Chapter 5

Housing Design, User Needs, Adaptation

Sustainable houses between past and present

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Keywords: sustainable architecture, traditional house, Gulf region society, contemporary architecture

Traditional houses, in the Arab world, represent a living witness for the correspondence of its architecture to the ambient severe environment, which incorporates the essence of sustainable architecture.

Contemporary houses, especially in the Gulf region, were influenced by rapid and drastic economic, social and cultural changes that took place during the second half of the 20th century. The discovery of oil with commercial quantities caused an instant growth of national income. Large size projects and developments were launched in an effort to upgrade the standard of living of the citizens.

Dependency on cars and other means of transportation caused the cities to expand rapidly. This uncontrolled expansion transformed major cities into metropolitan areas and changed the traditional lifestyle into a modern one. Houses were built and handed to citizens after completion of construction. The design of these houses was not accommodated to natural environment and was not suitable for the cultural values and needs of the inhabitants. This was a result of importing planning and design values and modern building materials, neglecting the ambient environment and depending on the artificial and mechanical equipments consuming a great deal of energy.

This paper will focus on traditional houses in U.A.E that represents the Gulf region architecture in its typology and criteria. The potential of sustainability in the traditional houses in this region emerged through modifying and getting adapted to environmental factors, in order to create a comfortable
internal microclimate, through sensitive and conscious solutions in planning and design.

Research will depend on theoretical literature and site survey for samples of traditional and contemporary houses in U.A.E. Research methodology will be based on comparative analysis to these samples, which will be the case study, representing the architecture of coast areas of U.A.E.

Through analysis, the research will concentrate on getting out the potential of the sustainability that the traditional house corresponded to, whether this happened spontaneously or deliberately compared with modern architecture that neglected natural resources and ambient environment which led to the absence of sustainability in contemporary architecture.

Then, research will derive some guidelines depending on the design principles of traditional house that reveal the potential of sustainability of the traditional architecture, and how we can accommodate that in contemporary houses.

Today’s private-home design and current metropolitan living habits in Brazil

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Keywords: apartment, living habits, Sao Paulo

Based on the hypothesis that there should be a close relation between today’s private-home design and the current habits of people living in those homes, this work sets out to investigate the design of the living space of apartments in Sao Paulo, Brazil. The objective is to analyze how well this design has kept up with changing lifestyles during the last decades of the 20th century, especially shifting family arrangements and the permeation of new technologies in the home.

This work intends to contribute to a new assessment of contemporary metropolitan living and is divided into four parts.

The first presents an overview of the modernization process of Brazilian industry, from the inception of apartment life in Sao Paulo to its widespread acceptance. This part also draws a parallel between this process and the user-home relationship, in light of the introduction of the first technological gadgets in everyday home living.

The second part shows today’s changing ways of living, brought by both emerging demographic patterns, which have dramatically changed the conventional nuclear family, and the flood of new technologies in the domestic environment.
The third part summarizes the findings of an analysis of floor plans of two-bedroom apartments launched in Sao Paulo during the 1980s and 1990s. It also includes a case study of two-bedroom apartments of a Sao Paulo building, with an examination of their living spaces and the use attributed thereto.

The fourth part brings some reflections on current ideas on the reconfiguring domestic landscape and arrives at two basic conclusions. On the one hand, in light of shifting family patterns and the permeation of technological appliances in the domestic space, it can be said that there is a clear gap between apartments produced in the late 20th century and the new lifestyles incorporated by the users of such homes. Few new proposals have addressed the multiple facets of today's metropolitan apartment dwellers. On the other hand, the use given to these apartments can be considered only relatively contemporary, since ingrained traditions are still quite present in the living space and have not been fully replaced by contemporary lifestyles.

User-controlled updating of existing housing: A prime way to satisfactory affordable housing

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Keywords: Israel, affordable housing, rehabilitation

There is no shortage of housing units in most of the developed countries, yet there is a shortage of satisfactory affordable housing. This essay deals with the issue of housing affordability among modest- to middle-income households, who cannot own (or rent) the home they want for a price they can afford. The argument is that salvation cannot come from construction of new housing, which is almost always very expensive. A possible solution is facilitation of user-controlled process of updating the old housing units occupied by such households.

Updating means dwelling enlargement (additional bedrooms and additional spaces for new needs), and/or change of layout, treatment of the facade and yard, or the building facilities. A process of this kind has been under way in many cities and countries, with little public attention or documentation. In Israel, the author's country, it has been in operation for over a quarter of a century and it has attracted public and academic attention.

It started as a spontaneous process, was adopted by public agencies that supported it in low-income neighbourhoods, and then spread spontaneously to moderate-to-middle income areas. It always requires households with strong
motivation for housing improvement, usually moderate-income owner-occupiers, and involves cooperation among neighbours (in multi-family buildings). It frequently requires also strong administrative support by the local authority, but only minimal public financial support. Private developers may join the process and enhance it significantly, mainly by receiving construction rights on the roof and using some of their profits for improving the lower dwellings, with no payment by their residents.

Several tens of thousands of dwellings have been updated in Israel since the early 1980s. Studies show improved affordable housing conditions and high satisfaction with one's dwelling unit (in correlation with user-controlled improvements). An important byproduct was the prevention (or halting) of neighbourhood deterioration in old urban areas; households who had resources invested in their old neighbourhood and remained living in it, instead of leaving it as soon as they could afford to do so.

Lessons have been learned, and the Phoenix Strategy for user-controlled updating of existing residential buildings and dwellings has been developed. It applies to people who have modest savings or can afford modest loans, to those whose residence is in low-rise and middle-rise (up to about 10 storeys) residential buildings. It enables significant improvement of a family’s housing conditions, in accordance with its wishes and financial capabilities. It is suitable for application, with necessary local adaptations, by local authorities and/or private entrepreneurs, who wish to promote desirable affordable housing and prevent neighbourhood deterioration.

Take-off point in appropriate technology for the homeless: Slum upgrading for rural poor in Ibalavin, Asuh and Mbessa communities of Cameroon

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Keywords: community participation, market mechanism, rural development

Poverty characterizes most grassroots village communities where over 85% of Cameroonians live. Also contributing to low quality housing are lack of skilled manpower, high cost of building material, wastage, inefficient site selection, poor organization, traditional land laws, lack of quality controls and limited knowledge of adequate technologies.

Habitat provides growth opportunities. The objective of low cost appropriate technologies in our “take-off point” is to enable low-income sectors to
acquire adequate homes. At the same time, identifying and creating sustainable, economically viable building materials and appropriate technologies can create many jobs in rural areas. A decentralized enabling infrastructure is required.

Cost-effective technology implies taking advantage of local resources. Bamboo and sun-dried earth blocks ensure good thermal comfort in the hot tropics, are a highly renewable resource, and bamboo plantations are eco-friendly and “eco-healers”.

Those who cannot afford a simple house and live in huts have very large families because they lack any means of birth control. Parents lack privacy from their children. Adolescents in turn often give birth outside to children out of marriage. Many consider this situation to be the will of God, with no hope for a better future.

Bamboo or sun-dried earth blocks and about 100 sheets of zinc can provide a pleasant house with three bedrooms, a sitting room, an external kitchen and separate pit-toilet, for between 600 and 650 US dollars.

The scale and success of this programme points to the next stage of slum upgrading, and the role that civil society and local institutions can play in the solution to homelessness. This will make it possible to achieve the goal of adequate and affordable housing for all by 2007, the Year of Shelter.

This approach uses the strategy of self-reliant initiatives to promote indigenous knowledge on housing. The construction of houses is carried out under village management, and the benefiting families are fully involved. GLOCE-HADIM Cameroon is dealing with communities directly, designing and supervising the construction work and maintenance. After completion of a house, the village committee selects a deserving family to live in it.

Defining construction types as a response to passive fire protection systems in housing design

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Keywords: construction types, passive fire protection system, housing design

In designing against fire in buildings, our first aim is to reduce the risk of human injury or death to as low as a level as possible. Simultaneously, we wish to minimize fire damage to the building and its contents and to prevent the fire from spreading to neighboring buildings. I would like, of course, to eliminate
all risk of fire, but contrary to popular myth, there can never be such a thing as a “fire proof” building.

Steel obviously does not burn, but it does lose most of its structural strength and sag or collapse at a temperature that is well below its own melting point and the sustained temperatures frequently reached by ordinary building fires. Concrete is more resistant to fire than steel is, but its fundamental crystalline structure progressively disintegrates when exposed to fire, and if the fire lasts long enough, serious structure damage will result. Brick and tile, which are products of intense heat in the kiln, are not themselves weakened by fire, but their mortar joints are subject to disintegration, thereby weakening the entire masonry construction.

Therefore our buildings cannot be made perfectly resistant to fire, but nevertheless we have developed a rather effective and rapidly improving arsenal of weapons to protect life and property against building fire. Defining construction types in housing design and construction in terms of minimizing the building from fire damage is an important consideration.

Glocal understanding in the search for new design principles for contemporary living environments: Can common heritage be a design tool for reunification of divided Cyprus?

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Keywords: glocal understanding, design principles, Cypriot identity, change

One of the important issues of today’s architectural discourse is the fulfilment of contemporary needs through the contribution of local identity. Exclusion of local values in the development of the built environment leads to an unsatisfactory living milieu. Furthermore, the lack of environmental and socio-cultural aspects in house design is a vital issue behind the questioning of existing living context.

In this respect, the importance of the glocal understanding, particularly for the case of Cyprus Island, comes forward as a result of the severe threats on its unique traditional architecture. In general, the formation of the traditional settlements is defined according to the identification of the relationships between the static patterns of the settlement and the dynamic spatial process of human behaviour. Like examples in the rest of the world, the spread of modern materials and construction techniques that facilitate the building activity of Cyprus in particular, emerged an unfamiliar response to the static features of the context.
The ignorance of the tried, developed, and evolved design principles in the for-
formation of archetypes resulted in conscious or unconscious dissatisfaction of the
current users of the “modern” houses.

Against the constancy of the static pattern, the changeability of the dynamic
processes also has to be pointed out in terms of their social, cultural, and eco-
nomic developments. In addition to the socio-cultural changes that are being
experimented with throughout the world, the Island suffers serious demographi-
cal changes as a result of the conflict between the two major communities for
over 50 years. From this point of view, the designers’ contribution and role in cre-
ating a “peaceful environment” and reflecting the “common Cypriot identity”
that has been shared by communities for over centuries have to be identified.

From this point of view, the responsibility of designers is to find ways to ana-
lyze and interpret the tried, developed, and evolved design principles of tradi-
tional architecture. Without a doubt, past experiences suitably respond to the
environmental needs of the context. In this respect, instead of merely copying
the traditional architectural elements without questioning the concept behind
them, the new designs have to surpass the existing ones in the light of a new
understanding. By this new understanding, it is also expected to bear the con-
temporary socio-cultural needs of the current users.

This study aims to identify new design principles based on the realities of the
natural and cultural context. The new proposals for better living environments
are expected to respond to physical demands in terms of tremendous needs for
housing stock and social demands in terms of breaking down psychological
walls, by the reunification of the separated communities of Cyprus in the close
future.

Rediscovering vernacular settlements
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Keywords: building layout, space arrangement, proximity, South Korea

Korean traditional dwellings are not merely settlements in specific places, they
are the manifestation of the lives of people and a reflection of their identity.
They respond to ways of life, ideologies, and values in physical forms and
developments.

The location of settlements devoted to rituals or social communion has been
a persistent feature of cultural decorum in making dwellings. These principles
have been rooted in the traditional settlements and the social structure of the
society. As form is not bound to a particular factor, those interested in the
wider context of form come from a variety of elements. The attempt to inte-
grate social and physical dimensions of space, and to contextualize the physical space into human practices help us to understand our environment rigorously.

The physical space that we perceive is embedded in our daily practices, and thus it is through the process of its making that we can understand this environment. Thus efforts should be made to describe the spatial configuration of urban form, its social implications and cultural connotations. This study argues that to understand and read the settlements, we must first identify their physical form; and that we cannot understand their spatial form until we understand the underlying laws of thought, the "deep structure" that provides the ordering of meaning and therefore of society itself. This study aims to investigate the nature and cause of form in the abstract sense and to study the transmission of the idea built into the form according to the principles of settlements in Korea.

Through a case study approach this paper identifies differentiations and similarities between individual dwellings within Namsa Village, Korea. The differentiation and articulation of parts seem to be as critical in giving settlements their particular identity. According to historical documents, people have lived in Namsa since the end of 1300s. Inhabitants essentially settled in this village from the end of the 15th century, and made a traditional village.

Finally, this paper indicates that methods of composition and assemblage are incorporated in the work of architecture, and thus the idea of a meta-framework of settlements has important consequences for the making of a village in terms of its implications for order, relationship and valuable social attitudes, and for the communication with the dwellers, both in space and time.

Low-cost housing: The effects of design and building materials on user preferences

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Keywords: housing design, user preferences, Kenya

There has been an extensive body of research on developing low-cost building materials as a response to the shelter crisis in developing countries, but little light has been shed on the acceptability of these materials to the end-users. Similarly, there has been research on the development of different design solutions for low-cost housing prototypes, but little by way of empirical evidence for the potential success of these designs.

This research provides direct empirical evidence on the relationship between the nature of building materials, type of housing design, and the expressed preferences of a sample of potential end-users. A study was conducted on a sample of residents in a large slum of Nairobi to gauge their perceptions and attitudes towards building materials and housing design. The respondents rated 13 differ-
ent soil-cement materials in which the main variables were the soil clay content and cement content. Following that, 30 different housing prototypes were also rated with the main variables being the design of the house (neo-traditional versus contemporary), the nature of materials used, the typology of the housing prototype (single- versus multi-family), and the method of construction used (brick/block versus poured-in-place). In the materials rating exercise, there was no observable relationship in the expressed preferences of the respondents. In the housing rating exercise, a relationship was observed between the general design and expressed preferences of the respondents, with a positive relationship being observed for the contemporary designs. A relationship was observed between the respondents’ expressed preferences and the typology of the housing prototype, with a positive relationship being observed for the multi-family type. There was also an observable relationship between the respondents’ preferences and method of construction, with a positive relationship being observed for the brick/block method. There was no observable relationship between respondents’ preferences and the nature of materials used. All of the observed relationships in the housing rating exercise were statistically significant.

This paper will discuss these findings and draw conclusions based on the data and on the original hypotheses. The findings will be supplemented by and compared to qualitative data obtained through group interviews of a large subset within the sample of respondents, and precedent studies on housing design and building materials in low-cost housing design.

Housing adaptations in ethnic enclaves: A study of South Asian homes in the Greater Toronto Area

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Keywords: Toronto, South Asian housing, ethnic enclave, housing design

Immigrants have transformed the Canadian urban landscape over the last several years, expressing their identities, needs, and preferences in the interior designs and external decorations of their homes. Their impact is also felt with the proliferation of Asian malls, mega homes, ethnic markets, and enclaves. These changes have raised questions about Canadian housing policies, planning issues, real estate development, and design practice: How do we create housing policies and building standards for an ethnically diverse society? How do we satisfy citizens’ different wants and needs? What do we do to accommodate the design requirements of divergent groups equally?

Canadian researchers are just beginning to realize the importance of ethnic adaptation of the built environment. Some researchers have studied how immigrant groups have changed external elements of homes. Buzzelli’s (1997) study
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documents how Italian minorities in the Little Italy area of Toronto changed
the original Georgian idiom of the streetscape. Murdie et. al. (2000) document
the highly ornate facades of Italian and Portuguese houses and elaborately
landscaped front yards in Toronto. Fainella (1985) finds that Italians prefer
duplicate facilities such as kitchens and living rooms in their homes. But little
empirical evidence exists about the ways different ethnic groups organize, use
and adapt their domestic space.

Qadeer and Kumar (2003) have recently identified major ethnic enclaves
(neighbourhoods dominated by one ethnic group) formed by five ethnic groups
( Italians, Chinese, Portuguese, Jews and East Indians) in the Greater Toronto
Area (GTA). These enclaves are mostly sprawled in suburban areas. Barring a
few pockets, the majority consist of single-family detached housing stock.

This research focuses on South Asian enclaves and examines how people in
these enclaves modify the interiors and exteriors of their homes to better fit
their preferences. It relies on visual observation of a sample of homes along
with open-ended interviews with dwellers and realtors. The initial findings tell
us that there is a dire need for storage spaces, especially in kitchens, bathrooms
and basements. A dedicated space for religious prayers is also found lacking in
these homes.

Design criteria for adequate and affordable housing
towards current social, demographic and economic trends

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Keywords: housing design, open architecture, sustainable housing, household and life-
tyle trends, aging-in-place

For more than three decades, the evolving social, demographic and economic
situation in developed nations has posed important challenges to housing
designers, planners and investors, including those involved in the field of public
intervention in social housing. To respond to these challenges, efforts to pro-
mote new approaches in housing design, in spite of their undeniable merits on a
theoretical level (Universal Design, Open Building Architecture and others),
did not deliver anticipated results. Thus today, almost all housing units offered
on the market are conceived according to the reality of traditional households,
which are still supposed to be universal, permanent and homogeneous.

It is imperative to explain the reasons for this persistence of traditional para-
digms in the mind of the general public and most of those involved in housing.
The key ones appear to be:

- prevalence of short-term concerns in the general public and among the major stakeholders;
- conservatism of the industry, cultural resistances and stylistic preferences of customers;
- reciprocal ignorance of the legitimate concerns of researchers, decision-makers and investors;
- normative, legal and technical obstacles generated by multiple levels and scattered decisional authorities;
- additional initial cost and financial risks of innovative projects.

The challenges we must face from now on to ensure the adequacy and affordability of housing can be expressed in the form of design criteria. Some appear particularly crucial:

- Individual: a habitat which can be adjusted to the particular needs of each occupant, in order to minimize the irritants of a shared occupation and accommodate individual aspirations to intimacy, independent lifestyle and social life;
- Family: a habitat able to offer flexibility in order to accommodate the daily and weekly cycles of occupation as well as the specific needs resulting from the great diversity and continuing evolution of households;
- Demography: a habitat which can be adapted to the long-term evolution of household life and accommodate the specific needs and aspirations of elders, convalescents, physical and mentally handicapped occupants;
- Economy: a habitat which can be adjusted for working at home or even to be shared with strangers and, in this way, allowing the possibility of additional income or reducing expenses for household services in the event of unforeseen financial difficulties resulting from job loss, divorce, retirement, illness, accident or death;
- Society: a habitat able to accommodate requirements consequent on increasing sedentariness and leisure activities in post-industrial societies, as well as new possibilities allowed by information technologies (work, studies, purchases and recreation online, home automation, etc.).

Thus, the above mentioned criteria of design belong to the same strategy: adaptability of the habitat, in a sustainable development perspective, in order to meet in all circumstances the specific needs of each occupant of the dwelling.
A low-cost housing system

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Keywords: housing design, low-cost housing, livable conditions, poverty

This paper introduces a housing design for the poor intended to provide low-cost and livable conditions. Usually these two points are not related and only the first one is attained in other houses in Brazil. By livable conditions is meant good natural ventilation/illumination, and rational space in a small area. This requires an accurate study for a chosen family of a couple and two children.

The main results involve (i) industrialized prefabricated components together with community work, (ii) special developed devices for natural ventilation/illumination control and separate space areas. It also led to a system where options are possible.

It can start with a one floor use up to a second floor, two positions for the bathroom, two bedrooms or one with a double height in the living room. The house is 8.10 meters by 3.60 meters with a total area of 58.32 square meters, equally divided. The decision for two floors is due to the advantages of having double the land use, besides security and status, compared to a one-floor house.

In the first floor, there is the living room, dining room, kitchen, bathroom and a small service area. In the second floor two bedrooms are possible.

The main construction materials are concrete slab and concrete blocks, a prefabricated one-piece steel structure, wood boards and laminated wood. The roof is provided by a ready-made steel structure and aluminum tile.

There are three basic construction stages. The concrete slab is made by community work, the placement of the steel structure and roof is lifted by a small crane and the walls and floor are fixed by community work.

The estimated cost is seven thousand Canadian dollars per unit. The design has the following parts: introduction, full detailed drawings, general cost itemized and partial real scale prototype photos. The author acknowledges the collaboration of other professors and undergraduate students.
Eco-citizens as key informers: Insights for sustainable lifestyles and communities

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Keywords: eco-citizens, user-centred approach, sustainable lifestyles and communities, built environment

In many western countries, members of the public and various interest groups exhibit growing dissatisfaction with prevailing instrumental and materialist attitudes toward the natural and artificial world. Among others, the commodity-driven society is targeted as a source of oppression that saps the quality of human relations, natural milieus and the built environment, including industrial products. While such a critique is not new in itself, it is becoming increasingly widespread.

In fact, while insisting on the need for individuals to become responsible citizens or eco-citizens, many people voluntarily adopt attitudes and lifestyles that may be seen as actively and positively contributing to a much larger project, that of sustainable development. In spite of limits that are all too real, the emerging phenomenon of the eco-citizen is nonetheless an advance in the move toward sustainable development.

Looking at the complexity surrounding the issue of sustainability, understanding the implications of some of its related concepts such as sustainable lifestyles and sustainable communities is no easy task. The paper will propose directions for a situated comprehension of these notions. It will argue that a user-centred approach focused on a further understanding of recent and alternative forms of civil society settings and values (such as the Simple Living movement and the Eco-Villages communities' development which promote sustainable lifestyles and communities) may provide fertile insights for exploring the nature, limits and potential of these concepts.

In conclusion, along with providing an empirical research framework for such an enterprise, the paper will also discuss the question of eco-citizens as key-informers in the elaboration of design criteria applied to the built environment.
A proposed choice model for the delivery of mass custom homes

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Keywords: choice model, mass custom homes, lower cost and higher performance housing, new housing technology

Market demand for housing changes over time in response to the wants and needs of both individuals and society. Changes in socio-demographics highlight the emergence of non-traditional households in Canada and influence the configuration of a house (or product) which meets buyers’ individual requirements. In turn, this affects the design approach (or process). At the same time, society today requires sustainability in housing development, since building a house consumes large amounts of energy during construction and after occupancy.

Technology that improves the cost and performance of housing has advanced over time. Although some innovative design and construction systems (or approaches) that attempt to meet societal and individual demands for housing are available in today’s market, homebuilders tend not to apply unfamiliar approaches to their housing developments, since their business operation is often based on convention. Another reason, which inhibits a builder’s adoption of new housing technology, is the extra cost required for seeking and analyzing information. Thus, the homebuilders’ decision-making processes for the adoption of “familiar” and “unfamiliar” design and construction systems (or housing systems) which affect the configuration of housing need to be well programmed.

Accordingly, this study introduces the new concept of mass customization that encourages homebuilders to standardize parts of a house, while customizing the home – i.e. the creation of mass custom homes. Then, in consideration of this new concept, as well as a value analysis approach that helps facilitate homebuilders’ buying decisions, it proposes a choice model for the design and construction approaches to the delivery of “lower-cost and higher-performance” housing. Thirdly, to assess its practicality, the proposed decision-making model is demonstrated in collaboration with a selected homebuilder in Quebec.

In view of the demonstration project conducted in this study, the author concluded that the proposed “choice model” could function effectively as a practical decision-making support tool (or system) that helps open the door for homebuilders to generate and select alternatives that aid them to produce
lower-cost and higher-performance housing. As a consequence of program-
ming the homebuilders’ buying decision-making process, the goal identifica-
tion uncertainty and goal/purchase matching uncertainty, which often hinder
their adoption of unfamiliar, innovative housing systems, could be reduced, or
eliminated.

Eating and sociability: Research in kitchen design for small-
scale housing

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Keywords: kitchen design, small-scale housing, housing design

Considerable evidence suggests the desirability of providing small-scale hous-
ing in North America, including decreasing household size; busy lifestyles
sending families in divergent directions; increasingly scarce resources for con-
structing, maintaining, and managing homes; and an aging population. H owe-
ever, success is not achieved just by making rooms smaller; a rethinking of how
residential spaces are conceived is needed.

Findings from two national studies at Virginia Tech’s Center for Real Life
Kitchen Design apply to the design of small-scale housing. Both studies sup-
ported a re-examination of design guidelines in the kitchen industry. The 2001
study employed a national telephone survey (n=630) and a personal interview/
laboratory cooking activity (n=78), focusing on kitchen preferences and activi-
ties. The 2003 study involved a complete kitchen inventory/personal interview
of a national sample (n=87).

Key findings from the two studies are:

- The kitchen is both a food preparation and social space. Participants (72%)
  cooked regular meals, with one person doing most of the cooking (67% of
  households). However, other people were often in the kitchen doing non-
food activities. Guests were often involved in food preparation.
- Large numbers of items are stored in the kitchen. Households with small
  kitchens (under 150 square feet) have fewer multiples and smaller size
  items, but the average number of items was still 655. Further, these house-
  holds keep more items on countertops, limiting workspace.
- Small kitchen households average 15 small appliances.
- Most households (96%) own a microwave oven. Many (59%) use the
  microwave as much or more than a range.
- Single households use their kitchens less frequently for food and non-food
activities. Singles do fewer food preparation activities, and use more convenience and carryout foods, compared to other household sizes and types.

Thus, recommendations for small-scale housing are:

- Evaluate the definition of kitchen, matched to household composition and lifestyle. Some households need "complete" kitchens; some do not.
- Integrate the kitchen with living areas and consider multiple uses for food preparation and eating areas, providing flexible lifestyle choices in limited space.
- Small-scale housing, perhaps more than larger housing, needs generous, well-planned kitchen storage, including pantries, drawers, and interior cabinet storage devices.
- Microwave ovens are needed, even in small kitchens, and may replace other cooking appliances.

Recognizing how a kitchen is actually used, for food preparation and beyond, offers flexibility in designing small-scale housing adapted to different lifestyles.

1. A complete list of presentations and publications from these research projects, to date, containing supporting statistical data, is available by contacting the authors.
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Innovations in housing: Defining process and opportunities in social mass housing developments of Cyprus

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The contemporary debate and practice in architecture focuses on the role of the occupant in design and quality of housing. Since the user might change, and the same user might change their lifestyle and preferences over time, design of housing requires a variety of internal arrangements using different design devices. Particularly, in mass housing developments, which create a tension between general and individual requirements, the nature of the individual occupant is not traced. The characteristics of the user, who can change and adapt the housing unit as he wishes, is ignored. To study this more closely, social mass housing developments in Cyprus are considered.

Social mass housing is not a novel issue for the people of Cyprus because of particular population transfers. As in other developing countries, British Colo-
nial administration implemented housing projects firstly for low-income families and workers who migrated from rural settlements to urban centres after the First World War. Then, a refugee housing project was developed to upgrade the living conditions of people who were forced to leave their homes and migrate in the period of Cyprus dispute. Remarkably, housing shortages increased with replacement of Turkish and Greek Cypriots respectively in the northern and southern parts of the island following the year of division. Today, thousands of social housing units have been built by the government and housing cooperatives in the major urban settlements of Northern Cyprus.

In spite of material scarcity of low-income worker and refugee families of the dispute days, today, housing units are inhabited by families who afford and manage to pay the cost as down-payment. Changes in the houses done by the occupants without getting any governmental support are the reliable indicators of the material well-being and affordability of families. In fact, they are also indicators of spatial, functional and environmental problems determined in the life-cycle of houses after the design process. They should be determined and evaluated for lessons for future developments.

This study aims to define common aspects of changes and modifications done by the Turkish Cypriot occupants, and interprets the reasons behind those innovations by referring to the Cypriot living traditions. It is hoped that this study will point out certain issues to be revisited and implemented in new mass housing projects which would heterogeneously or homogenously accommodate the Turkish and Greek Cypriots replaced again with a probable political solution, re-unification of Cyprus. At least, it will show the primary attitudes of Turkish Cypriot occupants ready to be re-synthesized and the counterpart attitudes of the Greek Cypriots towards such developments.

Social networks and Finnish wooden towns: Grounds for good neighbourhoods

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Keywords: social networks, environmental quality, town planning

Enjoyment and social networks are immaterial and invisible, but an influence can be exerted on them through the planning of physical structures. When old areas are protected, the essential thing is not only to preserve individual buildings, but also to cherish the social entity of the area.

On the other hand, it is possible in the planning of new areas to exploit the experiences gained from the old areas. It is essential then to put an emphasis on
the social functionality of the area, i.e., the meaning of outside enjoyment. It is thus not enough just to design apartments for inside enjoyment (standard of equipment and location).

In this project a research method based on structured inhabitant inquiry is developed to be used as a tool to evaluate the environmental values of neighbourhoods both in Finnish historical wooden towns and town environments based on the Finnish wooden town tradition. The project sheds light on the importance and meaning of the scale, materials and density of experiencing an area as a good neighbourhood. The study also helps to analyze how the feeling of a pleasant environment is based on the consciousness of the historical environment and how large a part the purely physical structures and the human scale play. Research also helps in pointing to possible developing factors based on the identity of a certain town area.

The preliminary work was started during the summer of 2002 by launching the inquiry in eight dwelling areas from different periods. In the next phase, two historical town quarters were taken for closer examination under the EU Interreg III B project Sustainable historic Towns – Urban Heritage as an Asset of Development (SuH iTo). During the summer of 2003 the structured inquiry was launched in the Kalliomäki area of the Finnish SuH iTo project pilot town Forssa — a former working-class quarter constructed at the turn of the 19th and 20th centuries. Results from the earlier studies are used as comparative material.

Affordable housing case study: A study of the redevelopment of 30 St. Lawrence Street

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Keywords: homelessness, transitional housing, permanent housing

Following the cancellation of public funding for social housing with the change in provincial government in Ontario in 1985, the project previously planned for this site became no longer economically feasible.

However, as the need to provide affordable accommodation for homeless people did not end, we initiated, with Dixon Hall, an exploration into alternative means of achieving this goal. We organized meetings with developers, financiers, and three levels of government to explore ways in which affordable housing for homeless people could be developed on this property. The private sector was not interested in participating, as the project was not profitable.
After presenting a number of proposals to the city, the city agreed to commit the site to Dixon Neighbourhood Homes.

A number of housing alternatives were explored and it was agreed that congregate living best suited the proposed resident population. The project was developed with the goal that the rent collected would cover the cost of mortgage obligations, heat, taxes and maintenance. Dixon Hall provides support staff for the residents from their ongoing programs.

The St. Lawrence housing model has no undefined common areas – no public corridors, no stairwells, elevators, lobbies etc. In addition to reducing the cost of constructing, heating, lighting, maintaining and securing such areas, there is the added social benefit in eliminating areas that do not, by their nature, fall under the control of the residents themselves. Our model provides a clear definition of “ownership” and responsibility. As a house rather than an apartment, it is also a more familiar form of housing. In our discussions with a number of stakeholders, there has been clear opposition to apartment or institutional forms of housing.

The project provides flexible living arrangements accommodating the changing demographics and needs of the community. For example, as well as providing accommodation for singles, the unit could be shared by two couples each having a bedroom, private bathroom and sitting room at either the lower level or upper level with common kitchen and dining space; the unit works well as a 4 bedroom family home; or it could accommodate an extended family.

After the successful completion of this project, the abandoned warehouse building that was part of this site was renovated to provide 12 SRO units and 2 units, each housing four physically handicapped persons.

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Modern residential housing in United Arab Emirates

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Affordable housing is becoming one of the most important issues for city officials in UAE. With the aim of improving the housing conditions of UAE citizens, the government established low-cost housing programs in early 1970s. Housing policies in UAE had a main objective to settle its native nationals and to achieve better housing for youth and low-income inhabitants.

Serial types of housing concepts were tested in order to meet the social and cultural requirements of the citizens. Also, the government, through the Federal Ministry of Public Works and Housing (PW&H), embarked on building finished housing units, which it allocated to citizens at no cost.
The enormous wealth and small population of the country, which did not exceed 200,000, combined with a desire for rapid development, resulted in the building of huge numbers of low-cost houses and the offering of them to citizens at no cost.

This paper will analyze the background of housing policies and discuss the challenges faced by governments in order to review the new strategies initiated by the government to enhance future development.

The study discusses general housing project disciplines, design bases in the United Arab Emirates. Factors such as climate, economics, social conditions and other determinants will be outlined. The research will use an analytical approach for the inputs, outputs, disadvantages, and problems of the designed housing units. Finally, the paper suggests some steps to be followed in applying current housing policies in UAE to achieve better results and avoid having such problems in the future.

The power of informality or rethinking modernism

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In many developing countries, a significant part of the population lives in informal settlements. Unsustainable life and health-threatening environments and pollution are characteristics of these settlements and probably the reason for their negative image. Academics educated in modern urban planning and housing design frequently remark the absence of rational planning and organization as the primary reason for these poor housing conditions.

This argumentation seems to have a long tradition and is based on the heroic days of modernist urbanism or even before. Le Corbusier understood the contemporary city as a smoothly operating machine. In L’Urbanisme in (1925), he underlined the superiority of rational planning and order above the laissez-faire urban development and chaos. From his point of view, regulation, efficiency, and structure were the tools to control urban space, solve housing problems, and build the contemporary metropolis.

Many urban planners and architects working in developing countries use concepts of modernist urban planning and housing design. But how successful are modernist urban planning and architecture? Even in the Netherlands, a country with a sophisticated urban planning and housing design tradition, doubts have emerged about a rational and formalized planning that seems unable to meet the swiftly changing needs and expectations of inhabitants of urban conglomerations in the age of globalization.
The aim of my paper is to discuss these issues by exploring two cases. The first case is in the Netherlands. In 1960 the Urban Planning Department of Amsterdam developed “De Bijlmer” as a suburban area for about 60,000 inhabitants. The master plan is based on the “The Athens Charter” of the CIAM movement, consisting of the segregation of functions, mass housing in geometrically arranged dwelling blocks, and rational planning that rejects any unplanned informal activities that could threaten the modern urban utopia. Thirty years later, De Bijlmer stands as a symbol of the failure of modernist urban planning and social engineering. A large-scale renewal project has been set up by the Urban Planning Department and housing companies to transform the CIAM-city into a livable area, based on Ebenezer Howard’s Garden City concept and Hendrik Petrus Berlage’s ideas of the morphology of the traditional city.

The second case is in Turkey. The city of Adapazari, 120 kilometres east of Istanbul, was severely damaged by the 1999 earthquake. Because the city is close to the North Anatolian Fault, the municipality decided to build “New Adapazari,” 13 kilometres northeast of the existing city, for at least 500,000 inhabitants. In contrast to the irregular and informal urbanity of the old city, seen as the major cause for the high number of earthquake casualties, “New Adapazari” is developed according to rational planning methods based on CIAM principles.

In my view, a remarkable condition is emerging. While in the Netherlands planners and architects are getting more interested in the processes of informal urbanism marked by flexibility, diversity, and self-organization, many urban planners and architects in the developing world are basing their work on these outdated urban models and denying the power of vernacular urbanity. I wish to discuss this phenomenon in detail, referring to research and interviews on both locations.