with the interpretation of history. The most effective of these approaches is New Urbanism Movement. The urban design rules of the movement are defined taking as example traditional settlements. The study aims to analyze the affects of one of the current approaches, New Urbanism Movement on new settlements of Istanbul and to evaluate these settlements according to the characteristics of this movement. Twenty-four new settlements of Istanbul that have formed in the last few years are evaluated according to the evaluation system formed based on the principles of the New Urbanism Movement. As the result of this evaluation these settlements are classified as good, intermediate and weak according to their adequacy to New Urbanism and most of the settlements were scaled as intermediate. In the evaluation system criteria created in three different scales based on the New Urbanism Movement. These scales are: the region / city scale, neighborhood scale, and building / surroundings scale. These criteria are set in a grading system and the settlements have been evaluated according to this system.

INTRODUCTION

In historical continuum there have been new movements in architecture, urban planning and urban design which have been produced by the reinterpretation of historical movements. Especially in recent years approaches interpreting the past and highlighting traditionalism have appeared on the agenda. One of these approaches is the “New Urbanism” movement that has been developed in US and the main feature of which is to refer to traditional cities in the design of urban and suburban developments.

The aim of this study is to analyze the influence of New Urbanism movement on new settlement areas of Istanbul as a contemporary theoretical approach in urban design and to test these settlements according to the principles of this movement.

New settlements in Istanbul are categorized according to their size, site and construction date and 24 of them are selected to be evaluated according to the principles of New Urbanism movement, the bibliography search, on site analysis, interview with inhabitants was made, visual data was collected by photo taking. The information collected through these analysis techniques was categorized and evaluated according to the principles of New Urbanism. Evaluation criteria were created in three urban scales based on New Urbanism movement. These scales are Metropolis, City and Town; the Neighborhood, the District and the Corridor; the Block, the Street and the Building. These criteria were set to a grading system and each settlement was evaluated in this system.

The selected settlements were ranked according to their adequacy to New Urbanism movement based on the final grade after the evaluation (Ozdemir,2006).

New Urbanism

New Urbanism movement emerged at the end of 1980’s and at the beginning of 1990’s. The aim of new urbanist is the restoration of urban spaces formed through urban sprawl transforming them to real neighborhoods and diverse districts (Fig. 1) (http://www.cnu.org).

Highlighting that physical solutions by themselves are not enough to solve social and economic problems new urbanist defined the principles for the public policy practices.

These principles are: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice. (Congress for the New Urbanism, 2000).

Fig 1. The comparison of suburban sprawl with traditional neighborhood design (Katz, 1993), Fig 2. The master plan of the Seaside, as the first application of New Urbanism it is considered the symbol of the movement (www.dpz.com).

Design principles of New Urbanism

New urbanist defined the characteristics of the movement and urban design principles with the Charter of New Urbanism in the first congress held in 1993. The charter was organized according to the three scales of New Urbanism: 1. Region, 2. Neighborhood-District-Corridor, 3. Street-Block-Building (Fig. 2).

Region

It is the first scale of New Urbanism movement and it has city and town. New urbanist highlighted that urban design principles should be applied to the region as a whole (http://www.cu.org).

In region scale whole metropolitan area should be designed with the same principles as the design of neighborhoods. Regions should contain defined boundaries, the transportation system should support the pedestrian, public spaces should be forming spaces not left over spaces, public and private spaces should create an integrated hierarchical whole and there should be mixed population and mixed uses. (Katz,1993).

Neighborhood, district and corridor

Neighborhood, district and corridor, is the second scale of New Urbanism. Neighborhoods are defined as the main unit of urban development (Dutton, 2000) and as urbanized areas with balanced human activities. Districts are areas with specialized activities, and corridors are the connectors and separators of neighborhoods and districts (Katz, 1993).

Regardless of population density all neighborhoods have to be designed with balanced distribution of homes, offices, retail stores, civic buildings and parks. Neighborhoods should have a defined boundary and center, the ideal size of a neighborhood is 400 m. radius from the center (5 minute walking distance). There should be mixed uses and balance in uses such as homes, retail, offices, religion, buildings and traffic should be structured with interconnected network of transportation, and public spaces and civic buildings should be in priority locations. (Katz, 1993). District is the urbanized area with specialized functions. The specialized functions should allow other activities in order to support the community identity. The design of the districts should be supported by the transit connections (Katz, 1993).

The corridors function as connectors and separators between neighborhoods and districts. Corridors containing natural or artificial elements can vary from traces in the wild to the transit routes. The site and the type of the corridor are determined by surrounding densities. (Katz, 1993).

Street, block and building

It is the last scale of the New Urbanism movement. Neighborhoods are designed through well considered assembly of streets, blocks and buildings (Katz, 1993). In this scale it is needed to place cars as well as pedestrians (Congress for the New Urbanism, 2000).

Streets are not dividing lines in cities; they should be common spaces and passages. Street models should be defined considering that a single street is a part of a street network (Katz, 1993). Streets should be designed as public spaces and pedestrian friendly (Dutton, 2000). The details of street design should be defined considering their proper use for pedestrians (Katz, 1993). The shape of blocks, present the building structure and public spaces of the city. Blocks can be square, rectangle shaped or their shape can be irregular. (Katz, 1993).

Buildings should be designed not only according to their functions but also to their types. Density rules should be independent from the building function and parking. Structurally buildings should follow street and block rules and formally they should be in harmony with other buildings. Monumental buildings should be the expression of social identity in cities. Building frontages should highlight the public character of streets, reflect the semi public character of open spaces in the blocks, paseos and backyards meet the service facilities. Building types should secure the historical continuum. Buildings reflect space and time hence they shouldn't be left unused. (Katz, 1993).

The transect system of New Urbanism

Transect is the system defined by New Urbanism with the aim of organizing all the elements of human environment. It is a system classifying these elements ranging from rural to most densely urban (Fig. 3). These various settlement types and concepts contain different urban densities: center, general, edge containing rural and urban (Bressi, 2002).

Neighborhoods should be designed with the combination of these transect zones (Duany, 2001). The transect system defines the features and design qualities of streets, densities, functions, buildings, frontages, public spaces, intersections, parking, sidewalks, streetscapes, lighting, green areas and landscape for each transect zone. (Steuteville., 2001).

Fig 3. The transect system of New Urbanism (Steuteville, 2001)

The effects of new urbanism in Istanbul

New urbanism was emerged in USA because of the crisis the American city was experiencing. The problems were uncontrolled sprawl of cities destroying the natural environments and natural resources, loss of community identity, loss of secure living places. The solution was found in the traditional neighborhood designs. These neighborhoods were compact, pedestrian friendly and with strong community identity.

In recent years at the edges of Istanbul new housing developments were emerged with influence American suburban development. Some of them were affected from new urbanism. The principles of new urbanism were defined for both suburban and urban areas but the effect of the movement in Istanbul created suburban luxury housing developments. These settlements were designed with the traditional design elements mainly imitating traditional architectural styles.

The evaluation of the new settlements in Istanbul

The evaluation system for the selected 24 new settlements (Table 1) in Istanbul based on principles of new urbanism is developed aiming to test the adequacy of these settlements to the movement (Fig. 4, 5, 6, 7) (Ozdemir, 2006).

The evaluation system contains evaluation criteria based on the main three scales of New Urbanism. In this system, each criterion was given a point from a scale of five. As a result of this grading system the settlements adequacy, according to the New Urbanism Movement, was evaluated. (Ozdemir, 2006).

Table 1. Selected new settlements in Istanbul for the evaluation

European Side	*Anatolian Side*
Kemer Country	*Beykoz Mansions*
İstanbul İstanbul	*Acarkent*
Cesmeler Valley	*Cengelkoy Mansions*
Burgaz Houses	*Optimum Houses*
Zekeriyakoy Houses	*Kasaba*
Atlantis Houses	*Meseli Houses*
Sedadkent	*Elysimum Park*
Alkent 2000	*Aqua City*
Durusu Park	*Aqua Manors*
Vadi Park	*Istanbul Palace*
Hisar Houses	
Guzel Sehir	
Ardicli Houses	
Sunflower Houses	

The evaluation criteria for the settlements is as follows:

Region and city scale

The principles of New Urbanism put a great emphasis on the controlled growth of cities and the integration of new settlements areas with old city and their site for the protection of natural resources. The evaluation criteria in this scale were developed aiming to test how the location decisions effect the sprawl in metropolitan areas and cause the damage on natural resources of the city. The development of the metropolitan areas as a whole also depends on well-designed transportation connections. The harmony with existing development and with traditional, vernacular and natural features secures the creation of integrated metropolitan area. The evaluation criteria is in this scale was defined as follows: site in the city, harmony with the existing developments, transportation connections, harmony with the traditional, vernacular and natural features and size.

Neighborhood scale

Neighborhood is the main organizing element in new urbanist designs. Neighborhoods are places where human activities are organized in balance. The design of neighborhoods has a great importance for constructing a strong community identity, community sense and integrated relation between the members of the community. Based on this necessity the evaluation criteria for this scale were developed as follows: transect zones, center, size, network of streets, alternative transportation, parking, green areas, urban design entirety (Ozdemir, 2006).

Building and surroundings scale

The main aim of the design of neighborhoods is to emphasize the use of streets and public spaces as shared places. Streets should be designed as public spaces where the members of the community can create interrelations. The design of public spaces and the network of streets have a great importance in building a strong community identity and sense. The diversity of public spaces and housing types create a diverse community with mixed age, income and social groups live together in harmony. The evaluation criteria in this scale were evaluated to test the effect of streets and public spaces in building the community identity and if settlements were designed emphasizing diversity. The criteria are as follows: streets, streetscapes, public spaces, blocks, housing types and sizes (Table 4) (Ozdemir, 2006).

General evaluation of selected settlements

The selected settlements were categorized according to their adequacy to New Urbanism movement with their final grade after the evaluation as good, average

and weak (Table 5). After this categorization 9 of the settlements were evaluated as good and 15 were evaluated as average. There isn't any settlement evaluated as weak (Ozdemir, 2006).

The results of the evaluation of the selected settlements in region and city scale showed that they are located in licensed housing areas. They are in areas such as forest or water collection basins and they are in harmony with their natural environment. Private vehicle transportation is an important issue for the transportation connection of these settlements. Most of these settlements were in harmony with traditional, vernacular, and natural features. The adequacy of the selected settlements to the Region and City Scale of the New Urbanism Movement was evaluated as good, intermediate and bad. Most of the settlements were in the scale of "good". The number of "intermediate" settlements was eight and the number of the ones which were in the "good" category was fifteen. There was one settlement which was scaled as "weak". By this evaluation it was determined, according to this ratings scale, these settlements were generally in line with the New Urbanism (Ozdemir, 2006).

According to the Neighborhood Scale, the settlements' organization, whether urban or rural, was evaluated according to the rules of the New Urbanism movement. In evaluating the characteristics of the center, it was determined that the uses in the center are clearly defined and that they mostly serve only the settlements. The settlements' borders are defined by way of street lanes or natural features of the site. The size of the selected settlements showed that most of them are not larger than a radius of 400 meters from the center, which indicated that they gave importance to pedestrian movement. Most of the settlements have network types that are defined and support the pedestrian movement. Alternative transportation facilities were not present in the settlements that were evaluated. In most of the houses, private garages and common parking areas exist. The settlements green systems were defined as house yards and common greens and parks, but in some only house yards were present. In most of the settlement layouts, urban design guidelines and house types with the objective of creating urban design unity were implemented. These definitions aim to reflect traditional values and be in harmony with nature. In these settlements there are no definitions made regarding street types and street scapes. The settlements were evaluated as "good", "intermediate" and "bad" according to the Neighborhood Scale of the New Urbanism Movement. According to this evaluation the number of settlements, which are "good", were nine and the number of the ones that are "intermediate" were fifteen. There were no settlements which were scaled as "weak". The conclusion was that the settlements are adequately in line with the New Urbanism neighborhood scale concept (Ozdemir, 2006).

In the Building and Surroundings Scale evaluation, it was seen that no differentiation in street types and scapes was created. Public spaces in the settlements were mostly defined. The number of the settlements with defined blocks and undefined blocks were similar. These settlements had a variety and traditional characteristics in housing types. Mixed housing types and sizes aim to offer a variety of choices to the users. The evaluation of the settlements according to this scale was also made as "good", "intermediate" and "weak" and five of them were scaled as "good". There were sixteen settlements which were scaled as "intermediate". The settlements are adequate according to the characteristics of New Urbanism Movement (Ozdemir, 2006).

Fig 4. Settlements in Istanbul that are evaluated, Beykoz Mansions (Beykoz Mansions management office, Fig 5. Settlements in Istanbul which are evaluated, Kemer Country (www.kemercountry.com)

Fig 6. Settlements in Istanbul that are evaluated, Zekeriyakoy Houses, Fig7. Settlements in Istanbul that are evaluated, Sunflower Houses (www.sunflowerevleri.com)

Table 2: The method of the evaluation of the settlements in suburban areas of Istanbul, Region and City Scale (Ozdemir, 2006).

	CRITERIA	EVALUATION	POINT
REGION AND CITY SCALE	General Design Principles	Settlements aiming to define the community identity and providing relaxed, peaceful living environment.	5
		Settlements aiming to provide relaxed, peaceful living environment.	4
		Settlements aiming to create peaceful living environment in a natural location.	3
		Settlements aiming to provide privileged living environment.	1
	The Location in the City	Settlements that are located in current or development housing areas	5
		Settlements not located in a forest area, wetland or areas that construction is prohibited but located in areas that are not designated for housing.	3
		Settlements that are located in forest areas, wetlands (outside absolute protection zones) but certificated housing areas.	2
		Settlements that are located in absolute protection zones or in areas that construction is prohibited.	0
	Harmony with Existing Developments	Settlements that are integrated with existing developments.	5
		Settlement that are partially integrated with existing developments.	4
		Settlement that are very little integrated with existing developments.	1
		Settlement that are not integrated with existing developments or damaging the character of existing developments.	0
	Transportation Connections	Settlements containing both public transportation and highway connections.	5
		Settlements containing drive way connection to public transportation connection.	3
		Settlements containing only drive way connections.	1
	Harmony with Traditional, Vernacular and Natural Features	Settlements containing traditional, vernacular and natural features.	5
		Settlements containing traditional and natural features but not vernacular features.	4
		Settlements containing traditional and vernacular features but not natural features.	3
		Settlements containing natural features but not traditional and vernacular features.	2
		Settlements containing traditional features but not natural and vernacular features.	1
		Settlements not containing traditional, vernacular and natural features.	0
	Size	501 - 700 Houses	5
		251 - 500 or 751 - 1001 Houses	4
		101 - 250 or 1001 - 1500 Houses	3
		51- 100 or 1501 - 2000 Houses	2
		50 or less or 2000 or more Houses	1

Table 3: The method of the evaluation of the settlements in suburban areas of Istanbul, Neighborhood scale (Ozdemir, 2006.)

	CRITERIA	EVALUATION	POINT
NEIGHBORHOOD SCALE	Zoning	Transect system is used in the entire settlement.	5
		Transect system is implemented through density varieties.	3
		Only two or three scales of the transect system is implemented.	2
		Only one scale of the transect system is implemented.	1
		Transect system is not implemented.	0
	Center	Centers with defined functions and serving both to the settlement and to the region	5
		Centers with defined functions and serving only to the settlement.	4
		Centers with no defined functions.	0
	Boundaries	Defined boundaries.	5
		Partially defined boundaries.	3
		No defined boundaries.	0
	Size	400 m. radius from the center (5 minute walking distance)	5
		400 m. - 800 m. radius from the center but close to 400 m.	4
		400 m. - 800 m. radius from the center but close to 800 m.	3
		800 m. - 1200 m. radius from the center	2
		1200 m. - 1600 m. radius from the center	1
		1600 m. radius from the center	0
	Network of streets	Defined street network types supporting pedestrian access and containing continuity.	5
		Street network types are not defined but support pedestrian access and contain continuity.	4
		Street network types are defined support pedestrian access but don't contain continuity.	3
		Street network types are defined that don't support pedestrian access but contain continuity.	2
		Street network types are defined but don't support pedestrian access and don't contain continuity.	1
		Street network types are not defined, don't support pedestrian access and don't contain continuity.	0
	Alternative Transportation	Containing public transportation and bicycle lanes inside the settlement.	5
		Containing only public transportation.	4
		Containing only bicycle lanes	3
		No need to alternative transportation because of the size of the settlement.	2
		No alternative transportation only network of roads.	1
	Parking	Balanced distribution of parking spaces that serve to the entire neighborhood and that serve to houses and public spaces.	5
		Containing parking spaces that serve to the entire neighborhood and that serve to houses.	3
		Containing only parking spaces that serve to the entire neighborhood.	2
		Containing only parking spaces that serve to houses.	1
	Green Spaces	Balanced distribution of green areas of every scale.	5
		Containing neighborhood green spaces and private gardens.	4
		Containing only common green spaces.	3
		Containing only neighborhood green spaces.	2
		Containing only private gardens	1
	Urban Design Patterns	Urban design patterns defined for the entire settlement and for housing types.	5
		Urban design patterns defined for the entire settlement but not for housing types.	4
		Urban design patterns defined for housing types but nor for the master plan of the settlement.	3
		Urban design patterns not defined for the entire settlement and for housing types.	0

Table 4. The method of the evaluation of the settlements in suburban areas of Istanbul, building and surroundings scale (Ozdemir, 2006).

	CRITERIA	EVALUATION	POINT
HOUSE AND SURROUNDINGS SCALE	Streets	Street types designed for different uses and that contain hierarchy.	5
		Street types designed for different uses and that don't contain hierarchy.	4
		Street types not designed for different uses but contain hierarchy.	3
		No need for the definition of different street types because of the size of the settlement.	2
		Street types not designed for different uses and that don't contain hierarchy.	0
	Streetscape	Various streetscapes are defined based on variety of uses.	5
		Streetscapes are defined without variety.	4
		Streetscapes and not defined and variety is not created.	0
	Public Spaces	Public spaces contain squares, parks, playgrounds and sport areas.	5
		Public spaces contain squares, parks and sport areas.	4
		Public spaces contain squares and sport areas.	3
		Public spaces contain only squares.	2
		Public spaces contain only sport areas.	1
		No public spaces defined.	0
	Housing Types	Mixed housing types containing vernacular and traditional features.	5
		Mixed housing types containing traditional features but not vernacular features.	4
		Housing types are not mixed but contain vernacular and traditional features.	3
		Mixed housing types not containing traditional and vernacular features.	2
		Housing types containing traditional features but not variety and vernacular features.	1
		Housing types don't contain variety, vernacular and traditional features.	0
	Housing Sizes	No house sizes bigger than 400 m2 is used and contain variety of sizes.	5
		No house sizes bigger than 400 m2 is used and but that don't contain variety of sizes.	4
		House sizes bigger than 400 m2 is used but that contain variety of sizes.	3
		House sizes bigger than 400 m2 is used and don't contain variety of sizes.	2

Conclusion

The process of formation of new settlement areas in a city has a great influence on urban growth and sprawl. The uncontrolled growth and sprawl causes the fragmentation of the city as a whole and destroys natural environments. The regional plans have a great importance to control urban growth and urban sprawl. It has great importance that the need for new settlement areas is determined before defining new development areas (Ozdemir, 2006).

Table 5. The adequacy of settlements to the New Urbanism movement.

Settlement Name	*Region Scale*	*Neighborhood Scale*	*House and Surroundings Scale*	*Total Points*
Kemer Country	*27*	*37*	*28*	*92*
Istanbul Istanbul	*23*	*32*	*22*	*77*
Aqua City	*25*	*21*	*20*	*76*
Aqua Manors	*24*	*30*	*21*	*75*
Sunflower Houses	*20*	*34*	*20*	*74*
Alkent 2000	*24*	*32*	*18*	*74*
Elysimum Park	*17*	*36*	*20*	*73*
Guzel Sehir	*24*	*28*	*19*	*71*
Ardicli Houses	*24*	*27*	*20*	*71*
Kasaba	*17*	*28*	*23*	*68*
Zekeriyakoy Houses	*21*	*28*	*19*	*68*
Cesmeler Valley	*23*	*28*	*17*	*68*
Beykoz Mansions	*18*	*32*	*16*	*66*
Meseli Houses	*14*	*33*	*17*	*64*
Sedadkent	*26*	*31*	*6*	*63*
Optimum Houses	*8*	*30*	*24*	*62*
Durusu Park	*19*	*25*	*18*	*62*
Cengelkot Mansions	*24*	*16*	*20*	*60*
Atlantis Houses	*17*	*25*	*17*	*59*
Istanbul Palace	*21*	*23*	*10*	*54*
Vadi Park Houses	*15*	*30*	*8*	*53*
Burgaz Houses	*18*	*21*	*10*	*49*
Acarkent	*12*	*26*	*10*	*48*
Hisar Houses	*14*	*17*	*8*	*39*

New Urbanism emphasizes designing neighborhoods free from cars. It was determined that for the selected settlements in Istanbul choosing the location related to the transit line was excluded. Settlements should be located on transit lines routes with walking distance to transit stops. (Ozdemir, 2006).

The design of new settlements should be in harmony with historical, vernacular and natural features of the site for the conservation of the city formed by the combination of different elements. The evaluation of the selected settlements in Istanbul showed that harmony with the historical and natural features is important but harmony with the vernacular features was excluded. The design of settlements should contain the vernacular design elements of the site in order to create entirety (Ozdemir, 2006).

The transect system in New Urbanism is created aiming to guarantee the wholeness of neighborhoods. The evaluation of the selected settlements according to the transect system showed that the settlements contain the design elements of the transect system only in the master plan. However this system should be implemented in all urban design scales to create community identity (Ozdemir, 2006).

New urbanist principles enhance the design of neighborhoods free from cars. In this context the transportation network of the settlements should contain an integrated system of car and pedestrian movement. Pedestrian movement system should contain diversity through intersections with motor ways, parallel to motor ways or separate routes (Ozdemir, 2006).

The definition of urban design patterns is important to create entirety of the settlement and for the definition of the community identity. This necessitates that urban design patterns should be defined for all urban design scales (Ozdemir, 2006).

Mixed housing types and sizes are needed to guarantee mixed age and income groups. The creation of mixed housing types and sizes in the selected settlements aimed to give alternatives for users (Ozdemir, 2006).

The character of the urban and social developments today and for the future is closely related with the developments of the past. In this context lately the emergence of the traditional neighborhood designs results from the need to solve contemporary problems through learning from history. The main goal of these approaches is to create neighborhoods designed for human scale. In history cities

were designed for human scale with elements in harmony with nature. The goal of the traditional neighborhood designs in urban design is to solve the contemporary urban and social problems in cities through the great qualities of the traditional neighborhoods. This goal is defined based on the relation with people and space and it is aimed to solve social problems through spatial designs (Ozdemir, 2006).

In the process of continuing evolution human kind detaches him self from its own nature and social relations weaken because of that. The design of the living environment with human scale and supporting the creation of strong social relations is needed. The traditional neighborhood designs containing these qualities designed with the synthesis of today and past and leading to the future will strengthen social structure and the creation of high quality urban spaces (Ozdemir, 2006).

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