

Urban design for sustainability: A study on the Turkish city

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SUMMARY

In line with sustainable development principles, the reactions to modern architecture and planning have led to a new appreciation of traditional cities and urban environments.

Considering the extensive neglect and devastation of local values in our cities and towns, urban development practice in Turkey cannot be said to meet the requirements of sustainability. This paper, therefore, will explore the logic of sustainable development and focus on the components of good urban design which are needed to produce it. Since promoting sustainable lifestyles in our towns and cities depends mainly on the design of the physical environment, the paper will propose a set of key design principles that can deliver sustainable urban development through exploring the qualities of 'traditional urbanism' in the Turkish cities as well as examining the latest approaches to urban design.

INTRODUCTION

In line with the basic principles, *utilitas*; *firmitas* and *venustas*, defined by Vitruvius, architecture and urban design are said to consist of 'commodity, firmness and delight' (Wotton 1969; Moughtin 1992). In contemporary urban design, one aspect of commodity is 'sustainable development', that is a development which is non-damaging to the environment and which contributes to the city's ability to sustain its local environmental, economic and social qualities.

Extensive neglect and devastation of local values in our cities and towns, suggest that urban development practice in Turkey cannot be said to meet the requirements of sustainability. It is no longer logical to continue debate on such

questions as 'what urban design is' or 'who the urban designer is'. What is essential here is the need to avoid seeing urban design as merely engaged in the visual qualities of small urban places, but to see it as a process through which we consciously shape and manage our built environments and focus on the requirements of sustainable development. To that end, a new appreciation of the traditional cities and urban environments is greatly needed as they were often good examples of sustainable design in their time, represent good uses of local resources matched with local skills, and in combination, produced a built environment which meets people's needs.

BACKGROUND TO THE STUDY

Turkey is an ideal case to reveal the impact of modern architecture and urbanism on traditional cities. Turkey has a long history of contact with Europe and America, whose influence can be seen clearly in its cities and towns in the form of architectural monuments and urban design. Especially since the founding of the modern Turkish Republic in 1923, westernization has been officially embraced in all aspects of life. In line with this, a rapid transformation in many aspects took place in Anatolia, where the Turkish rule under the Seljuks and Ottomans over a period of 800 years had produced a distinctive civilization, and an enormously rich architecture. Urban development was considerably influenced by rapid, one-directional, unbalanced and unplanned urbanization.

Besides the negative aspects of technological advances, standardization in planning and design practices has caused the destruction of the uniqueness of places. Due to rapid increase in population over the last three decades, traditional quarters were largely devastated and the characteristic urban house traditions have been replaced by an unfortunate model of housing, where apartment blocks are built on a massive scale, with little thought given to family structure or neighbourhood organization.

Owing to the westernization of the country, with the integration of the country to the capitalist world economy, the social bonds of communities started to decline, to be replaced by commodified relationships. The urban fabric was opened up to allow the free movement of goods and services, access for security forces, as well as creating modern images. The torn apart urban space was recognized on new bases. The division of the city on the basis of living quarters, therefore, changed to one of classes. The mixture of rich and poor in the quarters of the old cities started to be abandoned by the middle classes who moved to the new districts. The townscape of the inner city has changed as well. In the central areas, we have lost much of the quality of variety, the 'fine grain' of the city that was first advocated by the Joint Centre for Urban Design (Bentley *et al.* 1985), not just in relation to the inner city but also equally for the urban edge and the new settlements that contribute to street life and vitality. The dense and varied rhythm of the traditional street is being replaced by larger

residential and commercial developments, increasingly zoned into single-use areas lacking vitality and liveability most of the time.

Rapid urbanization is also characterized since 1950 by a rapid increase in the number of squatter dwellings that surround the major cities (Keles 2000). In the last 10 years, new mass housing settlements in the form of suburbs were also added to this picture in the major cities as an alternative for people suffering from the lack of conveniences of the inner city (such as traffic and parking problems, noise, pollution, insufficient greenery and play areas, etc.). Accordingly, the cities have become more fragmented, the urban form has loosened, and segregation between different uses and different users has grown.

Similar problems are being observed in the urban edge and new housing developments. In these areas, much of the urban landscape, in parks and gardens and formal open spaces of the city, has been subjected to a universal design standard that denies a sense of place. Accordingly, the residents of the neighbourhood cannot develop a sense of belonging. Missing the appropriate density of dwelling units and the right balance between the open spaces and built-up spaces, the general appearance of the neighbourhood also has no identifiable character. It rather displays monotony and a view of a group of isolated concrete blocks. Streets have become mere vehicular channels without any spatial definition and public use. The ecological diversity of the native landscape in and around the old quarters has been totally ignored.

With regard to these negative results, the pioneer Turkish architect and scholar Sedad Hakki Eldem (1987, 269) commented that: '*Turkish cities were unprepared to face the demands of the twentieth century, with the net result that as modern cities encroached on traditional Ottoman structures, they destroyed whatever was valuable or worth preserving in them.*' Nonetheless, traditional architecture and urbanism can still be observed in Turkey, albeit often in fragments, providing valuable clues in terms of sustainability.

THE SIGNIFICANCE OF SUSTAINABLE DEVELOPMENT

In *The Life and Death of Great American Cities*, Jane Jacobs embraced complexity as a goal in itself.

'How' she asked, 'can cities generate enough mixture of uses, enough diversity throughout enough of their territories, to sustain their own civilisation?' (Jacobs 1961). The key idea here is sustainability, one of the most diversely applied concepts among academics and professionals discussing the future . . . that has cut across all disciplines and professions and has developed many complexities.

Sustainability, in essence, is a way of thinking about one's relationship to the natural world in the context of time. However, sustainable design is difficult to describe in a sentence or two; its overall goal is to improve the quality of life of human beings – both at the urban and architectural levels – within the capacity of the global ecosystem. A generally accepted definition of sustainable development is from the Brundtland Report: (WCED 1987): 'Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.' Alternatively, sustainable development is based upon a development which balances urban development with the conservation of environmental resources of land, air, water, forests, energy, etc. On the other hand, culture, society, and power are also the bases of sustainable development.

It is important to understand that the idea of sustainability is not new. The increased interest in indigenous building methods over the past 30 years reflects the increasing awareness that there are many lessons to be learnt that can contribute to meeting contemporary and future building and planning needs (Oktay 1999a,b; 2001).

However, factors such as demographic growth, and shifts from rural to urban areas create an unbalanced population movement, natural and man-made resource depletion, and significant changes in expectations and lifestyles, all of which combine, in their various ways, to erode the viability of traditional approaches to shelter provision. This means that whilst there are some aspects of traditional approaches which still work well, other aspects may have become inefficient or unworkable, or generally unsustainable. Gradually, it becomes clear that an alternative has to be found.

Between the declining viability of traditional solutions and the inaccessibility of many alterna-

tives, urban design for sustainability defines an approach that seeks to bridge this gap.

A NEW FRAMEWORK FOR URBAN DESIGN BASED ON THE QUALITIES OF THE TRADITIONAL CITY

In the text, traditional Turkish city will refer to the Ottoman-Turkish city, the life environment built collaboratively by various cultures on a geographical setting extending from middle Asia to Anatolia, from the Mediterranean to Balkans.

It is known that most architects, town planners, and urban designers do not have the opportunity to create entirely new towns or villages. More often, the designer will work within existing urban areas or within changing or expanding settlements where the legacy of the past is still useful. To that end, traditional Turkish cities are excellent examples to learn from as they represent good uses of local values and resources, matched with local skills meeting people's needs in their times.

A brief description of the Turkish city

In the traditional Turkish (Ottoman) city, built collaboratively by various cultures on a geographical setting extending from Middle Asia to Anatolia, from the Mediterranean to the Balkans, demonstrating sensitivity to local topography, praising the Islamic and Christian philosophies of respect for nature, accepting the local habits and traditions as the reason of its existence, the life environment has been the keeper of a multitude of human values for centuries (Cerasi 1999).

From an urban and social point of view, the main characteristic of the traditional city was its compartmentalization by *mahalles* (quarters), the outcome of ethnic particularities and religious differences. The *mahalle* was a geographical entity as well as a homogeneous community that was closely knit, forming the basic unit of society (Figures 1–2). The solidarity between the small group of people living in every quarter was based on family, clientele, and common village origin, ethnic or sectarian religious identity, in some cases probably strengthened by common occupation. These quarters, that were generally based on the social order of Ottomans, were separated



Figures 1–2 *Mahalle*, a geographical entity as well as a homogeneous community that was closely knit, forming the basic unit of society. Top: General view (Chamber of Architects of Turkey archive); bottom: plan (Aru 1998: 279)

from each other by implied borders, such as tree groups, vegetable gardens and *bostans* (melon fields) (Aru 1998, p. 12). Each of them had its own characteristics and provided an indicative, unique social environment for their inhabitants. The basic elements that made the *mahalle* self-sufficient were the religious–social centre; small local market, fountains, *imaret* (open kitchen) and, at times, workshops.

Although the rule of a centralized authority was clearly seen in monumental buildings, great personal freedom was exhibited in *mahalles*. The efforts of numerous private builders in residential areas were guided only by a few simple rules of

civility, assuring individuality within the neighbourhood, as well as community identity, apart from the works of government. It is a remarkable lesson that every house in a Turkish city was different, even as there is an overall consistency in building technique, scale and character, a quality which was ascribed by Eldem (1987) to be the result of a deeply rooted ‘democratic way of life’ that could assert itself within the larger Ottoman Empire. As such, an equilibrium of expression of community values and the values of government was reflected.

The space of the traditional city was, at a functional level, clearly divided into public and private realms. The public realm, often in the town centre, contained all the collective activities of the town, such as trade and commerce, religion, education, administration, and urban facilities. On the other hand, the house where extended families lived constituted the private realm. The extended family formed the base of social life. The social status of the woman, seclusion and a restricted social role, determined the pattern of the house, influencing the separation of residential quarters from the commercial. This is a constant. However, the survival of regional architectural styles, different stone building traditions and different climatic conditions created various cityscapes (Kuban 1986).

The street system in residential areas was mostly pedestrian and had a hierarchical order: from the main streets spread out narrower streets that themselves had dead-end branches that led to individual houses. In this system, only the main through-fares separated the city fabric. This system was achieved through a process of organic growth, in which the street pattern was gradually adjusted and changed according to the needs of the local people, where there was no need for wider streets and a low level of accessibility was required. Despite the criticism of the street system from the viewpoint of accessibility and vehicular traffic, a conservationist principle is said to exist in this organic growth that concentrates on the minimum space required (Madanipour 1994). The narrow and winding streets also gave more security to the inhabitants of the city against the horse-riding invaders. Moreover, this organic character of the street, in the state of continuous becoming, produces an effect of great expressiveness. From an urbanistic point of view, there-

fore, the street is the main character-melding element in the traditional city.

Certainly, the street which served to link every urban space together bore the potential to become socially significant. Children played there, a fountain could draw the women of the neighbourhood together. However, these streets were not considered to be an appropriate place for social intercourse, unlike other countries of the Mediterranean. Nevertheless, this negative social aspect of the street carries its own meaning, so that it becomes naked expression of the social character and tissue of Turkish society (Kuban 1986) (Figure 3). On the other hand, the courtyard of each house, an isolated environment that is well defined and well protected, serves a variety of uses, including social gatherings, such as weddings and circumcision parties, women preparing winter food together or just spending time together. (Figure 4).

Owing to the fact that Ottoman urbanism was never based on the kind of strong formalism characteristic of western cultures, a generally informal character was dominant in cities. In this context, there were no formal public spaces or

monumental axes to be found in the cityscape. However, despite having no planned squares and the lack of an active use of *meydan* (Figures 5–6) by people, there was a social and psychological tendency towards meeting and gathering in open spaces (Eldem 1987; Cerasi 1999). Many small

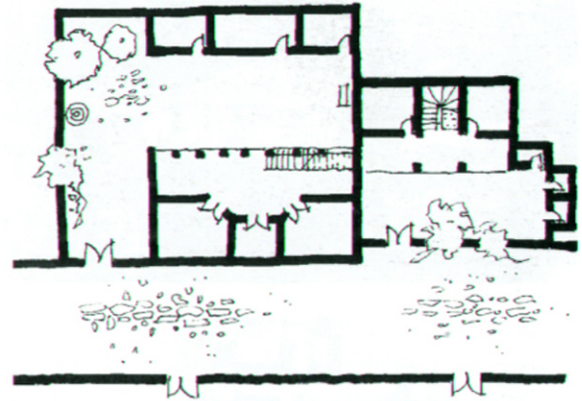


Figure 4 The plan of houses with *avlu*, the residential courtyard



Figure 3 The view from a typical street, Antakya (S. Bal archive)



Figures 5–6 *Meydan*, the main open space, and the fountain place (Cerasi 1999: 322, 373)



Figure 7 The view from a small public square in the residential quarter, Safranbolu (Chamber of Architects of Turkey archive)

public squares existed within the quarters, at the intersection of the streets or in front of the significant buildings, which clearly shows their importance in the social life of the cities (Figure 7). They had no elaborated architectural forms but, as with other components of the city, these small squares might be regarded as the elements constituting a hierarchy of open spaces that contributes to the unity of urban space as a whole. The main public node and the representation of people's power were bestowed on the citadel, the Friday mosque, and the bazaar. In many cities, the courtyard of the Friday mosque was the main public open space. One of these elements, the main – often covered – street or streets of the city, the bazaar or *arasta*, functioned also as a communication channel, connecting these to each other and to the less important activities such as public baths, water storage, and educational centres, hence creating a vivid public realm in a spatial continuum (Figure 8). This space was the meeting place of the local people, with each other, with the political, religious and economic hierarchies, and with the outside world.

The traditional Turkish city is the perfect example of integration between architecture and natural landscape, in other words, 'design with nature'. The pre-existing topographic character of the site is apparent at the urban scale even in

intense built-up areas. Furthermore, gardens perforate an otherwise dense urban fabric, providing relief to streets and to public and private structures. The presence of a variety of house plans, all with a courtyard, *avlu*, or garden in every region of Anatolia, reveals the fact that there is a natural relationship between such a layout and the Anatolian life-style (Kuban 1986). With its trees, flowers and small vegetable plot, the *avlu* is the closest relation the house has to nature; and thus it also provides the inhabitant with direct access to nature (Oktay 1999a,b). However, greenery does not exist in the streets, except for the courtyards of mosques and 'fountain squares'.

In line with these above-mentioned qualities and the latest approaches to urban design, this paper will turn to key physical aspects which exist in our traditional urbanism and would impact on quality of our neighbourhoods, towns and cities in new developments. In this context, the following aspects are considered worth examining:

- Promotion of the compact or de-fragmented urban form,
- Creating sustainable movement patterns,
- Improving public spaces,
- Combining urbanism and nature,
- Community development.



Figure 8 *Arasta*, the covered bazaar functioning as a communication channel in the city centre (Cerasi 1999: 325)



Figure 9 The view from a typical urban development in a central district, Ankara (C. Civa archive, in Aru 1998:279)

Promotion of the compact or de-fragmented urban form

When the urban framework is well designed and integrated, as in the traditional Turkish city, it plays a fundamental role in linking people and places together. When it is fragmented and unstructured, as in so many modern urban developments, it contributes to social segregation and alienation (Figures 9–10). In line with this fact, a key strand of research into sustainability strategies has focused on defining the urban forms that enable cities to function in a more sustainable way than at present (Jenks *et al.* 1996; Breheny 1992).

In general, research has led to the advocacy of cities that are spatially compact or de-fragmented with a mix of uses. As Engwicht (1993, p. 17) highlighted, 'Cities were invented to facilitate exchange of information, friendship, material goods, culture, knowledge, insight, skills, and also exchange of emotional, psychological and spiritual support'. What is asserted here is that for a truly sustainable environment, we need to maximize the exchange whilst minimizing the travel necessary to do it. All this implies as much variety of activity as possible, easily available within a reasonable walking distance of where people live and work.

This urban model is claimed to have a number of benefits in comparison with the more sprawling development characteristic of much of the last half-century. In particular, compact cities are argued to offer opportunities to reduce fuel



Figures 10–11 Fragmented urban framework in peri-urban areas, Istanbul (Istanbul Metropolitan Municipality, Kiptas 2001, Catalogue)

consumption for travelling, as homes, work and leisure facilities are closer together. They are also favoured because urban land can be re-used, while rural land beyond the urban edge is protected. Economic benefits, due to high concentrations of people supporting local economics, are also suggested. Ultimately, a good quality of life is argued to be sustained, with high concentrations of people providing social conditions conducive to vibrancy, liveliness and cultural production and consumption.

The compact city can be implemented on a variety of scales, from urban infill to the creation of entire settlements. Amongst these, the idea of new urban villages or free-standing new settlements in the UK and the 'New Urbanism' movement, as exemplified by the development of the small community of Seaside, designed by Duany and Plater-Zyberk in the USA are the most prominent ones.

How about the existing cities? Defragmen-

tation can be achieved in existing cities by two main methods:

1. Increasing densities,
2. Increasing mix of uses.

Increasing densities

Intensification may be considered in terms of two main phenomena: an increase in population/activity, or an increase in development within the city boundary (Burton *et al.* 1996). The former is brought about through re-urbanization – a process of encouraging people back into larger towns and cities to live and work (through ‘immigration’). Increases in population can be accommodated without adding to the built-up area of the city, through subdivisions and conversions of existing property to provide a greater number of residential units, or by more intensive use of existing non-residential buildings, in the case of employment. Such intensification may also include the re-use of redundant commercial and industrial buildings for residential purposes. Built form intensification may be achieved through development on vacant open land, re-development of land at higher building densities, infill in backland and gardens, and extensions to existing buildings. In all these efforts, the aim should be making the best use of existing urban land, mainly through the recycling of vacant or derelict land.

However, in an ecological design approach, density should be related to design in such a way that the advantages and disadvantages of its level are investigated by considering the existing social dynamics and environmental values. As Berglund (1998) highlighted, despite the difficulty in practice, the ecological image should not be bound to the density itself; it should take the soil and its advantages in the daily life and provide the required setting for it.

Increasing mix of uses

Increasing mix of uses requires a sensitive analysis of demand for the existing area, because the greater the proximity of a variety of uses, the more difficult compatibility can be. There is little point denying that, but equally there is little basis

for assuming it is automatically a problem. The 24-hour presence would ensure greater vitality and subsequent safety (Jacobs 1961; Bentley *et al.* 1985; Murrain 1993).

Naturally, some areas will never show the potential for accommodating such diversity. It may remain very difficult, and ultimately undesirable, to introduce significant non-residential uses to the whole texture of suburbia where the lack of variety is more visible. But even here, well-located local shops, community facilities and a more flexible approach to live-work units can be encouraged.

Mixed-use city centres are the natural form of most city centres but mixed-use is a consequence; it is not something that can be simply zoned. It is something that happens as a result of different factors. First of all, mixed-use is a consequence of scale: it is the one single thing that we seem to lose sight of in new developments. As urban designers we have lost the art of subdivision which is to do with the plot. We forget about the plot, we talk about the site all the time, and quite often our planning policies tend to be driven by large site issues. We have lost the idea that we have to get back to something that has a distinct size, that can enable a lot of things to happen.

Looking at the theme of mixed-use, it is believed that, unless we come to terms with this notion of a fine-grain, it will be very difficult to achieve ‘fine grain mixed-use’ towns. There are certain elements which help create these kinds of places: there is something about the pedestrian proximity, the structure of open spaces, the mixing of uses, the width of a building, the scale of the building, and what happens at ground floor level.

Creating sustainable movement patterns

In the last decade of the twentieth century, it has become increasingly apparent that driving must be reduced to minimize pollution, save energy, and rejuvenate community life. Despite this growing awareness, we are still largely shaping our environment to accommodate the car. Clearly, we need to focus more on design alternatives which provide opportunities for bicycling and walking, and which help to reduce automobile dependency.

Streets, parking lots, highways, the needs of

automobiles, are literally a 'driving' issue in most new developments, and the majority of these developments are inherently unsustainable because they essentially require people to own a car simply to get around. Accordingly, transport options have to be provided which people want to use. Few people will give up their cars completely, but many can be persuaded to reduce the use of their car if other options are sufficiently attractive.

The automobile's environmental impact is widely recognized. Their impact on the community is less obvious. Busy streets divide neighbourhoods. Cars isolate one person from another. Traffic jams take a daily toll on commuters who each year spend more and more time shuttling to and from work. In densely settled urban areas, traffic is a major obstacle to children's safety. The presence of heavy traffic can be intensified by badly maintained streets, which contribute to unpredictable patterns of movement. The lack of pavements or properly marked crossing zones also increases the dangers for children. The quality of neighbourhood interaction is also at stake. Research has shown that people who live on streets with heavy traffic are less likely to know their neighbours.

Considering the negative effects of vehicular traffic, making streets narrower simply 'calms' the traffic and enhances safety for pedestrians. Narrow streets have other advantages; since they require less asphalt to pave, they are cheaper to construct; rainwater run-off is diminished; unwanted summer heat gain, the black-pavement effect, is reduced. Integrating narrow streets with pedestrian paths and bikeways promotes the forgotten activity of walking. As people walk, they meet their neighbours and friends; the neighbourhood comes alive. Dedicating less land to automobiles means that more is available for people, parks, and green belts. As they make streets narrower, developers should also reduce the size of parking lots. Where parking is needed, these should be integrated into the overall landscaping design.

Streetscapes that support pedestrian travel in addition to vehicular movement should be encouraged. Pedestrian-oriented streets usually provide protection from the 'elements', safety and amenity, and encourage outdoor interaction among residents.

Cars also impose oppressive demands on

developers. They must deal with questions of street placement, and the need for costly new roads, curbs, highways, and parking areas. For almost 50 years, subdivisions have been designed around the needs, not of people, but of cars. Architects, urban planners and developers are now proposing and building communities designed in line with the principles of the 'New Urbanism', a movement in the United States which is based on the idea of 'walkable' neighbourhoods, villages, and small towns (Calthorpe 1993; Vliet 1998). Pedestrian-oriented communities are expected to put urban environments back on a scale for sustainability of resources, both natural and economic, and lead to more social interaction, physical fitness, diminished crime and other social problems. Pedestrian-oriented communities are more liveable communities, and lead to whole, happy, healthy lives for the people who live in them.

Improving public spaces

Cities exist for processes of communication and exchange between people, that is the only reason for having them in the first place, and public space is a key medium through which these processes take place (Goodey 1993, p. 72). A city can also be evaluated by its public spaces which reflect its public life, civic culture and everyday discourse. Therefore, the provision and use of public open space in a city is a vital factor in promoting social cohesion and urban revival.

The organic street structure of the Turkish city, comprising three-dimensionally defined street-space and its social meaning, despite some limitations of privacy, both at the city centre (i.e. men sitting at coffee-houses and in front of shops in the main street) and in the residential quarter (i.e. children playing, gathering at weddings and circumcision parties, etc.), show that they were an integral part of our lives in the past. As such, the street was a vital part of the urban landscape with its own specific set of functions and played a key role in the formation of community. However, today, streets have lost their significance in our lives, and considering their configuration, shape or form, it has not received detailed consideration.

In line with these features, the re-establishment of the main or high street as an urban focus could make an immediate impact on people's

lives. Accordingly, existing high streets should be maintained or rejuvenated, and in new areas the potential for progressive development of a new high street, acting as the social focus of the community, can be planned from the outset. In this context, trees with continuous active frontages, and overlooked from upper storeys, as in the case of Turkish *cumba* houses, would provide a natural form of self-policing.

Combining urbanism and nature

The biggest challenge in today's contemporary developments seems to be the quantity, nature and location of green spaces within those environments. However, as agreed by many authors, 'quality' has been put up against 'quantity' and the green spaces have been associated more with quantity and less with quality.

Green spaces in a city contribute to human activity, climate amelioration and ecological diversity, without separating and isolating people from each other, which is necessary for human interaction and community development. The understanding of the quality of nature in each place, expressing it in the design of communities, integrating it within our towns, and respecting its balance are essential ingredients of ecological site design, hence fundamental to true sustainability. In fact, the need for ecologically sensitive settlements was first addressed by Ebenezer Howard 102 years ago, who proposed the Garden City (1898) as an ideal community of 30 000 inhabitants surrounded by a green belt. Howard intended the Garden City as a refuge from the alienating character of the big city and a compensation for the deficiencies of country life.

In the newly developed areas of our towns and cities, since the districts need more definition and distinctiveness, it may be wise if they are bounded by and provide a continuous system of greenbelt – or wildlife – corridors to be determined by natural conditions. In housing areas, an attempt at integrating such features as edible landscapes of fruit trees, and highly productive gardens into site design would be beneficial for dwellers in terms of lower heating and cooling bills, lower food costs, and reduced risk of flooding and landslide damage. Trees with canopies can be used for their shading effect, and for the definition of spaces, both in streets and courtyards, *avlus*. When a more flexible design is possible, the traditional

concept of *avlu* can be reinterpreted and modified in the multi-storey housing developments, and housing blocks can be arranged around a semi-private courtyard space.

Community development

Urban design for sustainability reflects a duty of care for the community of life, particularly in housing areas. The planning and design of these areas should reinforce and encourage community interaction. In this context, the local social and traditional values are highly significant. It should also reinforce and encourage social interaction in the larger community.

The use of the concept of 'community' in the discussion of urban areas gives rise to a number of difficulties. First, one of the characteristics of modern society is the absence of overlap between geographical boundaries based on different criteria. Researchers have indicated the lack of correspondence between neighbourhood boundaries as perceived by the residents, the effective areas of services, or the spatial extent of neighbourhood boundaries. Each of these is an element in the definition of neighbourhood boundaries, and the extent of overlap among them has become one of the dimensions of 'community' (Menahem and Spiro 1989).

On the other hand, there are some arguments that propose to discuss social relations of urban residents in terms of social networks, which may be based on kinship, work ties, common interest or friendship, rather than neighbourhood. To that end, the social structure of the *mahalle* in the traditional Turkish city could be considered a perfect example, as it combines the spatial proximity of the residents with their special ties, kinship, etc. within a clearly bounded geography.

In terms of having a clear definition, existing neighbourhoods are often bounded by major arteries, which will still be required for necessary transportation. Other boundaries may be by green parks, fruit groves or major installations, such as college and university campuses. In this context, priority must be given to the design of the 'public realm'. From the front door to the street, to the square, the park and on out to the countryside, designs should create a hierarchy of public spaces which relate to buildings and their entrances, to encourage a sense of safety and community. Since residential communities

need areas of natural growth where people can relax together, and which satisfy the need for contact with nature, these areas should be used as formative elements, providing the focus and order of the neighbourhood.

CONCLUSION

The changes that the world has undergone over the past two decades have created a dramatically altered global order which requires a new understanding of the role of traditional settlements in the reconstruction of history. This is a more critical issue in cities with traditional roots, such as those in Turkey, where transformations in the urban level have reached dramatic levels.

Existing patterns of urban and suburban development seriously impair the quality of life in our cities. The symptoms are: more congestion and air pollution resulting from our increased dependence on automobiles, the loss of precious open space, the need for costly improvements to roads and public services, the inequitable distribution of economic resources, and the loss of a sense of community. By drawing upon the best from the past and the present, we can plan communities that will more successfully serve the needs of those who live and work within them. In this context, between the declining viability of traditional solutions and the inaccessibility of many alternatives, urban design for sustainability fills the gap by involving an increased emphasis on the value of natural, built and cultural environments.

According to such a philosophy, all planning should be in the form of complete and integrated communities containing housing, shops, work places, schools, parks and civic facilities essential to the daily life of the residents. As many activities as possible should be located within easy walking distance of transit stops. The community should have a centre focus that combines commercial, civic, cultural and recreational uses.

Designers should give prominence to the perceptual richness and use of the spatial environment – the fundamental aspects of architecture. In this context, *mahalle*, the quarter in the traditional Turkish city, reflects many positive aspects in terms of historical and cultural continuity. The most significant quality is identifiability through physical and social cohesion.

The aim of planning policies and urban design solutions must be to reduce the need for movement, and create new developments, permeable and accessible to the existing neighbourhoods. Transport connections have to be improved in a way that promotes efficiency, is environmentally sensitive, and prioritises the needs of pedestrians, cyclists and public transport users.

Public spaces should be paid great attention, not only in central districts but also, and most importantly, in the urban edge and newly developed settlements, where the space between is becoming more important as densities increase. The community should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent use is encouraged through placement and design. Public spaces should be designed to encourage the attention and presence of people at all hours of the day and night.

On a smaller scale, useful outdoor living space is an undervalued resource which can improve the quality of the built environment. Urban and planning codes often limit or condition the effective uses of these spaces, in particular when applied to housing. In considering the very low environmental impact of naturally conditioned outdoor spaces and the improved 'liveability' they provide, it is vital that these spaces are 'discovered' as an integral component of sustainable architecture and urban design.

Nature must be part of the city culture for practical use as well as for the recreation of the inhabitants. However, what is proposed here is achievable within the broad political economy. Therefore, at the wide political level, the emphasis on more centralized structures, intensive land-use, pedestrian proximity, restraints on high-speed traffic and the provision of far better public transport are needed.

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