

A Critical View to the Concept of Sustainable Architecture in Turkey

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1. INTRODUCTION

Turkey has very limited number of examples, which are characterized as sustainable building. In spite of the fact that is hard to develop a critical approach within this limited scope, the current examples have potentials enabling to observe the panorama of sustainability and sustainable architecture in Turkey. Initially, they indicate unique architectural solutions belonging exclusively to the country towards the primary strategy on reaching a sustainable built environment; that is “think global, act local”.

Sustainable Building efforts can be evaluated within the context of sustainable development process of the world. The concept of sustainable development was first related with economically based approaches proposing the revision and regulation of current development process of nations without stemming the growth. Dealing with its conceptual change after the declaration of Brundtland Report in 1988, the scope of sustainability was enlarged as not only being related with ‘economical prosperity’ but also the ‘social development’. Therefore, the guideline of sustainability deals with systems and problems intensified by the situation from societies living beyond its means.

Sustainable principles propose to re-regulate the high standard of living in many developed countries whose societies have unsustainable way of life. At the same time, they empower the life of developing countries to attain better living conditions without damaging the environment. The guideline is formulated on the basic trio of economical, ecological and social development in terms of sustainability for all developing and developed countries.

Within the scope on criticism of sustainable architecture in Turkey, the fundamental approach should be to consider the economical, social and ecological peculiarities contemplating the fact that Turkey is a developing country. The continuing ruralization and urbanization policies, priorities given to economical development efforts and westernization of social life directs the comprehension of sustainability and its architectural practices of Turkey.

2. THE CONCEPT OF SUSTAINABILITY IN TURKEY: THE SHORT PANORAMA

The United Nations Conference on Environment and Development, held in Rio de Janeiro of 1992, was the first conference which governmental boards of Turkey agreed with and promised officially to realize the sustainable development goals in its development process. The formal body of this conference promoted to form the local working groups towards sustainability. The local agenda 21 studies in Turkey, therefore, were the preliminary attempts to implement the sustainable principles in terms of economical, social and ecological aspects. They raise the acceleration of local studies and thus, enable to form action plans of cities for the next century.

The Second United Nations Human Settlements Conference (Habitat II), held in İstanbul of 1996, allowed giving extra attention to the concept of sustainability in Turkey. Both the earlier preparation phases and the discussions through conference enabled to understand the importance of sustainability and introduced the concepts of sustainable settlement and building. The discourse of conference was dominated by habitat and human settlements. Thus, it focused largely on the concepts of global village, mega city and human settlements aiming to nurture a healthy and sustainable habitat and human settlements. As a result, most of cities in Turkey had their own local agenda 21 groups encouraged by local governmental organizations. The conference also caused to increase in the number of non-governmental organizations studying on sustainability and researches in universities (Atauz, 2000: 194).

3. SUSTAINABLE ARCHITECTURE IN TURKEY

Even if the term “sustainability” has become a global concept for 10 years, it has still been a new subject for Turkey. Its scope is not appropriated adequately by both the governmental and non-governmental organizations in Turkey; at least as expected as after the last Habitat II Conference. Thus, the acceptance of concept towards the sustainability of life has needed an adaptation period, yet.

The one of most important reasons is that there is no active governmental involvement for establishing a sustainable built environment in Turkey. Political efforts towards the sustainable way of life are inadequate. Moreover, there is no valid architectural or planning policy promoting the sustainable architectural production. The examples of sustainable architecture in Turkey, therefore, are very limited in comparison with the existent building stock.

Within this scope, the sustainable buildings of Turkey indicate the importance of individual efforts, rather than governmental efforts, without representing any policy of Turkish Government on sustainable architecture. Most of them are built by non-governmental formations. The efforts in relation with the sustainable examples in Turkey are classified as follows:

- Individual efforts: Personal or communal efforts, i.e. NGOs, special formations,
- Governmental efforts: Local or central governmental organizations, i.e. researches by governmental universities.

Sustainable building examples in Turkey are generally the projects in building scale, mostly located on rural regions. There are limited numbers of operations for urban regions in both urban design and city planning scales. The building codes have also not been re-organized yet according to sustainable principles. The only regulation for “Heat Insulation” is not applied in buildings properly because of the incapability of supervision by local governmental boards.

At last, sustainable architecture in Turkey reflects varied regional conditions and priorities, and different models for implementation including both imitations and authentic ones, while most of them are spontaneously developed by non-governmental efforts.

3.1. Sustainable Architecture in Turkey by Individual Efforts

Majority of buildings typified as sustainable were built by individuals and non-governmental organizations in Turkey. Especially after the United Nations Conference on Human Settlements held in İstanbul, 1996, the new local organizations and groups of people living in

big cities has started to interest in the scope of sustainability. They search for possibilities to change their living habits and built environments for more ecological way. Thus, the concept of sustainability is quickly entered into architectural practice on such buildings as private houses, small housing groups, housing and public buildings for earthquake regions, ecovillages and buildings for touristic purposes.

3.1.1. Ecovillages: One of the most important problems experienced in all developing countries is the problem of migration from rural to urban areas. The same problem has been increased in Turkey since 1950s. This uncontrollable movement to cities caused to unplanned and unhealthy growth of urban life and crisis in cities. Except for continuously migration and growth of slums, there were other problems seen in cities such as visual pollution, infrastructure problems, lack of housing, impropriety of current housing stock, high density of urbanity and unsupervised building process.

Most of the inhabitants living in big cities of Turkey experienced dissatisfaction because of the existent city life. The certain reaction to the urbanization process concludes to rise up of the individual building efforts for a sustainable way of life.

In this respect, ecovillages in Turkey are revealed because of both a necessity to live in more sustainable way and to form an alternative settlement model. They react to the reality of grimy modern cities in terms of their living conditions and social life. The village, therefore, examines to engender a small-scale settlement, not in an urban form, giving importance both to person, his /her self-improvement and communal life towards the ecological point of view.

Ecovillage movement progresses newly in Turkey. The groups behind the ecovillage movement are mostly non-governmental associations, directly related with the concept of sustainability. They prefer to create a new built environment rather than conversion of an existent one. Despite the lots of groups intend to realize an ecovillage, there are only three members registered to Global Ecovillage Network (GEN) in Turkey (<http://www.gaia.org/services/Profile/Europe/Turkey/>):

- Harman Balaban Ecovillage, Ankara
- Ankara Sun Village, Ankara
- Ekofoça: Foça Ecological Village, İzmir (Fig. 1)

The ecovillages of Turkey are planned as low-density settlements located in rural areas closer to big cities, which are possible to do agricultural facilities. Their economical scheme bases on to be a self-sufficient system, so the primary source of income is the ecological agriculture and different kind of educational facilities. Moreover, it is important to respect local cultures and vernacular characteristics of the region in which they locate. Most the buildings, therefore, are constructed with local and recyclable materials such as timber, stone and mud-brick.

There are several ecovillages which can step to the building and planning phases. Since the building regulations in Turkey limit alternative ownership models, the organization process of an ecovillage is slower than any kind of building process. The realization of an ecovillage can only be possible if the organization statute is cooperative. Even if there are some ownership problems of ecovillage members according to the permission of Turkish Laws, all projects have development potentials.

Hocamköy Ecovillage Project, Anatolian Ecological Communal Life Movement (<http://hocamkoy.metu.edu.tr/>), was the first ecovillage formation in Turkey, constituted by a group of young people from universities to create new living and production model in Hasandede town, Kırıkkale in the middle parts of Turkey. In this project, the aim was to find practical solutions to immediate ecological problems in Anatolia, solutions developed in cooperation with local peasants and farmers. One such problem is large-scale migration of villagers looking for a better life in the cities, where they settle in slums with little infrastructure. Hocamköy being a self-sustaining village tried to provide an alternative, in a form directly relevant to the villagers. As well as having a role in the human community, the project also intended to get back the destroyed parts of the barren lands of Central Turkey by ecological restoration and occupying a niche between ecosystems (Fig. 2).

The land studies of the Hocamköy Ecovillage Project concentrated more on restoration of the field, agricultural facilities and building a mud brick house. The project was continued between 1996 and 1998. Besides, there were two projects of Hocamköy Ecological Life Cooperative, funded by United Nations Development Fund (UNDP), Global Environment Facility (GEF) as follows:

- Use of Renewable and Local Energy in Rural Areas and Small Settlements in 1998 on a Community Level (<http://www.undp.org/sgp/cty/EUROPE/TURKEY/pfs3714.htm>)
- Training Centre for Sustainable Livelihood in Hasandede Ecovillage in Central Anatolia (<http://www.undp.org/sgp/cty/EUROPE/TURKEY/pfs4233.htm>)



Fig. 1. Ekofoça: Foça Ecological Village, İzmir (photograph by Zeynep Arsan)



Fig. 2. The first mud brick house of Hocamköy Ecovillage Project, Kırıkkale (photograph by Zeynep Arsan)

Hocamköy Ecovillage Project was ended in 1998 and then, transformed into Harman Balaban Ecovillage Project, Ankara. The goals and the structural body of Hocamköy Ecovillage Project contributed as a model for the next ecovillages, and provide practiced knowledge for creating new ecovillages in Turkey.

3.1.2. Sustainable Buildings in Regional Context: A traditional settlement is able to present sustainable features as a source of inspiration for new buildings. Both its life cycle and built environment reflect the evolutionary characteristics that belong completely to the region. Actually, vernacular building experience is a basis for sustainable building in regional context. In this scope, the old discussion, ‘new buildings in old settlements’, comes out to be examined from the point of view on ecology and sustainability. The most popular approaches of ‘Contextualism’ and ‘Regionalism’ in architectural milieu of 1980s should be revised in terms of local sustainability.

There is a rising interest to sustainable architecture in regional context indicating the reacceptance of tradition paradigm by urban citizens occupied in rural areas of Turkey. Most of the sustainable examples are private houses respecting the vernacular characteristics of the region especially with building form, dimensions and building materials. Sensitive location of building mass, at the same time, points to the contextualist coherency with the settlement pattern.

Vernacular building tradition still continues in most rural parts of Turkey. In spite of the popularity for reinforced concrete construction system, the use of local materials and traditional construction techniques fortunately sustain. The old construction tradition can also be practiced in most of new sustainable examples in Turkey. There is a reference to traditional craftsmanship and construction techniques within the use of local materials such as stone, mud brick and brick. The sustainability of local construction techniques is essential in two buildings of traditional Bodrum (Muğla) houses (Fig. 3). They have a strong tectonic quality by the local stonework of local people with qualified craftsmanship and details (Ananias, 2002; 24). Moreover, Saklıköy Hotel in İstanbul has a simple but clear architectural expression of adobe bricks interpreting the old load bearing construction technique.

Sustainable architecture, moreover, should respect the local sustainability in terms of both social and ecological aspects. Sensitivity to local cultural values, preservation of natural habitat and significance given to collective memory are important issues for the continuity of a sustainable settlement. In that sense, Ahmet Kizen House in Muğla emphasizes the local characteristics of Fethiye region both with building construction technique and the way of living in (Fig. 4). It is the building of Pastoral Valley Project concerning a self-sustainable training centre about the traditional construction techniques and organic agricultural facilities for the native and foreign visitors. The project gives importance to use of local building materials and techniques learned from Fethiye Region.



Fig. 3. House in Bodrum, Muğla (photograph by Victor Ananias)



Fig. 4. Ahmet Kizen House in Fethiye, Muğla (photograph by Zeynep Arsan)

Kırlık Village is a holiday village constituting a small Mediterranean town close to Marmaris, Muğla (Fig. 5) (<http://www.kirlik.com/>). It is the group of private houses constructed with stone and timber in traditional construction techniques. In spite of the respectful intention to local context, the function of houses is contrary to the concept of sustainability, since the inhabitants of the village live only in summer seasons for one to three months. The idea of secondary housing, in other words summer housing, damages the natural ecosystem in most coastal parts of Turkey. Because of insufficient planning regulations, they spread out and disturb the untouched characteristics of natural environment for a small vacation. The two storied buildings utilize architectural characteristics of Mediterranean region just as visual effect, seemingly in Post Modernist view, without serving any sustainable life expectations.

Sustainability considers the respect for local climatic factors in regional context. TÜBİTAK National Observatory Guest House is situated on completely uncultivated land far from any settlement at the top of Bakırlitepe Mountain (2547 m.) in Saklıkent, Antalya (Fig. 6). The Observatory Complex is used both in winters and summers (Akoğlu, 1999; 52). The Guest House building notices the strong impacts of climate of this altitude, while it concerns the main function of complex. The building is constructed with local stones as a thermal storage and utilised solar energy for passive heating both in winters and nights (Şahmalı, 1998). Therefore, the building is designed in harmony with local climatic conditions using construction materials mainly available on site.



Fig. 5. Kırılık Village in Marmaris, Muğla
(from www.kirlik.com)



Fig. 6. TÜBİTAK National Observatory
Guest House in Bakırlitepe, Antalya
(photograph by Uygur Candemir)

3.1.3. Sustainable Architecture for Earthquake Regions: Sustainability of life has become an important concept for Turkey after the Gölcük earthquake took place in Marmara region and İstanbul in August 17, 1999. Most of the reinforced buildings collapsed, thus the building practices and regulations so far had to be revised. Besides, the vital demand appeared for the accommodation of thousands of people, who lost their relatives and houses, living in the Tent Cities.

To live with earthquake is now a critical approach for designers in Turkey. The new arrangements in building sector bring forth mainly the use of new materials and construction techniques, which is resistant to impact of earthquakes. There are several efforts, experimental or practical, to concern with betterment of life expectations and maintaining life in the case of an earthquake as a natural catastrophe.

The straw-bale buildings are favoured after the disasters in Turkey because of its practical application in a short time. They are built by the cheap material, straw-bales that is easy to find and effortless to maintenance without any need for craftsmanship. The first straw-bale building built at the end of a course and workshop study on ‘Straw Bale Housing for Homeless People’ in the middle parts of Turkey, Hasandede, Kırıkkale (İrklı Eryıldız, 2001; 46) (Fig. 7). The one storied timber frame building is the demonstration project for the similar

housing projects in earthquake region. It is made up of straw-bale walls plastered with mud and straw, stone foundations and a timber roof on the 40 m² areas. The building will be occupied by the local governmental boards of Hasandede town to serve as a library or post-office of the village.

Solar House and Science Park in the United Nations Tent City, Kocaeli is the other building constructed in March 2000 by the cooperation of Clean Energy Foundation, three sponsors of private energy sector and the governmental board (university) (Fig. 7). It is financed by the project of United Nations Development Fund (UNDP), Global Environment Facility (GEF) as a permanent building at the centre of city (<http://www.undp.org/sgp/cty/EUROPE/TURKEY/pfs3701.htm>). The purpose of building is both the Science Park (science experiments playing area) for children living in the United Nations Tent City and to provide a lightened open area in the case of new earthquakes.

The steel building was covered with 40 units of solar collectors and photovoltaic panels of 3kW. The electricity by photovoltaic panels is operated for the illumination of building and the surroundings. The solar collectors supply the hot water of two shower cabins and washing unit closer to the building.

The open area is designed as a park for gathering place to be lightened up by the electricity produced independently in site. Since the Gölcük earthquake occurred in 03.05 at night and the electricity was cut off, it is realized that some buildings and open areas should design not to be influenced by any interruption on electricity when the unusual events have taken place. Therefore, the project was planned for the inhabitants of tent-camp to offer a safe and comfortable built environment. The inner space is functioned as a science park area including games, sets and posters about simple scientific knowledge and experiments. This function provides different social activities for people living in these tents for a while (İzmit BM Çadırkentinde Güneş Evi, 2000; 101).

Moreover, other housing projects for Gölcük region were also designed, but not constructed yet. They will be carried out by a special foundation (Yürekli, 2000; 38). The importance was given to natural lighting and passive use of solar energy for heating by trombe walls and sunspaces.



Fig. 7. The straw-bale building in Hasandede, Kırıkkale (photograph by Zeynep Arsan)



Fig. 8. Solar House and Science Park in the United Nations Tent City, İzmit (from <http://www.temev.org.tr/galeri.htm>)

Economical Aspects in Sustainability:

3.1.4. Ecological Tourism: Rising interest to environmentalism movement and awareness on global ecological problems orientate the tourism sector in Turkey, too. This popular concept introduced the new ideas, ‘cultural and natural tourism in other words eco-tourism’, for contractors in Turkey, instead of classical tourism comprehension based on packet programs with sea and luxurious hotels. According to eco-tourism principles, tourism facilities should be fulfilled first with the conservation of local characteristics of site. This tourism approach mentions the preservation of natural and built environment especially in small vernacular settlements and sustainability of ecological, social and cultural values. It aims the tourists to become conscious about the importance of local sustainability.

The buildings for ecological tourism reflect wide range of design approaches depending on the type of tourism facilities and local characteristics of the land. Some of them present local traditional construction techniques in wholly pastoral environment far from any settlement as seen in pensions group in Faralya, Muğla (Fig. 9). The other one puts emphasis to show the sustainable life of a village by living in renovated buildings at least 3 months as seen in Alternative Village Tourism and Facilities Centre, Karaburun, İzmir. Pastoral Valley in Fethiye, Muğla is also a group of pensions in which the users can work in ecological agricultural facilities and daily work. The use of old traditional timber houses to live with local people is the other approach in Karadeniz region. And last, the holiday can be carried on a beautiful natural area, but in totally artificial village atmosphere within the scope of a packet program in Naturland Eco Park & Resort Hotels in Kemer, Antalya (Fig. 10) (<http://www.naturland.com.tr/indexe.htm>).



Fig. 9. Pensions group in Faralya, Muğla
(Photograph by Zeynep Arsan)



Fig. 10. Naturland Eco Park & Resort Hotels in
Kemer, Antalya (Photograph by Zeynep Arsan)

Most of the practices built for ecological tourism facilities in Turkey consider the traditional building technologies of the region in terms of location, settlement pattern, street-building relations, building form, materials, connection details and some cultural properties. In contrast, the others present imaginary built environments, i.e. in Naturland Eco Park & Resort Hotels, Antalya, which do not belong to the context of the region. Popular tourism approaches give rise to imitations by the way of inconsideration of architectural syntax and disrespect for vernacular pattern. The eclectic design approach to traditional architecture also constitutes wholly kitsch examples.

The idea of ecological tourism in Turkey presents an opportunity that guarantees continuity of traditional building pattern, sustainability of local life and economy for small-scale vernacular settlements. First of all, it enables the visitors to introduce with the local cultures explicitly. This causes the inhabitants to possess their living environment while they carry out the economical sustainability of the settlement. Therefore, eco-tourism in Turkey should need more encouragement due to sustain the rural built environment.

3.2. Sustainable Architecture in Turkey by Governmental Efforts

3.2.1. Experimental Energy-Conscious Buildings: Experimental energy-conscious buildings are the limited number of sustainable examples in Turkey funded by the central

governmental boards. They are designed and constructed by public institutions, especially universities and research centres of Turkey.

Energy crisis of early 1970's in Turkey directed many researches to be carried on renewable energy sources and their utilization in buildings. Since most widely found renewal energy form in Turkey is the solar energy, the experiments were concentrated mostly on its utilization. Thus, the experimental solar houses have been built in various locations of Turkey since 1974. The refreshing interest to environmental crisis at the last decade enlarged the scope of researches on clean and renewable energy sources and their operation in energy-conscious buildings. The buildings are designed to apply the passive and active way of heating, cooling and ventilation applications and to minimize energy consumption and costs in buildings. These are the experimental houses of MTA Solar Energy Laboratory, Çukurova University Solar House, Ege University Solar Energy Institute, Ankara Municipality Solar House, Middle East Technical University Solar House (Fig. 11) (Demirbilek, 1999), Erciyes University Solar House, Erciyes University Sports Hall (Fig. 12) (Tekin, 2001) and Hacettepe University Solar House.

The number and distribution of experimental buildings in Turkey indicate that the encouragement of researches on energy-conscious buildings is insufficient. The local governmental organizations and universities do not have any policy to support sustainable building, as parallel to the interest of central governmental boards on sustainable architecture.

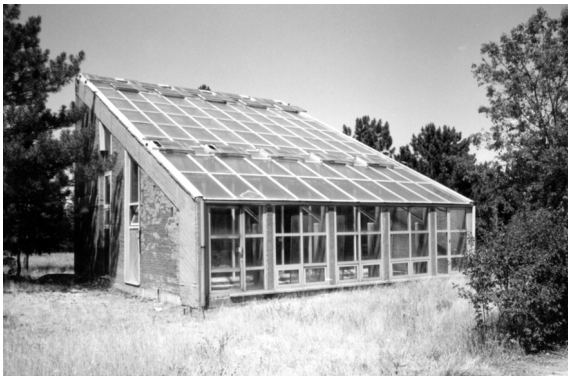


Fig. 11. Middle East Technical University Solar House in Ankara (Photograph by Zeynep Arsan)



Fig. 12. Erciyes University Sports Hall in Kayseri (Photograph by Zeynep Arsan)

Most of experimental energy-conscious buildings are open to discussion in terms of their

architectural quality. Because the teams composed of engineers excluding the architects designed some of them, they have poor representation of spatial quality and lack of zeitgeist. Moreover, the building materials and construction system, that is generally reinforced concrete skeleton system as being the most spread building construction system in Turkey, have been chosen far from any ecological point of view. The relationship with the local built environment and social values is also insensitive. As a consequence, it is hard to evaluate these various buildings of research groups as a design product or not.

3.2.2. Köykent Project: Köykent Project is a kind of rural development program in the scope of rural sustainability coordinated by Ministry of Housing and Public Works, Central Governmental Institution. It is a large-scale project to make plans of alternative rural environments, projecting the sustainability of rural life within the perspective of betterment of life expectations. Projects are based on the network of new self-sustaining villages, which have agricultural economical system in different rural regions of Turkey.

Köykent project is planned as a “precaution scheme” against the large scale of migration from rural to urban areas in Turkey (Gülçubuk, 2001; 10). To stop the immigration to cities because of insufficient supply of services and lack of job opportunities in rural regions is the first aim of this project. Secondly, they encourage the return of immigrants to rural areas in which inhabitants have better occupations, infrastructure and life expectations. Therefore, the settlements are constructed for both the villagers of the rural regions and the immigrants living in worse conditions in cities. They give opportunities for the continuity of economic growth and sustainability of current social life against the deterioration of cultural values seen in cities.

The program anticipates gathering the potentials of group of villages, forming co-operations for the development process. At the same time, it facilitates the governmental services to broaden through the rural areas of Turkey (<http://www.arkitera.com/haberler/2002/01/26/koykent.htm>).

A pilot project continues in Mesudiye, Ordu, supported by World Bank’s loan for rural development projects (Gülçubuk, 2002). In the scope of the project, 9 villages of Mesudiye district coordinated their possibilities and power to constitute a confederation with their infrastructure, water network, social and cultural centres and roads. The local government fulfilled the public requirements, i.e. school, hospital or fabric, in one of the districts instead of performed separately for all ones. Villagers of Mesudiye maintain the program from the beginning of this project.

This project advocates the self-sustainability of rural settlements. On the contrary to this basic theme, it undervalues the ecological point of view within both social structure and built environment. The project does not notice ecologically sound alternatives to planning and construction of a settlement. In the scope of affordable housing, the new buildings are constructed as a skeleton system with reinforcement without using traditional construction techniques. The production of energy and the use of renewable energy sources are not still considered. Recycle of organic wastes on a community level is also out of question. In this respect, the architectural proposals cannot be regarded as wholly sustainable buildings.

Actually, it is contradictory that the governmental boards sustains the idea of rural development by Köykent Project, while it has no any formal national policy based on

sustainable ruralization. Even if this project serves for decreasing migration, there is a reality that is the unavoidability from city life and migration through urban settlements. The project proposes a romantic view of purely pastoral life style versus the pressure of industrial improvements in cities. It cannot serve alternative solutions to the paradox created by the occupation of rural areas by urban citizens, while the population growth derived from this kind of rural people in cities. It can be concluded that the project should reconsider the development program in terms of social, ecological and economical aspects of sustainability in Turkey.

4.CONCLUSION

Sustainable buildings of Turkey specify the unique position about the concept of sustainability belonging exclusively to Turkey. First of all, the examples provide us different models to build up new practices, since they reflect varied regional conditions and priorities in material, building and settlement scales. Even if some are fairly imitations representing imported discourse on sustainability of western world, the other buildings are the authentic ones signifying contextualist approach based on local sustainability. Therefore, the limited number of sustainable buildings constitutes samples to present better solutions and design tools for new buildings in Turkey.

The fundamental approach for design and construction of new sustainable buildings in Turkey should be to consider the economical, social and ecological peculiarities of the country contemplating the fact that Turkey is a developing nation. This inevitable outlook should be achieved with the help of governmental involvement as much as the concern of non-governmental organizations. On the contrary, only several projects so far have been encouraged or directed by governmental boards. There is no valid architectural or planning policy promoting and supervising the sustainable production in Turkey. Consequently, there is an urgent need for an active governmental involvement in establishing sustainable human environment.

Suppose the continuity of this state-of-art, it is better to determine various strategies for new sustainable solutions in Turkey. Further studies should concentrate more on the following aspects:

- The extra attention to urban sustainability issues in Turkey: There are a limited number of sustainable operations for urbanization in both urban design and city planning scales. Ecological regeneration and rehabilitation studies on urban form should be promoted due to the betterment of city life. Moreover, the importance should be given to co-housing projects in cities to stop the spread of private housing in rural areas and to minimize the ecological footprints in both agricultural and natural landscape.
- The more importance to rural sustainability: There is a limited number of projects respect for rural sustainability of small towns in Turkey. Sustainable building projects in rural areas should be supported in terms of stop the large-scale immigration through the urban settlements. Since the concept of sustainability concerns to form a sustainable life both in rural and urban areas while assuring social, ecological and economical sustainability, the new architectural practices in rural areas should be directed and supervised in terms of sustainability.

- The widespread trend in sustainable architecture of Turkey: The most common approach seen in sustainable examples of Turkey is to build new ecological private houses. The inhabitants of these houses migrate from cities to rural areas and then, cause to the spread of urban form. The damage on natural ecosystem should always be considered.
- The continuity of vernacular sustainable settlement: The lack of importance to conservation of current vernacular sustainable values constitutes the problem for local sustainability of settlements in Turkey. Builders should reconsider the traditional life cycle and building technologies of the region in terms of building form, location, settlement pattern, street-building relations, building materials, connection details and some cultural properties.
- The encouragement of use of local materials: There is a rising interest to traditional craftsmanship and construction techniques within the use of local materials such as timber, stone, mud brick and brick in sustainable buildings of Turkey. The use of local materials and the continuity of traditional construction techniques should be the precept for the new sustainable buildings.
- The use of local and renewable energy sources in sustainable buildings: There is insufficient interest and use of renewable sources of energy in building industry of Turkey. Due to the geographic location, Turkey has an advantage for the utilisation of solar energy. The production of energy and the use of renewable energy sources, however, are not still considered properly. Especially the use of local energy sources produced independently in site should be an essential subject in terms of self-sustainability of settlements. The experiments on the passive and active way of heating, cooling and ventilation applications should be more encouraged by universities and non-governmental organizations. Minimization of energy consumption and costs in buildings might awaken the public interest to the subject.
- The lack of sustainable building industry in Turkey: Building industry is still no take up sustainability as part of mainstream business. The active governmental encouragement should be needed.

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