

In pursuit of humane and sustainable housing patterns on the island of Cyprus

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SUMMARY

The newly developed urban environment often shows extensive neglect of local values and a lack of design promoting environmental quality in our cities and towns within the 'economic' concept of a city. Most housing environments, particularly those produced on the basis of mass production systems, are missing vital aspects of sustainability and lack environmental and humane qualities, both at urban and architectural levels. It is essential to focus on the requirements of sustainable development, both as a philosophy of planning and design and during the process of making and managing our environments. Current urban and architectural development practices in Cyprus cannot be considered sustainable. However, traditional settlements on Cyprus, such as the vernacular patterns, are excellent examples to learn from as they represent a long-established culture and good use of local values and resources, matched with local skills meeting people's needs. This paper first focuses on what sustainability means in terms of housing environments by highlighting the qualities of traditional housing patterns in Cypriot settlements. Second, it provides a critical evaluation of newly developed housing patterns on the island in terms of the environment and traditions. Finally, it proposes principles of sustainable planning and design whose main aim is to create buildings that are sensitive to people and the environment and are culturally specific.

INTRODUCTION

Since the inception of the Bruntland Report (WCED 1987), the sustainable city has been recognised as a city that enables all its citizens to meet their own needs and to enhance their well-being, without degrading the natural world or the lives of other people, now or in the future. Traditional

urban and architectural environments are often good examples of sustainable design, representing good uses of local resources matched with local skills, to produce a built environment which meets people's needs. A new appreciation of these traditional built environments is greatly needed

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(Alexander 2004; Oktay 2001). In this regard, housing seems to act as a container for changing circumstances, where individuals and groups play an important role in the creation of their habitats, and at the same time housing provides opportunities for long-term flexibility and adaptability (Lynch 1961; Marcus and Sarkissian 1986). Accordingly, the housing fabric must be capable of sustaining changes and must also be based on long-term user needs, life cycles and market conditions (European Commission 1990). Unfortunately, the creation of newly developed environments can lead to extensive neglect of local values and a lack of design that promotes the quality of the environment in our cities and towns. In such cases, urban development is often influenced by rapid, one-directional, unbalanced and unplanned urbanisation. In this situation, housing environments, particularly those produced on the basis of mass production systems, are missing vital aspects of sustainability and lack environmental and humane qualities, both at the urban and architectural level.

As previously noted (Cobham 1969; Oktay 1999, 2001, 2002), urban and architectural development practice in Cyprus, both in the north and the south, cannot be considered sustainable. This paper focuses on what sustainability means for housing environments where individuals and groups play an important role in the creation of their habitats and where opportunities are provided for long-term flexibility and adaptability.

After providing a critical evaluation of existing housing environments in terms of environment and tradition, this paper then proposes principles of sustainable planning and design whose main aim is to create buildings that are sensitive to people and environment and are culturally specific. Although the idea of sustainability is wide ranging, including local food production and consumption (i.e. the Italians 'Slow City' movement that is based on the concept of 'Slow Food'), waste recycling, etc. (Van der Ryn 1992: 68; Girardet 2004), the scope of this paper has been limited to those aspects which directly pave the way towards sustainable communities. In this context, the following issues will be addressed: local urban density and context, community development, movement patterns, open spaces and landscape, and overall building design.

A REVIEW OF OLD AND NEW HOUSING PATTERNS IN CYPRUS

In the era of globalisation, which has brought diverse problems, a new appreciation of traditional cities and urban environments is greatly needed, because they are often good examples of sustainable design that represent good uses of local resources matched with local skills, which produces a built environment that meets people's needs. Cyprus is one such case, where the settlements reflect many periods in its long history (Papacharalambous 1968). Since promoting sustainable lifestyles in our towns and cities depends mainly on the design of the physical environment, a set of key planning and design principles will be proposed in order to deliver sustainable housing patterns through exploring the qualities of traditional urbanism and architecture in Cypriot settlements.

Contextual patterns

When local urban context is considered, the district or neighbourhood is the identifying symbol, both for evaluation of the city and for new urban extensions, and is also fundamental for sustainable development (Moughtin 1996: 111). The term 'neighbourhood' has a special interest for urban designers, and designing communities has been a major social concern for more than three decades. Therefore, each district should have a strong identity, and density of built elements should be in proportion to natural elements. In planning for sustainability, the concept of density needs to be carefully considered; it should be related to design in such a way that the advantages and disadvantages of its level are investigated by considering existing social dynamics and environmental values. The quality of public spaces is also important, as they give cities their distinctive character (Oktay 2001, 2002).

The traditional urban pattern in North Cyprus is medieval in character, with well-scaled narrow streets, cul-de-sacs and public buildings, with organic open public spaces at intersections of streets or in front of public buildings (Salvator 1983). The settlement is a cohesive whole, comprising adjacent courtyard houses with streets being defined by the houses. Connecting a group of

houses with each other and to a larger circulation artery, the street was the most rudimentary intersection between the private and public domains, and shaped an outdoor 'common room'. In the past, this familiar territory was almost an extension of the home, where a multitude of group activities was accommodated within the limits of privacy (Figures 1 and 2) (Oktay 2001, 2002).

The cohesive and dense neighbourhood is today generally being replaced by a scattered distribution of slab-like apartment buildings in residential areas, which can hardly be recognised or imagined as an entity. Consequently, identity of districts is lacking and buildings are designed with little concern for their relationship to each other or for the global effect of the city. Although safe, well maintained, attractive and uncluttered public spaces provide the vital 'glue' between buildings, and play a crucial

role in strengthening communities (Oktay 2001), most public spaces in our newly developed districts are poorly designed, managed and maintained. They have no definition, no meaning, no proper landscape, and no relationship to surrounding buildings.

Social-spatial patterns

Creating a liveable housing environment and providing a sense of place and community has been a crucial question following the negative effects of 'The Modern Movement' on cities all over the world. The radical changes stemming from the Comprehensive Planning and Modern Movement not only affected the urban form, but also brought about a deterioration in social life. Massive housing projects built at the edge of a city, with the ideals of liberation, proved to be inhuman and led to individualism and alienation (Oktay 2000).

In the older settlements on Cyprus, the concept of neighbourhood was of great importance before the traditional lifestyle began to deteriorate. The neighbourhood was not only a physical entity within the city but also a social unit providing social and economic cooperation among neighbours (Oktay 1999, 2001). Reviews and research on social and spatial aspects of private and semi-private residential outdoor spaces in traditional areas of cities support the view that certain social values and conditions affect the formation and use of these spaces (Saalman 1968; Yarwood 1991). The two important elements in such settlements are the 'street' as a semi-public space and the 'courtyard' as a private space. The street, as a three-dimensionally defined space that has a direct link with houses, has become the communal meeting place for neighbours, particularly for women and children (Figures 3 and 4), while the courtyard serves a variety of uses including for social and celebratory events.

These positive social-spatial qualities pertaining to the older settlements are never reflected in new housing developments. These modern developments lack any local social and traditional values, both in individual houses and multistorey apartments. The most negative design aspects that cause social segregation in these settlements are the incoherent formation of buildings, creating a 'no man's land' around buildings, and the lack of a positive transition and interaction between indoor



Figure 1 Typical traditional urban layout in a Cypriot town



Figure 2 Traditional urban context in Nicosia (Photo: Theodoulos N. Toufexis, in S.G. Lazarides 2004)



Figure 3 Active use of the street in the mixed-use centre of Nicosia in former times (Photo: Theodoulos N. Toufexis, in S.G. Lazarides 2004)



Figure 4 Active use of the street in a Nicosia neighbourhood today (D. Oktay Archive)

and outdoor spaces within a hierarchy of semi-public, semi-private and private spaces.

Movement patterns

For a truly sustainable environment, we need to maximise the exchange between services whilst minimising the travel necessary to do this. This implies as much variety in activities as possible that

are easily available within a reasonable walking distance of where people live and work. The configuration of the street affects the mode of transportation and also the level of sustainability. In the traditional Cypriot town, the street system in residential areas was mostly pedestrian and had a hierarchical order: from the main streets, narrower streets spread out that had dead-end branches leading to individual houses. From an urbanistic point of view, the street was the main character-melding element and had a well-enclosed spatial character (Oktay 2001, 2002a,b). It was used not only for circulation but also as a place for living, both in central and residential areas, a condition created through its human scale and protected nature.

As a common feature of most newly developed housing areas in Cypriot cities, configuration of streets does not provide spatial enclosure that would be expressive and supportive for a more intense social life. The street layout extends from one end of the area to the other without any organisation, simply in order to reduce or lower traffic and create a gap between the two sides of the street (Figure 5). As such, the street space cannot be perceived and used by people for communal use. In addition, such roads sometimes cause danger because they encourage speeding (Oktay 1999). Another problem with these modern streets is that they do not include elements like trees to provide shady areas. Since the climate in Cyprus is very hot for most of the year, this is a critical issue to consider in future developments. The new mass housing schemes could also be assessed in terms of land use by new developments. In these large settlements, the site is predominantly residential and is not mixed with other functions. Therefore, it is almost dead during weekdays because of the way in which most people's time is split between work and home, but it also lacks vitality at the weekend.

Patterns of open space and landscape

The most-used method of designing housing projects usually only takes user requirements into consideration with regard to the dwelling unit and neglects the need for open spaces. In fact, spaces around dwellings have great importance, both in creating and/or enhancing social interaction among residents, and enriching daily life in individual units, especially in hot climates. In older areas, although there are no formal public spaces in the



Figure 5 The street in a new housing environment in Famagusta (D. Oktay Archive)

cityscape, which is generally informal in character due to the effect of Ottoman urbanism, and despite the lack of planned squares and an active use of squares (*meydan* in Turkish) by people, there was a social and psychological tendency towards meeting and gathering in open spaces (Eldem 1987; Cerasi 1999). Many small public squares once existed within the Ottoman quarters, at intersections of streets or in front of significant buildings, clearly showing their importance in the social life of the cities.

The Cypriot town was traditionally known for its fruit gardens. These gardens were an important component of the hierarchy of exterior spaces, extending from public square to semi-public street, semi-private courtyard and/or private garden. Within this hierarchy, settlements did not appear particularly green when walking along the streets, where greenery in more private spaces was less exposed to the street environment. In terms of sustainable landscaping at the neighbourhood scale, the use of locally appropriate plants/trees helps to create areas with different themes that are used as bordering elements, as in vernacular Turkish settlements. For instance, orange trees may have defined one district, whereas date palms, olive trees and eucalyptus trees may have defined others. The trees served both as shading elements and fruit sources (Oktay 1998). In some districts, aqueducts were used as dividing elements in addition to their water function and aesthetic contribution to the landscape (Figure 6).

As revealed by Oktay's (1997) study in Northern Cyprus, open spaces are a cornerstone in the daily life of people, and satisfaction with their dwellings greatly depends on the quality of their private and



Figure 6 Date palms and aqueducts as dividing elements in Lefka (Photo: Nevtar Zafer)



Figure 7 A new housing complex, lacking greenery (D. Oktay Archive)

semi-private open spaces. However, in new developments, these spaces lack the qualities that provide positive meaning and availability to residents. They are often built on flat sites with no trees, and stand as isolated concrete towers, missing the opportunity to create some unity through the use of landscaping. It is also unfortunate that there are no conscious efforts to green surrounding spaces (Figure 7). Residential exterior spaces lack responsiveness to the users' needs, their lifestyle and their

socio-cultural conditions. This is especially true in the case of multistorey housing developments, where neither the physical–aesthetic characteristics of the outdoor spaces nor their functions and uses have been considered. There is serious dissatisfaction with the provision and/or qualities of collective open spaces in all new housing areas in Cyprus (Oktay 1997).

Building patterns

At the building scale, we still see that contemporary housing (for example the detached houses in Figure 8) ignores timeless traditional building patterns which could have easily been used to create humane and sustainable environments, as detailed below.

Integrated open, semi-open and enclosed spaces

As mentioned earlier, oftentimes contemporary buildings are not well integrated with their outdoor open spaces, which are usually leftover spaces with no meaningful geometry. In traditional architecture, however, it was very important to integrate the building with the site. The building site had specific characteristics in terms of views, landscape, terrain, existing neighbouring conditions, pedestrian traffic and so on. All these conditions were respected and the design of the building helped sustain and enhance the existing structure of the site. Furthermore, it was important to integrate all spaces – enclosed, semi-open and open spaces – to create a well-integrated whole (Figure 9). This was achieved by the master builders when they were laying out spaces – starting by first preserving the trees, then laying out the mass of the building and its rooms, and lastly incorporating semi-open spaces such as covered verandas and porches (Papacharalambous gives a detailed account of the making of a traditional dwelling in his book, *The Cypriot Residence* 1968: 7–21). This conscious, step-by-step process ensured the inclusion and integration of all three types of space.

Building construction and materials

Traditional building construction systems and materials were not only sustainable but also energy efficient and user friendly, allowing the users to participate in the building process (Pontikis



Figure 8 Front façade of a contemporary house (K. Pontikis Archive)



Figure 9 Well-integrated spaces in a traditional Cypriot residence (Photo: Stefanos Sinos)

2000/2001). Stone and mud brick construction employed natural materials readily available from the locality. Houses could be built and taken down without polluting the environment. The small size of their construction units made them easy to handle and one could easily put them in place and also adjust and modify the space and details so that they felt comfortable. Also, the thickness of the wall, usually 40 to 50 cm, kept the building space warm during winter and cool during summer. Building openings were also small so as not to allow too much energy to escape or enter. Furthermore, thick walls allowed people to personalise their space by creating window seats, bookshelves, etc.

The contemporary construction system, which is primarily cast in place concrete and terracotta in-fill block walls, is not as flexible and user friendly as traditional systems. The insulation properties of modern materials used are not as high in comparison to traditional materials, therefore houses over-rely on mechanical means to heat and cool the space. Some houses with big expanses of glass might

allow for a better view but, at the same time, they allow hot or cold air to enter/escape from the building; there is, therefore, a tremendous waste of energy which could have been conserved if buildings were more energy efficient.

Hand-crafted building detailing

Handmade building details are absent from many contemporary buildings because they are either considered expensive extras or not appropriate to modern architecture. The same even quality appears in windows, columns, verandas, wall treatments, etc. This produces monotonous structures with no character and identity. The creation of some special handmade entities (Figure 10) was predominant in traditional dwellings (see POAK: Pancyprrian Architectural Heritage Organization, *Traditional Craftsmen of Cyprus*, Nicosia Municipality, 1982) and helped to provide identity and character to the building. Traditional master builders knew that too much intensity or evenness in a building was not desirable and focused on a few entities that were crucial to the life and character of the building. In the same building, one could find intense and beautiful artefacts, while in others they are simple and inexpensive. These special elements helped to create a memorable building with a local identity. Also, ornament was an integral part of the building form, it arose out of the construction process and represented motifs from Cypriot life and environment. A building with interesting detailing and ornamentation will have a character and identity irrespective of budget, because it uses an appropriate distribution of money on the building (Pontikis 2004).

Colour of the building

Today, most new buildings are painted white because it is the easiest. Traditionally, in most rural buildings, construction materials had their own natural colours. Mud bricks were covered with a layer of mud so as to protect them from the elements. Stone was left exposed, showing its natural colours. In urban settings, most buildings were painted white or light pastel colours. These light colours worked very well with the strong Mediterranean sun, as dark colours provided too much contrast and were avoided. Colour is also affected by site conditions – landscaping, neighbouring

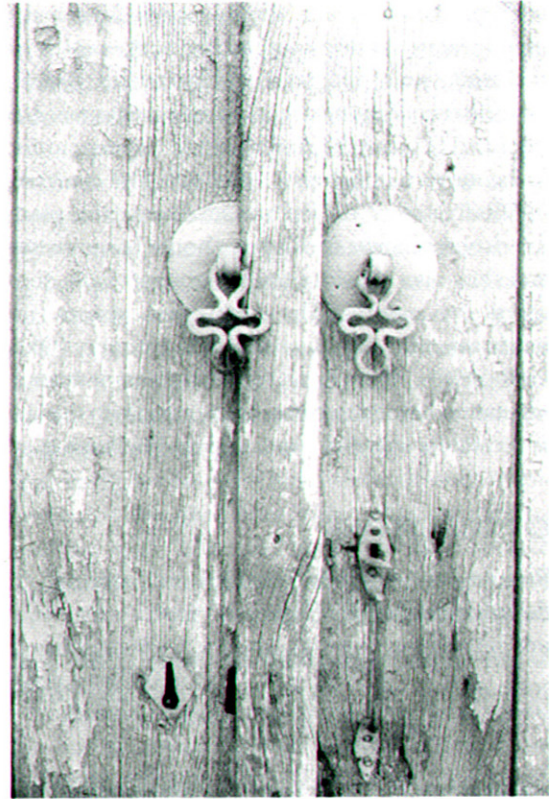


Figure 10 Traditional wooden door with handles (K. Pontikis Archive)

buildings, and materials used on the building, e.g. roof tiles. Therefore, finding the most appropriate and harmonious exterior and interior colours for a building was challenging and requires on-site experimentation and a step-by-step process where each colour unfolds sequentially while preserving and enhancing the life of the building (Pontikis 2000).

Well-defined gardens with local vegetation and landscaping

Most contemporary houses are placed on lots, without respect for the open space surrounding the building. The open space is now usually leftover space that cannot be used for a garden. Traditional master builders first walked the land and tried to preserve good open spaces and place their building in the less good area (Sinos 1976). Then, they built garden walls and trellises to better define the garden and make it more private so as to provide intimacy and quietness for the family. Garden seats, an outdoor oven and a water fountain were also

built to accommodate family needs. Lastly, they used local vegetation appropriate to the mostly hot and arid climate of Cyprus – bougainvillea, jasmine, lemon trees, almond trees, pomegranate trees, fig trees and other vegetation adorned Cypriot gardens and courtyards (Figures 11 and 12). The courtyard, with its fruit trees, flowers and small vegetable plot, is the closest relation the Cypriot house has to nature, and thus also provides the inhabitants with direct access to nature. The semi-open spaces (i.e. *sundurma*, sofa) also have access to greenery (Oktay 1999–2002). This local, colourful, and fragrant vegetation helped to connect the people to the land and create a sense of ownership and belonging.

CONCLUSIONS

Recommendations for future housing developments in Cyprus

As previously highlighted by Oktay (1998, 1999, 2001–2002) and Oktay and Pontikis (2005),

modern urban and architectural development practice in Cyprus cannot be considered sustainable. There is little knowledge and experience of implementing sustainable housing (Oktay 2004) and, due to serious institutional problems related to housing, there is a need to focus on some sustainability priorities. Traditional settlements on Cyprus, like vernacular patterns worldwide (Alexander 2004), are excellent examples to learn from as they represent a long-established culture, good uses of local values and resources, matched to local skills, to meet people's needs. Acknowledging the fact that housing not only satisfies the basic need for shelter, but also satisfies other needs



Figure 11 A private garden with local vegetation (Photo: Kostas Voniatis)



Figure 12 Typical Cypriot house entrance adorned with jasmine (Photo: Pinar Ulucay – D. Oktay Archive)

required for sustainability (European Commission 1990), certain physical and social values should be considered in the design of housing environments.

Identifiability through physical and social cohesion, as in the traditional *mahalle*—the quarter in an Ottoman city—should be re-interpreted for the newly developed housing environments, against the negative effects of urban sprawl. In this context, concerning the districts' need for more definition and distinctiveness, it may be wise if they are bounded by and provide a continuous system of greenbelt corridors determined by natural physical conditions. Circulation elements should be improved in a way that promotes efficiency, is environmentally sensitive and prioritises the needs of pedestrians, cyclists and public transport users. Nature must be part of the city culture, for practical use as well as for the recreation of inhabitants. An attempt to integrate features such as edible landscapes of fruit trees, and highly productive gardens into site design would be beneficial for inhabitants in terms of lower heating and cooling bills, lower food costs, and reduced risk of flooding and landslide damage. Public spaces should receive great attention, not only in central districts, but also at the urban edges and in newly developed settlements, where the space between them is becoming more important as housing densities increase. An ample supply of purpose-built open spaces in the form of squares, greens and parks, whose frequent use is encouraged through placement and design should be provided.

At the building scale, particular attention should be given to the design of enclosed, semi-open and open spaces, and how these spaces can best be integrated to produce a seamless whole. The thoughtful design of each space, along with their successful integration will provide the right degree of community and privacy to inhabitants. Traditional

construction technologies and materials afforded great flexibility and allowed master builders and users to be involved in the making of their buildings and created a responsive building environment. Contemporary technology and materials, though, are more cumbersome and inflexible, thus not allowing the creation of a personalised building environment. Standardised, manufactured building components and finishes, such as ready-made kitchens, floorings, door handles, etc., do not lead to the creation of a personal environment. Handcrafted detailing of local motifs and local building colours helped traditional buildings to acquire their local identity and to 'belong' to the land. Contemporary housing, however, with modern and minimalist designs, does away with handcrafted detailing and deals with large and bare surfaces of concrete and glass. This universal modern approach to design creates buildings that are not sensitive to the Cypriot building culture and thus lack a local identity.

Well-defined gardens with trellises, local vegetation and landscaping were traditional for accommodating outdoor living. The desire for outdoor living is still applicable today, therefore these patterns are still essential for creating pleasant courtyards and gardens. Accordingly, when a more flexible design process is possible, traditional patterns such as the concept of the courtyard can be reinterpreted and modified, not only in row housing but also in multistorey housing developments and housing blocks, where it can be arranged around a semi-private open space.

Finally, there is the need for broader master planning in both physical and policy terms, and for urban design solutions that are sensitive to their local contexts and sympathetic to people's needs, in order to create sustainable housing environments at a larger scale.

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