An educational experience of urban renewal: A case study of mass housing in Kagithane, Istanbul

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Abstract

In Istanbul, rural and urban migrations and unplanned urbanization have resulted in severe housing problems, especially for the lower and middle-income groups. Within the context of Architectural Design Studio VII for the IKU Department of Architecture, senior architecture students were encouraged to go beyond developing projects for mere educational purposes and instead discuss alternatives for residential design. A problematic residential area of 40.000 square meters in Kagithane, which has officially been designated a renewal area in Istanbul-Turkey, was selected as the case study area. Students were asked to analyse the site in terms of physical and social attributes. Each student detected and defined different sets of problems and was expected to propose an experimental, creative, new housing alternative and system. The main theme of the studio was to understand, evaluate, and improve urban life in and around the defined site. The approach of the design process followed was a contextual methodology. The aim of this paper is to evaluate and put forward different contextual approaches within the framework of this project for use in pursuing new solutions to similar global housing problems.

Keywords: Architectural education, urban renewal, housing, Kagithane in Istanbul, contextual approach

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1. Introduction

The main focus of this design studio was to understand Kagithane, Istanbul more fully and explore alternative urban housing scenarios.

Until the 1980s, this city experienced rapid urbanization due to the industrialization of Istanbul. Rural/urban migrations increased Kagithane's population, but the government did not properly plan for housing. Accordingly, immigrants began occupying empty public spaces and constructing illegal shelters. After a period, these buildings were legalized and, as a result, single storey shelters began to transform into multi-storey shelters, but without any physical or social improvement. At the beginning of the 1980s, the urban fabric was comprised mostly of apartment blocks. They were highly qualified for the upper middle class, but poorly qualified for newcomers. These apartment blocks were constructed lot by lot, by small contractors. By the end of 1980s, demographic changes in the city began to disturb Istanbul's elite. Then, a radical planning action of moving the urban poor to the outskirts of the city was initiated and valuable inner city sites were given to large construction companies for conversion to high-end housing projects for the upper class. This generated significant sociocultural segregation in Istanbul, a city of great cultural and ethnic diversity, similar to what has been seen in other cities around the world since the rise of industrialization.

Renewing the existing heavy building stock, which is hurriedly produced with scarce resources and little or no planning, is the most complicated problem with Istanbul's urban renewal. This stock, built piecemeal, is neither resistant nor ready for expected earthquakes, and also does not meet the humanitarian needs of the residents. Moreover, the urban patterns this stock forms do not allow for roads capable of bearing Istanbul's heavy traffic; the infrastructure of this city is insufficient and generally lacks public space.

2. Problem Statement

In Architectural Design Studio VII, with the above-stated problems in mind, students at Istanbul Kultur University in the Department of Architecture were encouraged to move beyond the development of projects solely for their educational purposes and instead were directed to discuss collective housing as an alternative to urban sprawl. Consequently, a problematic residential area of 40.000 square meters in the Nurtepe District of Kagithane Province (see Figs.1a, b, c, and d) was presented to 25 students in their fourth year.
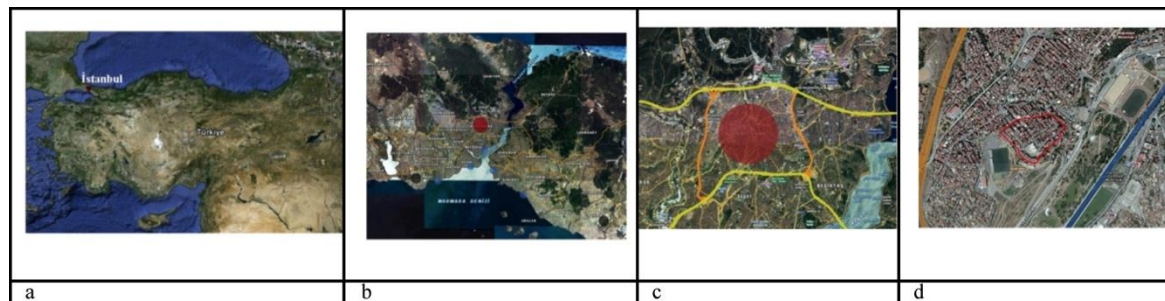

Figure 1. Location of the project area at different scales; (a) Istanbul in Turkey; (b) Kagithane in Istanbul; (c) Project zone in Kagithane Province; (d) Project area boundaries (redrawn using the images from https://earth.google.com)

3. Kagithane From Past to Present

Kagithane district is located along the two sides of Kagithane Stream, beginning at the Golden Horn and continuing north; it was once famous for being a major traditional recreation area. Kagithane Stream, which pours into the Golden Horn at its endpoint, had large green meadows on both sides. It was home to the palace barns and a military barracks during the time of Bayezid the Second. These animal pastures became a popular hunting and recreational area for the Ottoman Sultans. After Sultan Suleyman the Law Maker, the district developed into an industrial area. Until the early 18th century, Kagithane was known as a recreational area with trees, meadows, and greenery, some small industrial workshops, a private hunting area, mansions with gardens, and a small village. After the 1720s, the district was reorganized and many palaces, mansions, and fountains were constructed along Kagithane Stream, partially reshaping the riverside. Kagithane became the symbol of the Tulip Period of the Ottoman Empire (1718-1730), a time that saw clear progress in art, literature, and culture, which remained until the Patrona Halil Revolt. With this uprising, many palaces and mansions belonging to nobles and other privileged people were demolished by the lower income groups. Beginning in the 1800s, attempts were made to repair and reconstruct the buildings in this district, and it retained its importance until the early 20th century. After the complete removal of the ruins of the palaces and mansions, the district first became a military area in the 1940s, and then an industrial area in the 1950s. Kagithane Stream became polluted, and eventually partially dried up. The district became an area for groups of low-income squatters working at the industrial establishments in this vicinity (Istanbul Encyclopaedia 1993-94).

Today, Kagithane has officially been announced as an urban renewal area in Istanbul. It is close to the city centre and the glimmering skyscrapers of the central business district of Maslak. This proximity has helped to accelerate the urban renewal effort. Throughout this process, there has been a threat of increase in the number of gated communities, which has served to isolate residents. As gated communities become more and more widespread, it is believed that they will begin to fragment the area and weaken the traditional neighbourhoods. Kagithane possess a unique cultural and historic structure, which deserves careful consideration. Beyond the gated communities springing up in the district's residential areas, the replacement of obsolete buildings by residents tends to be done spontaneously, hurriedly, and sometimes illegally. Accordingly, there is a tendency to undermine the site's distinct characteristics and build apartment blocks that violate the topographic conditions, and disregard the traditional street life and neighbourhood culture. Use of these poorly considered instant solutions has served to create deserted, wasteful, unused public areas that blight the urban fabric.

3. Questions Shaping the Contextual Approaches

Fourth year architecture students were asked to begin their design process with a thorough site analysis. They concentrated on the cultural, social, historic, and manmade features of the site and the district. Students were encouraged to ask questions in order to establish the guidelines for this design project, such as:

1)   How might one define the new identity they would like to see given to the project site? What are features that might enhance the unique identity of the area?

2)   What can be said about the current community profile? Who lives there? What do they do? How many people live there? The students were also asked to question the community profile according to the population's occupations, birthplaces, education, religion, dwelling types, family types, etc. The purpose was to collect a set of socio-demographic information for use in a detailed profile.

3) How might students define the profiles of future residents? They were also asked to compare the current residents to possible future residents.

4) What are the social, cultural, economic, and environmental expectations of the local people?

5) What are the considerations and criteria for social, cultural, environmental, and physical improvements?

6) What about transportation between the project site and other parts of the city? How might students describe the pedestrian and vehicular circulation in the area? They were asked to discuss the potential for public space, pedestrian circulation routes, green areas, and parking.

7) What about the physical conditions of the built environment? How might they define the spatial characteristics, views of the site, and views from the site? How about the aesthetic features?

8) What are the nearby focal points in the area? How is the area associated with these? How might these focal points be included in the design process?

The students were then asked to put this context at the centre of the design process and rethink the relationship between people and place as they searched for answers. The aim was to develop a context that incorporated a variety of social, cultural, and physical characteristics and relationships. Discovering different lives, fabrics, people, and situations was the inspiration for all of the resulting projects.

5. Key Concepts for Urban Analysis

The key concepts for this urban analysis can be grouped into two categories: physical and socioeconomic. The physical characteristics of the project area were categorized according to: figure-ground relationships, street patterns, street sections and silhouettes, access and circulation, climatic conditions, and the properties of existing building stock. Socioeconomic characteristics were categorized according to land use and household profile.

5.1. Physical Characteristics

- Figure-Ground Relationships:

Diagrams and models were used to illustrate the general patterns found in the existing urban fabric. Nearly all of the images depicted chaotic development patterns, a lack of order, and irregular footprints. Another issue was the amount of open space being wasted by the temporary storage of cars and backyards full of junk and garbage (see Fig. 2).
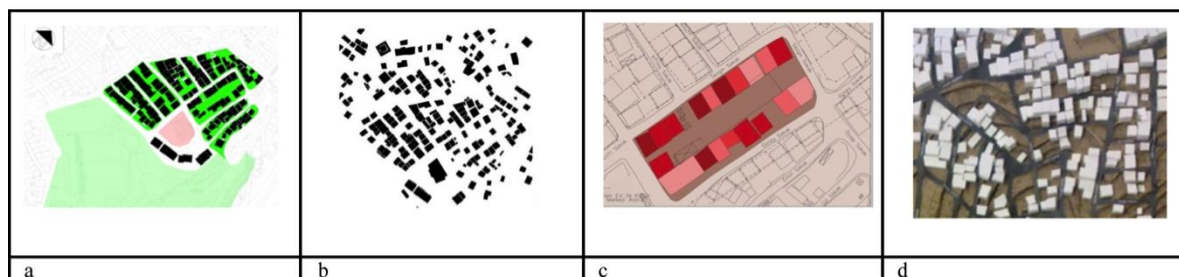

Figure 2. Different expressions of figure-ground relationships in the project area; (a) Mass-open space relationship including green areas in the project area and close environs; (b) Mass-open space analysis of the project area; (c) A typical building block in the project area; (d) Site model

Street Patterns:

The project area suffered from a highly irregular street pattern consisting of a network of narrow, one-way and two-way local streets (see Fig. 3).

Figure 3. Different expressions of street structure in the area

- Street Sections and Silhouettes:

Students drew sections of various local streets and highlighted the irregular heights of various residential blocks (see Fig. 4). These graphics also show pedestrian spaces as interfaces. In this study, the formed urban spaces in the area were questioned and the building-to-street relationships explored.
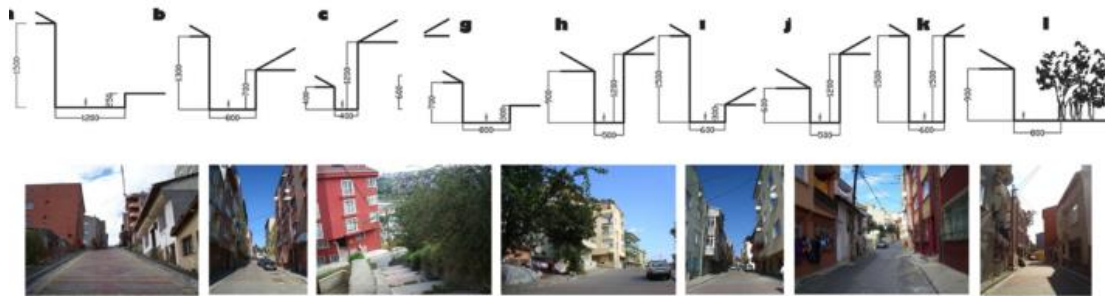

Figure 4. (a) Street sections; (b) Snap-shots from different streets.

- Access and Circulation:

Pedestrian inconvenience, narrow streets with 'unconscious' dead_ends, and irregular circulation patterns were primary issues.

Figure 5. Snap-shots showing the inconveniency for pedestrians

- Climate Conditions:

Weather characteristic of Istanbul can be described as a cooler version of a Mediterranean climate: a short spring, ideal summer temperatures, a long autumn, and a rainy winter.

- Properties of the Existing Building Stock:

The number of floors of existing buildings was generally less than four, to a rate of 97 per cent. 22 per cent were single-floor buildings, ten per cent had two floors, 25 per cent had three floors, and 30 per cent has four floors. There also were buildings with five floors at a rate of 11 per cent, and buildings with six floors at a rate of two per cent. These took advantage of the steep topographic conditions (see Fig. 6a).

The structural conditions of the existing buildings were of a medium condition at a rate of 68 per cent. 13 percent of the buildings were in good condition, and 13 per cent of the buildings were in bad condition. Three per cent were in ruins and three per cent were under construction (see Fig. 6b).

The building stock of the project area primarily was composed of new buildings with reinforced concrete structure (80 per cent); the rest were new masonry buildings (20 per cent) (see Fig. 6c).
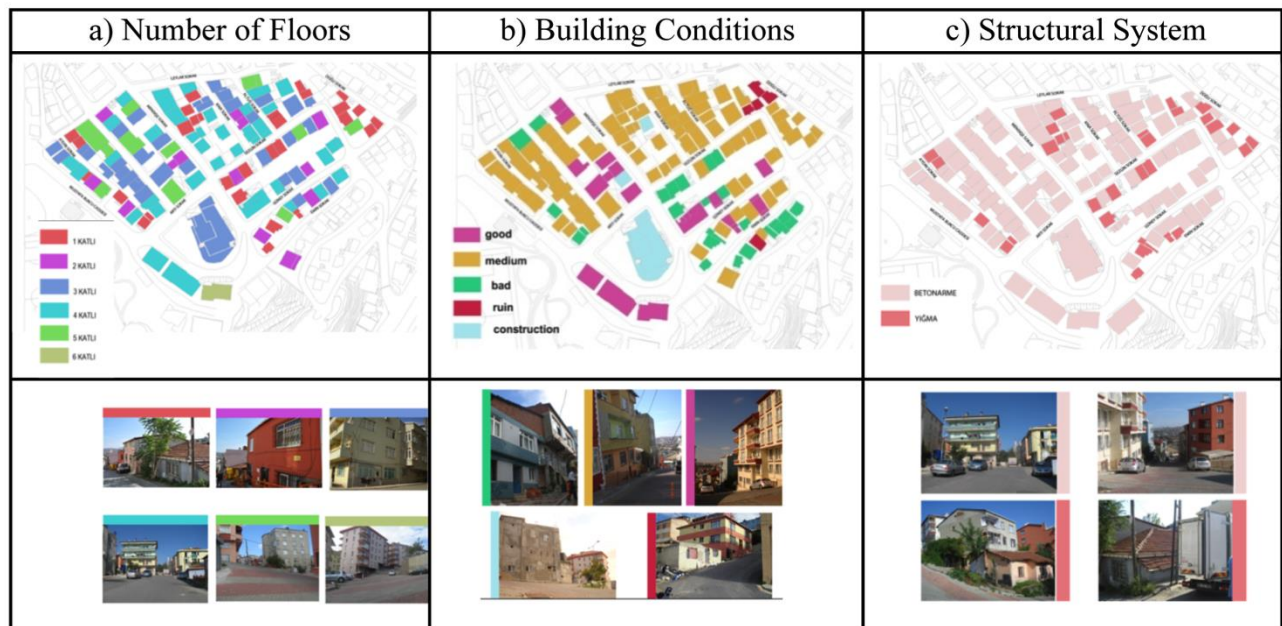

Figure 6. Properties of the Existing Buildings; (a) number of floors, (b) building conditions, (c) structural system

5.2 Socio-economic Characteristics

- Land use:

The project area was mainly a residential area composed of new buildings with residential (90 per cent) or residential together with commercial use (5 per cent). There were a few solely commercial buildings (5 per cent) and one cultural building in the project area (see Fig. 7).

Figure 7. Distribution of land-use

-Household Profile:

Students were asked to analyse and define the household profile of the area for their housing project. This definition was actually twofold. The first group was the existing population living in the project area. The second was a completely new group expected to arrive following the urban renewal efforts in Kagithane and the results of this housing project.

The existing population of the project area mostly included families: either traditionally large families that included parents with children and grandparents, or smaller families composed of parents (single or couple) with children of different ages. It was one of the major aims of this project to protect and design especially for this existing profile.

The traditional household profile has changed a great deal, especially in Istanbul. Instead of traditionally large families, today's household profile includes couples with one or two children, singles often using their home also as an office, couples without children, single-parent families, and the elderly. After implementation of the results of this housing project, this second group is expected to move to and live in this area.

6. Major Contextual Approaches

The students' final projects are categorized below in five groups, according to their main approaches.

6.1. Sustainability of the Neighbourhood Culture through Different Examples

The sustainability of the neighbourhood culture is an important existing value of the project area. It naturally affects the level of human liveability, liveliness, and security. Apart from the social integrity of the inhabitants of this area, Clarence Perry's idea of the neighbourhood unit (Broadbent 1996), which emphasized that day-to-day facilities (such as shops, schools, playgrounds, etc.) should be within walking distance of every house, was kept in mind. Parallel to this idea, an effort was made to keep heavy traffic out, and instead confined to arterial roads around the area. Also, the project defined an optimum size for the community in order to ameliorate concerns that the project area had become loose and of a density inappropriate for the physical space. Also, parallel to Perry's neighbourhood theory, the housing area was designed to have a rich interaction with other neighbourhoods and the city as a whole. Public open areas (such as parks, green spaces, playgrounds, etc.) were considered the backbone of this housing project. Additionally, the orientations of different spaces within the housing units were changed accordingly.

Example 1. Student Project by Yesim Kocaaga: This work aimed to sustain the local neighbourhood culture by moving the open meeting spaces to upper level public platforms, including the greenery around the housing units (see Fig. 8).

Example 2. Student Project by Elif Zekier: In this project, apart from the internal squares and streets necessary for sustaining the neighbourhood culture, upper level open corridors with greenery were held as the main focus, proposed as a means of encouraging socialization (see Fig. 8).

Figure 8. Different Project Examples of Sustaining the Neighbourhood Culture

6.2. Providing Integrity and Continuity within the Urban Fabric

The district, as one of the elements of the city's image, is defined as a medium-to-large section of the city, sharing an integral, continuous, common, and identifying character that can be sensed by the observer (Lynch 1960).

Within the context of this housing design problem, many projects tried to provide integrity and continuity within the urban fabric of this district.

Example 1. Student project by Ceyhan Fazlioglu: Ceyhan's project tried to create a housing design of a suitable fabric within the context of the silhouette, through a fragmented approach. It endeavoured to maintain a human scale rather than a monolithic scale (see Fig. 9).

Example 2. Student project by Muzeyyen Narman: The main aim of this project was to adapt to the existing topographic lines, as well as improve the links between the surroundings and the project area, considering the height, mass, and scale of the new design in relation to the existing fabric (see Fig. 9).
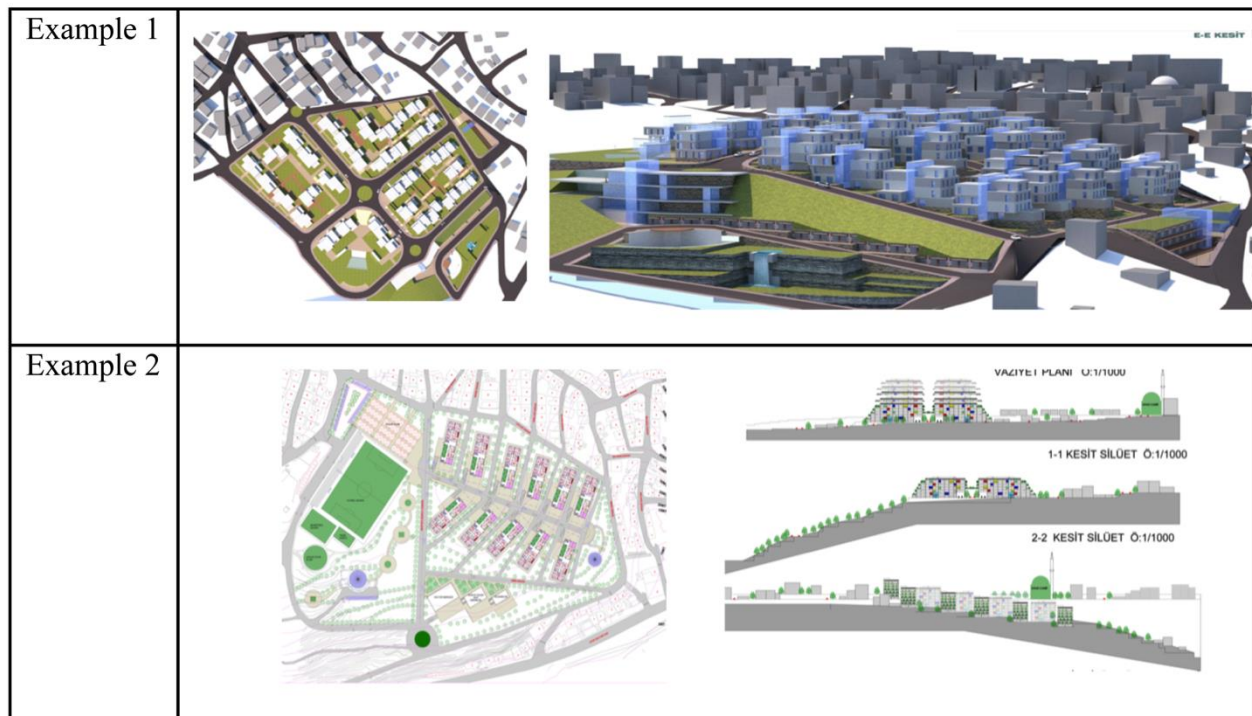
| Example 1 | |
| Example 2 | |

Figure 9. Different Project Examples of Providing Integrity and Continuity within the Urban Fabric

6.3. Supporting the Social Focal Areas within the Project Area

Urban public spaces have always played a central role in city culture (Madanipour 2003). In the contemporary city, the overall benchmark of success has become the quality of the social life that takes place in urban public spaces. Housing is another fundamental element of the urban fabric. However, residential projects should offer community spaces at which a heterogeneous mixture of people can meet, exchange ideas, and socialize. Projects today are regularly being resolved mono-functionally with excessive focus placed on the private sphere. As a result, the opportunity to enrich the collective sense of a place through the incorporation of common use is lost on a community (Herreros et al. 2006). By linking and integrating housing, leisure, work, commercial, and service facilities, residential projects contribute to the social relationships and public activities of its inhabitants. The need for mixed use spaces (with at least two, and preferably more primary functions) was one of the fundamental conditions of Jane Jacobs' thesis (Jacobs 1993;1961). Multi-family residential complexes should respond not only to housing programs, but also to spaces that can effectively be used for multiple activities. In parallel, Howard's "garden city" was also designed to emphasize social focal points as the main generator (Broadbent 1996). According to Lynch's definition of the five elements of a city image, nodes are strategic spots, intensive foci within a city or concentrations within a district (Lynch 1960). These may also be explained as centres of activity, a type of landmark, but differentiated from landmarks per se by being hubs of active function. Generally, landmarks are distinct visual objects, important elements of urban form that help people orient themselves in a city or identify an area (Spreiregen 1965). As Lynch states in *The Image of the City*, residents compose their impressions of a community's visual structure and character on the basis of what they see and remember as they move through the community, along its major pathways.

Example 1. Student project by Ahmet Bozkus: In Ahmet's project, the proposed mixed-use commercial node served as an attractive alternative pedestrian route; it became a lively neighbourhood centre, where a heterogeneous mixture of people could meet (see Fig. 10).

Example 2. Student project by Gozde Yurdakul: The public node was a continuous circulation route in this project. The space was designed to promote continuous public access and improve the integrity of housing units, open spaces, and public areas (see Fig. 10).

Example 3. Student project by Cem Cakaloglu: Cem's project created a pedestrian bridge as a public node that created a social interest above the street level and ended at a transparent cultural centre projecting over the valley (see Fig. 10).
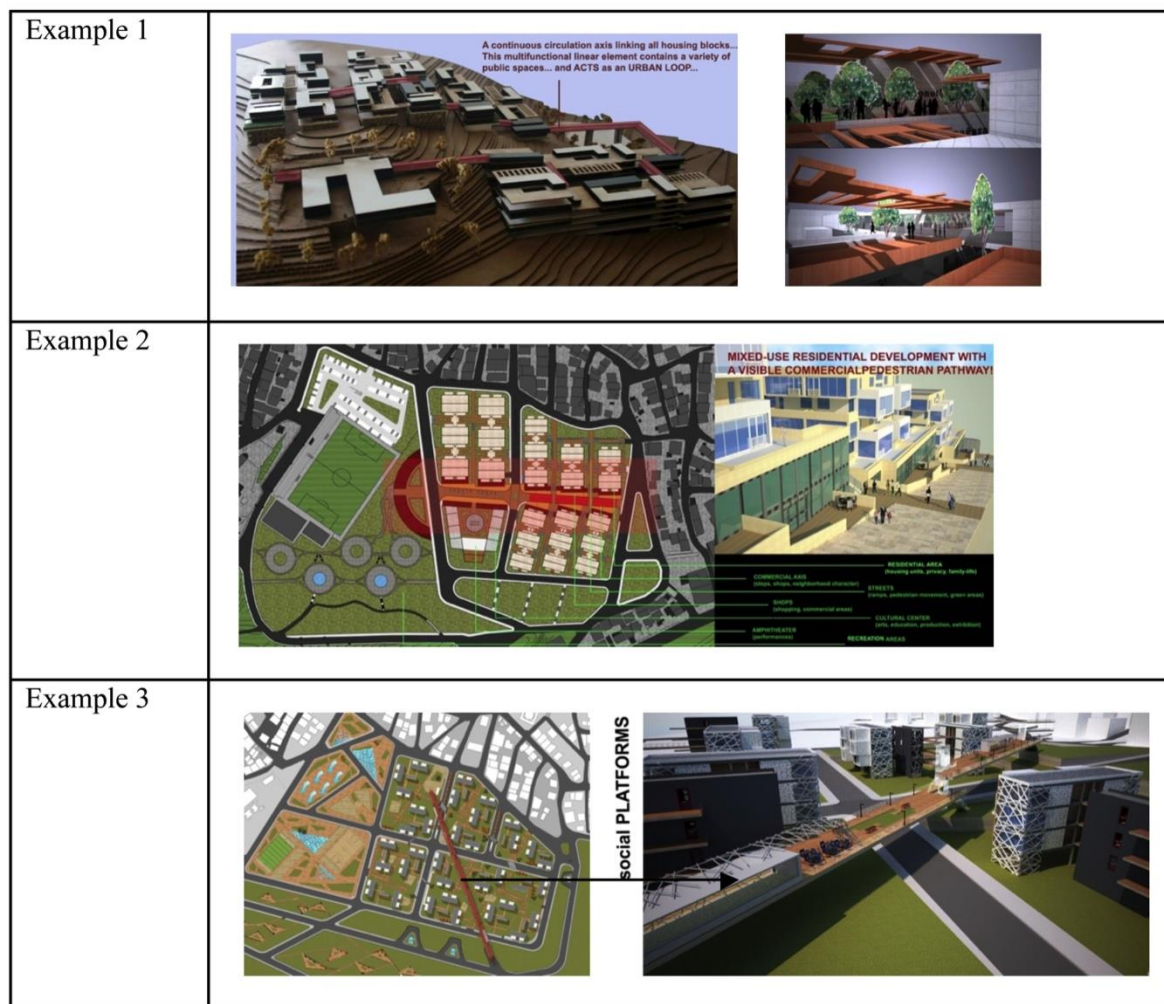

Fig. 10. Different Project Examples of Supporting the Social Focal Areas within the Project Area

6.4. Providing Collaboration on the Multicultural and Multi-layered Qualities of Social Structure

Social housing can serve as a catalyst for balance and diversity, but to do so it is essential that its practitioners recover the critical consciousness necessary to define architecture as a service with responsibilities to the community (Herreros et al. 2006). A multi-family residential project should become an integral part of the neighbourhood and provide accommodations for a heterogeneous mixture of inhabitants.

A contemporary residential project should no longer be expected to respond to a single user profile or program. Diversity of cultural and social characteristics, lifestyles, and family models is considered to be a significant parameter in successful design. Positively designed spatial enclosures accommodate a mixture of people and activities; the pursuit of such designs should be actively promoted (Madanipour 2003).

Almost all of the students in this studio designed housing for families across a range of socioeconomic backgrounds. They suggested alternatives that coincided with the changing household characteristics.

Example 1. Student Project by Canan Ganic: Canan's project included different housing types, sports facilities, leisure areas, shops, cafes, an open bazaar, and multiple green spaces. She suggested both large- and small-scale residential blocks. The monolithic blocks at the top were designed to serve as student housing. The pattern defined by smaller and more fragmented blocks was to be used by families with different household profiles (see Fig. 11).

Example 2. Student Project by Irfan Er: Irfan suggested a variety of plan layouts for different household profiles. The project combined these modules in various compositions to achieve a dynamic neighbourhood architecture (see Fig. 11).

Example 3. Student Project by Arda Donmez: Arda suggested housing alternatives to improve social integration in the area. Apart from this main focus, the project tried to improve links between the project area and its surroundings, as well as create architectural variety by varying building massing in ways such as by stepping back upper floors by using different housing types (see Fig. 11).
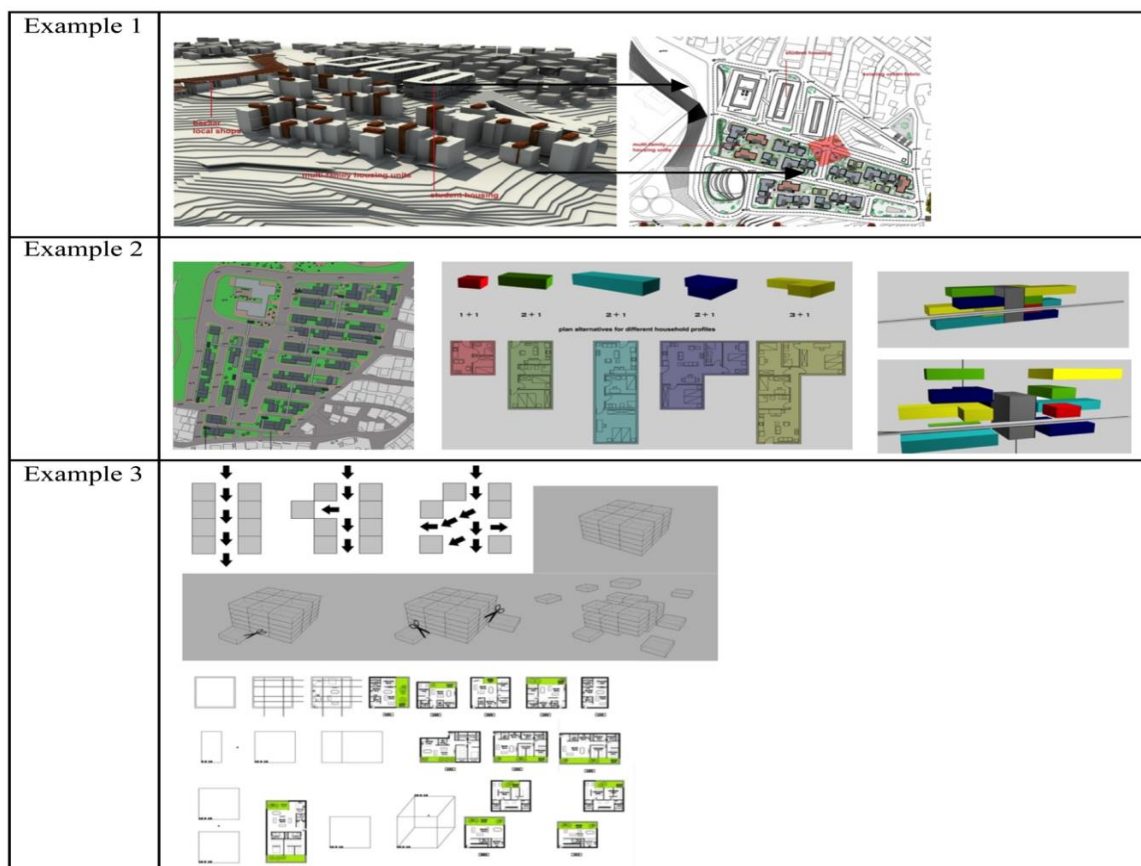

Fig. 11. Different Project Examples of Providing Collaboration with the Multicultural and Multi-layered Qualities of Social Structure

6.5. Accent in Green Urban Structures

Beginning with Camillo Sitte's "picturesque planning" of the late 1800s, and moving on to Sir Ebenezer Howard's "garden city" and Le Corbusier's "city in a garden" nearly all urban philosophers have given the utmost importance to greenery in their models of settlements (Broadbent 1996). Among other factors, the steep topographic quality of the project area brought a natural and strong emphasis on the importance of townscape design, especially in terms of the design of the silhouette. Within a framework initially and clearly defined by Cullen (Cullen 1961), a fundamental visual urban aesthetic approach was developed that provided another principle foundation to the students' works.

Example 1. Student Project by Asli Gunduz: Asli aimed to integrate the green corridors of the Kagithane Valley into her housing project. Within the context of an ecological housing design, extraverted living conditions were created together with greenery through green terraces and gardens, as well as an ecological bazaar (see Fig. 12).

Example 2. Student Project by Mehmet Demirli: Mehmet's project created social and public areas on the ground floor as continuously as possible, in an effort to retain the building block footprints and natural topographic conditions. The social interaction was to continue from the outside moving inwards, and ending at the houses (see Fig. 12).

Example 3. Student Project by Sercan Gul: Sercan concentrated on the disappearance of the green areas that in the past had characterized this district. He proposed an embedded mass-housing project that would leave the surface a continuous recreational green space (see Fig. 12).
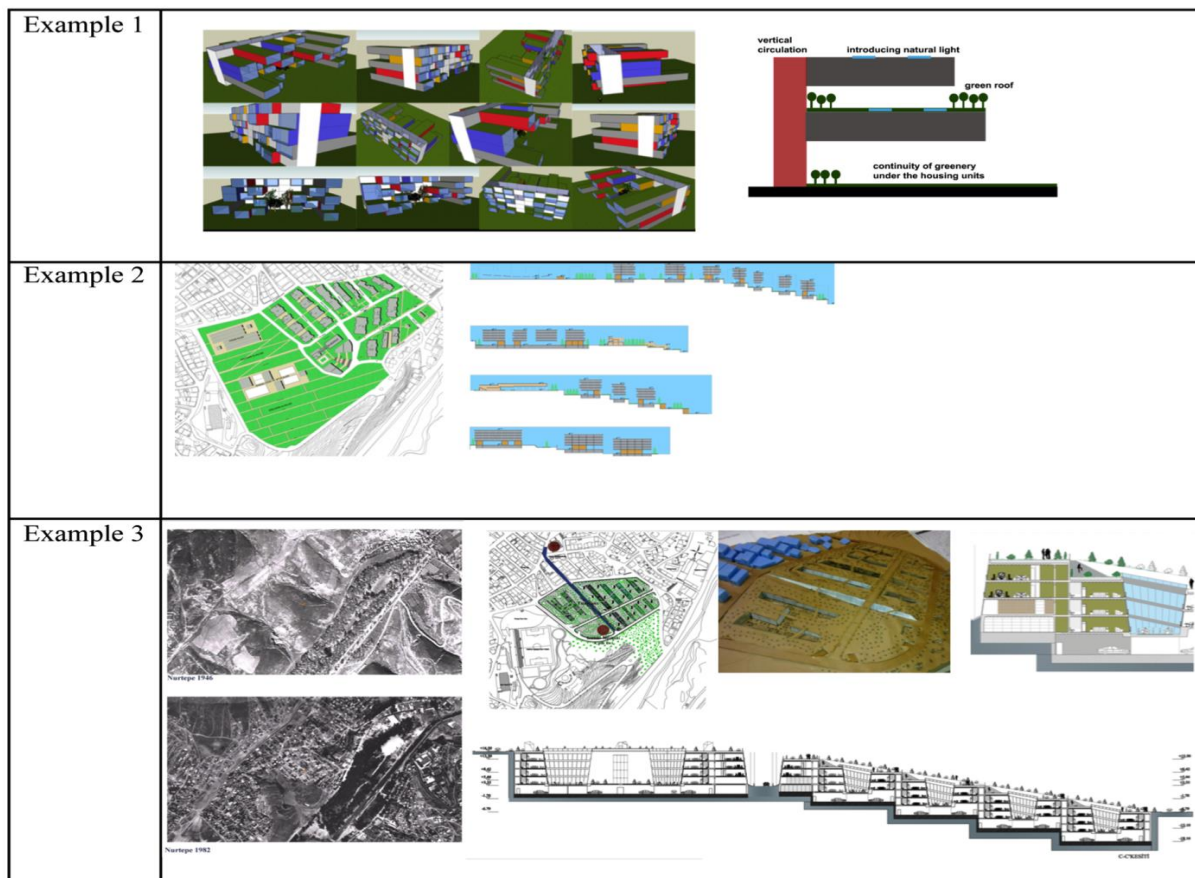

Figure 12. Different Projects Accenting the Green Urban Structure

7. Conclusion

Today the number of urban renewal projects is increasing all over Istanbul. One significant risk of these projects is a loss of the area's unique sense of place. Designing compact, creative, pedestrian-oriented, and highly-qualified neighbourhoods is a necessity if the character of the neighbourhood is to be retained. In this studio, students prepared five critical design approaches to creating mass housing that would be socially and physically integrated into the existing urban context. These approaches fell into the following categories: sustaining the neighbourhood culture, providing integrity and continuity within the urban fabric, supporting the social focal areas within the project area, collaborating with the multicultural and multi-layered qualities of social structure, and accenting green urban structure. These categories are valid for other urban renewal projects, in Istanbul and elsewhere.

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