

Cultural Influence on Evaluation System of Social Sustainability in Turkish Housing Projects

Salah Haj Ismail¹, Hatice Kalfaoglu Hatipoglu²

¹ *Assist.Prof.Dr.Ankara Yildirim Beyazit University, Ankara- Turkey*

² *Assist.Prof. Dr. Ankara Yildirim Beyazit University, Ankara- Turkey*

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Abstract

Architects have always been keen on providing efficient and ideal housing while considering multiple factors because it is one of the essential needs of human beings. Sustainability has become a core topic in housing design and several studies have tried to define the important factors that should be considered in order to realize sustainable design.

Lately, architects and urban planners managed to take steps forward towards social sustainability in design to define the socio-natural relationship allowing lasting environmental quality. Many studies in the US and Europe were conducted to analyze this complex mission.

Since different communities have developed different cultures, traditions, and attitudes dealing with housing projects, this paper aims to investigate the different factors and criteria to analyze and evaluate social sustainability in housing projects for culturally different societies. This investigation provides an understanding of the diverse needs of those different communities in terms of socially sustainable design.

Different case studies from similar cultures in Turkey and Syria have been analyzed towards the establishment of clear and solid scientific evaluation system suitable for those communities in order to discuss the factors needed to achieve social sustainability of housing on an architectural and urban scale.

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1. Introduction

Since architecture has always dealt with the problems of people in terms of spatial quality, the buildings and the built environment should contribute to providing a livable space for people. Social quality and sustainability ensure this liveability by improving nature-human-society relationships on the long term. Especially design of residential areas with social quality has a great significance because we spend most of our lives in our houses.

To provide this social quality in residential areas, it is important to respond to needs and requirements of people and enhance the relationship between nature and humans. This allows for the building of a better society and improves quality of life for everyone because a better design of the built environment can contribute to better interactions and liveability of people.

This social quality is related to functional quality, which is one of the core aspects of architecture. Functionality is described in Oxford Dictionary as “The purpose that something is designed or expected to fulfill.” (“Functionality”, n.d.) A functional framework should be ensured to allow people to carry out activities efficiently and comfortably. Physical and psychological needs should be fulfilled such as privacy, social contact, freedom etc. Adaptation to the changing needs and circumstances is also a factor that makes the building functional (Voordt and Wegen, 2005).

Social-functional quality of residential projects is the determinant of the value of social sustainability of these housing areas. It is difficult to assess this quality but it is important to describe the indicators. This study first determines the criteria needed to evaluate social sustainability and seeks to define the current position of housing regarding social sustainability in two similar but different cultures in order to determine the cultural influence on this evaluation.

Nomenclature

SHQ Sustainable Housing Quality

2. RELATED WORK

There are some important indicators in housing that enhance the quality of life with a better housing design. Social sustainability is one of these main indicators. Sustainability is not only concerned with global warming and recycling, but it ensures a meaningful, better and a happy life for all (Chapman and Gant, 2007). Social sustainability is one of the three main pillars of sustainability and is a factor that is related to the satisfaction of the user and human-centered planning. Polese and Stren describe social sustainability as “development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration with improvements in the quality of life for all segments of the population” (Polese and Stren, 2000).

In Syria, (Kandakjy, 2011) social sustainability is not evaluated or analyzed in any housing project constructed by public institutes. (Haj Ismail, 2012) says that the Syrian design norms give the base for good social sustainability but it lacks many social activities and spaces. In Turkey, social sustainability has not been a real consideration in design and has not been evaluated in housing projects (Kalfaoglu Hatipoglu, 2016; Tereci, 2017). The notion of sustainability has remained on an economical level.

3. METHODOLOGY

The study compares the European standards and norms for design to achieve social sustainability with the standards and designs in two case studies in two different countries. It then examines the reaction/interaction of users from those different cultures to these standards in order to understand if those norms are required in those cultures or rejected for different needs. Ultimately, we are suggesting the best practices and applications to achieve social sustainability in a different cultural atmosphere. The case study from Turkey is from the city of Konya, which is located in the city center and has three housing blocks. The second case study is a mass public housing for youth in the city of Aleppo, the biggest city of Syria.

4. EVALUATIONS SYSTEM FOR SOCIAL SUSTAINABILITY

To evaluate the social sustainability of housing, indicators of the social functional quality analysis of SHQ (Sustainable Housing Quality) evaluation system have been used (Kalfaoglu Hatipoglu, 2016). SHQ evaluation system includes three main criteria to evaluate housing projects, these are Social-Functional Quality Analysis, Aesthetic-Visual Quality Analysis, and Energy-Construction Quality Analysis. Social-Functional Quality Analysis of this evaluation system has eleven sub-indicators, which include several questions and qualitative analyses using spatial and structural data and observations for the evaluation.

The major interest according to the community in these two countries was forwarded to these three indicators.

- Accessibility and Circulation
- Flexibility
- Children’s playground

4.1. CASE STUDY IN KONYA/TURKEY

Mavisehir housing complex is a 120 flat estate housing with three blocks, each of which has two entrances. The construction of the project was completed in 2012.

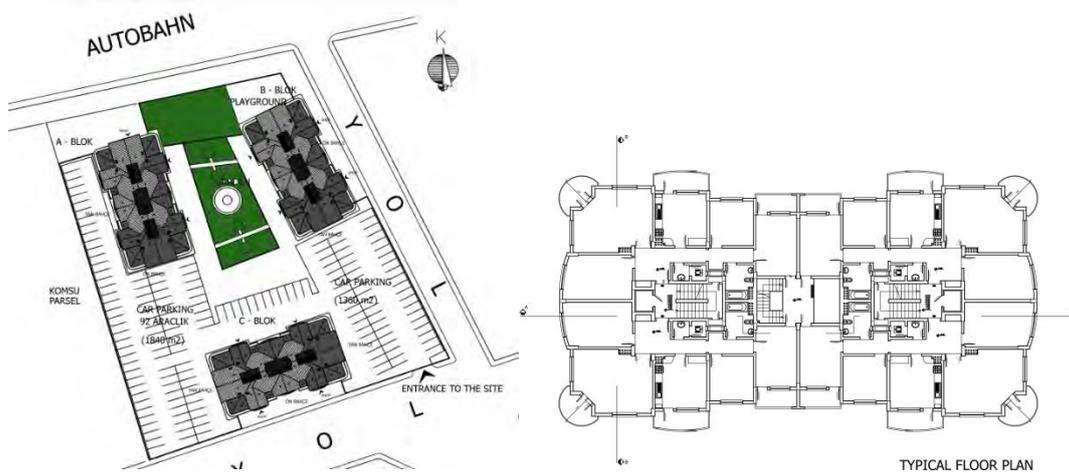


Figure 1: Site plan and typical floor plan of Mavisehir Housing

It consists of 10 story- buildings around a garden. The site includes children’s playground, open car parking, and greenery with sitting possibilities for people. The surrounded site is guided by security guards to control the entrance of the foreigners. The site is close to the city center.



Figure 2: The general image of the buildings



Figure 3: Parking place in front of the buildings

Accessibility and Circulation: One side of the housing is autobahn, which causes a lot of traffic congestion and the rush of everyday life around the site. After the entrance to the site, finding a way to the building entrances is clear and easy. Roads are not well defined and the pedestrian and car distinction is provided neither at the entrance of the housing nor in the garden and there is not a traffic calming measure to control vehicle speed. There are children playing in the way of the cars and parking places.



Figure 4: The entrance of the buildings (left) and circulation routes (middle and right)

At the entrance of the buildings, there is a steep ramp, which exceeds the slope of 6%. Inside the building, there is another ramp without handrails. In the buildings, there isn't a clear distinction between materials and these materials do not support a secure circulation (slip-resistant finishes, spatial orientation, recognizable etc.). The stair enclosure does not benefit from daylight, which causes the loss of the attractiveness and social/physical adversities.

Public transport is provided mostly from the autobahn mentioned above but the nearest transport possibility is the "dolmus", which goes to the center and does not provide the possibility to be used with buggies because of the size of the vehicle (smaller and higher than the bus) and the crowd. A lot of residents have two cars.

Flexibility: The interior walls of the flats are not load-bearing but the material cannot easily be demolished without intrusive interventions. A change in the design of the flats has not been foreseen in the planning phase. The rooms are arranged in a corridor. Changing of the flat sizes (smaller/bigger/divided to) is not possible because of the restricted size of the entrances of the flats. Any construction changes in the flats have not been made until 2017.



Figure 5: The lack of distinction pedestrians/cars (left), playground (middle), playing children in the site (right)

Children's Playground: There is a small playground with some equipment, which is located at the edge of the site near the autobahn. The lack of a sandpit seemed to be an important deficiency by the residents which is typical in the playgrounds of Turkey. The playground equipment and floor are made of plastic and have a standard design, which can be seen in any housing estate.

There are also a lot of children playing and cycling in the whole housing site. However, the lack of distinction between pedestrians and cars is a potential danger to the safety of the children as stated before. An indoor playground for too hot/cold days lacks in the project.

There is not any other playground close to the site in the surrounding.

4.2. Case study in Aleppo/SYRIA:

Youth public housing in Maasariyeh is a new city quarter of many similar projects in Aleppo. It is composed of 132 blocks of five-floor buildings with a total of 3960 flats divided into different zones including all services and infrastructures. It was planned to be constructed in five phases starting from 2007 and finishing in 2015.

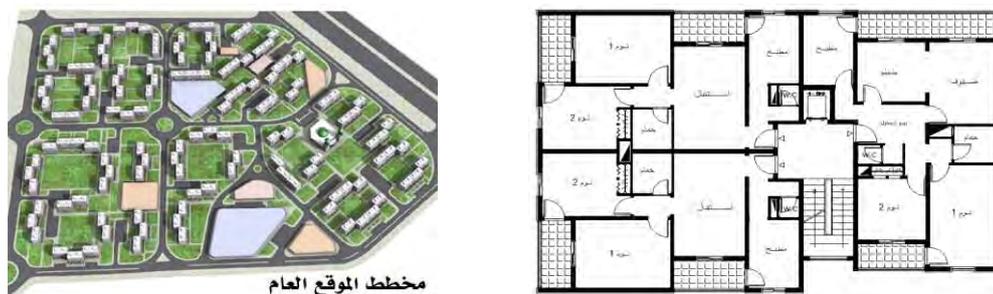


Figure 6: Site plan of Maasariyeh and typical floor plan

Accessibility and Circulation: The complex is separated from the airport highway with a wide green belt surrounding it. It is well connected to the city center around 5 km with public transportation and easy to access by private cars, it is clear to reach buildings entrances and for each block, there is an open parking lot. the streets have traffic calming pumps located on the outer edge of the building where the area in between is for pedestrians only. The entrances have 3 to 5 steps stairs.



Figure 7: building height of five floors(left) and separation of vehicles from pedestrian (right)

Flexibility: The reinforced concrete structures and the light divisions materials enabled the easy modification of the interior spaces mainly adding new rooms or widening the kitchen, closing the balcony were the main modification asked by the users, in some cases joining two flats to form one bigger for a big family also was noticed especially with the family growth in years even the project was designated to newly married young couples. Also, they prefer to remove the eating room and add it either to the kitchen or living room since in the tradition there is no eating space needed.

Three different models of the design are found according to the size, using corridors or central hall, which was not always satisfactory for some users who prefer the central salon style.



Figure 8: Modification done by users: closing balconies(left) removing the wall between two rooms(right)

5Children's Playground: The plaza in between buildings designed as a green area was used as playgrounds by children and football camps even though it has no equipment. This is because of the high temperature which needs a shaded area for playing and all playgrounds were collected in the central part of the quarter which has a higher level of vegetation and trees providing suitable shadow level. Also with the clear separation between the cars and pedestrians, many children are riding their bicycles in the alleys.

5. DISCUSSION AND RESULTS:

According to users' interviews in Konya, they think it would be better with a distinction between pedestrians and vehicles in the garden and an underground parking would be a better solution to achieve this distinction, while in Aleppo (Touma G.2010), they find the parking area is too large and should be decreased and added to play areas for the children. In addition to that, the possibility of using daylight in the staircases would be an added value of the design. In both cases, the accessibility of disabled and infants wheeled equipment should be enhanced/ added to the entrances.

For the flexibility in Konya, they prefer that the design should be 5 rooms instead of 4 rooms since it does not allow easy modification after construction, while in Aleppo, even easy modification can be conducted but they prefer to take into consideration in early stages the possibility of expansion when the family grows since it is designed for newly married couples. Moreover, they prefer to have a lift in the building because the design allows this addition.

The playground design in Konya should consider using more natural adequate materials for children and should be overseen from all the building blocks. In the other case, they asked to have more trees in playgrounds to achieve higher shading and more noise insulation.

6. CONCLUSION

After the application of the SFQA on two case studies, we found that the culture of these communities has strongly affected their decision in using, modifying and future intervention needed.

As architects, our responsibility is to understand the needs and requirements of the residents and solve any short comes in the design. Thus we can enhance the social quality of residential projects and decrease the need for future interventions.

Design of an underground parking area, indoor playgrounds for too hot/cold days, bigger lifts, daylight reaching circulation routes, more qualified playgrounds and definition of pedestrian/car circulation should be ensured in Konya. Moreover, the location of children's playground in Mavisehir, which is next to the autobahn, was also a wrong decision decreasing the quality.

Compared to western cultures, we found some differences such as the minimum need of parking because of the minor use of cars in Aleppo and the need for less open playgrounds and more indoor-shared facilities/spaces due to the different user behaviors in those different cultures.

The social evaluation SFQA should take into consideration the cultural differences between communities and it is essential to understand the real requirements of the community in order to respond to these needs correctly both in planning and design.

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9.RESUMEE

Hatice Kalfaoglu Hatipoglu works at Ankara Yildirim Beyazit University, Department of Architecture, as an Asst. Prof. She got her B. Sc. and MSc (as Dipl. Ing) degrees at Faculty of Architecture and Planning at Vienna

University of Technology, Vienna, Austria in 2008. She also obtained her PhD degree in Architecture and Planning from Vienna University of Technology.

She worked as an intern in architecture offices Coop Himmelblau in Vienna and Mimarlar in Turkey. She worked as an architect and a designer in BG4 Architects, Zauhenberger Architecture Office and Espace Design & Visualisation Company in Austria. Her current research interests are housing design quality and sustainability.

Salah Haj Ismail is an Associate Professor of architecture. He obtained a B.S of Architectural Engineering from Aleppo University which is followed by postgraduate degrees in Building Sciences, Archeology and an M.S. in Construction Management. Then he has completed his PhD in Architecture at Politecnico di Torino, Italy. He has worked in several universities in Syria, Italy, and Spain as an academician. Also he was establisher of Mimar Architectural group in Syria 2002 and worked in different offices in Italy, (Maat Architettura), Saudi Arabia(Bunian) and Spain(TorreArch). He is pursuing his studies at the Civil Engineering department of Ankara Yıldırım Beyazıt University. He is fluent in Spanish, Italian, English, in addition to his native language, Arabic. His current research is Sustainable development of rural architecture as solution for refugees housing.