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# Collective Residential Spaces in Sustainability Development: Turkish Housing Units within Co-Living Understanding

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**Abstract.** Housing models that target rather typical family structures are increasingly failing to meet the needs of the new social changes regarding the rapid urbanization due to the mass-migration to cities, the lack of affordable housing, and the adoption of the sharing economy practices. As an architectural counterpart of the social dimension of sustainable development, co-living is introduced as a connected way of living, enabling sustainable living practices through efficient use of resources and space while sharing consumption. With respect to this, adapted collective residential units (namely informal co-living environments) come into use in places where affording a house becomes a challenging aspect and the conventional residential units do not reflect the transforming social demographics and economy. The reflection of the requirements of changing social and economic structures on urban settings can be seen in Turkish houses as well. This research, accordingly, focuses on co-living environments in Ankara, Turkey that were transformed from typical single-family residential units by its residents. Through investigating these co-living spaces, it is aimed to contribute to the current understanding of co-living practices, explore the spatial, economic and social underpinnings of these living models, and their relevance to the sustainable development while presenting initial findings regarding spatial use that can be of guidance for future co-living design processes.

## 1. Introduction

Recent studies on sustainable design give way to the consideration of urban planning and small residential units together in architecture. The population growth and the increasing migration rates in urban areas lead to drastic changes in terms of social, economic and environmental aspects. The existing housing typologies have been losing their capacity in accommodating this increased quantity and density with the use of spaces and resources at the current rate. The architecture of single-family residential building typology is under transformation due to these changes in social structures and contemporary urban living practices. Since these changes are adopted differently in many social settings, the residential spaces take shape according to different social practices. Today, it is widely argued that the spatial functions of single dwellings and urban design principles are in need to be considered together in the pursuit of sustainable models for creating inclusive urban fabric, which meet the social and physical needs of all inhabitants [1]. It is necessary to address the sustainability issues through revisiting the existing practices of collective living and adapt them to contemporary cities, including various issues of site, feasibility, and funding [2]. As a part of the social dimension of sustainable development, co-living is introduced as a connected way of living, which enables sustainable living practices through the sharing and efficient use of resources and space.



Co-living, or co-housing, remains an emerging research field. Co-living mainly targets sustainability, affordability, creating commons, social inclusion, social innovation and architectural design [3]. Co-living is adopted as the new urbanist movement for housing and considered as a catalyst in urban development since it enables citizen participation, social networks, and new urban design practices [3][4][5][6]. The "co" corresponds to 'collaborative', 'communal' and 'collective', which indicates the involvement of a wide variety of practices and groups [7]. As explained by McCamant and Durrett in 1994, co-living is a form of collective housing with four main characteristics, which are having social contact, extensive common facilities, resident involvement, and collaborative living practices [8]. With respect to these characteristics, co-living aims at encouraging the sense of community by providing both common and private living areas in an interdependent way of sociability and network. The importance of architectural design that supports the community and supplement private areas is under focus along with the resident management and decision-making processes.

Co-living practices are usually based on the act of sharing (material and immaterial) towards collective living and a network of relationships with the wider neighborhood [9]. This relationship encourages residents to share daily responsibilities, community resources, skills, and work effort while providing a sense of physical security [10]. In other words, the importance of the new housing practices lies in their practices of cooperation, sharing and collaboration within and outside of the housing unit [11]. These new housing practices, including co-living, meet the need of current housing stock by collective forms of management within each housing unit and the neighborhood [12]. The close and supportive community is a result of the sharing-based nature of the co-living model, including carpooling, tool sharing, community clothes closets, libraries, and gardens. This alternative housing and neighborhood model encourages more sustainable residential models in terms of social, economic and environmental aspects of sustainability, and can be seen as a promising sustainable alternative to conventional housing.

At this point, it is important to state that sustainability issues and approaches in housing can no longer be reduced to the energy consumption as mainstream development tends to claim; instead, it calls for holistic approaches that deal with rather holistic complex challenges [3]. Sustainability needs to be discovered and elaborated conceptually and systematically through the focus on both sustainability dimensions (i.e. environmental, social, economic) and its interdisciplinary meaning [3][4]. Moreover, the alternative housing models are required to be examined in various scales as they indicate intentional sustainable communities on the local, urban and societal levels [13]. In general, for the purpose of providing a sustainable and non-consuming model, co-living works with the existing infrastructure that it is located, which includes the space, the commercial activity, and supply of electricity and water [14]. It reduces the amount of total living area, energy use, and waste production per person through the sharing of resources, along with the ecological cost and environmental damage caused by individualism, social stratification, and wasteful consumer habits [15][16]. Co-living also increases the access to shared products such as washing machines, cooking kits, and entertainment facilities, thus, the cost of living for residents is reduced as a result of the sharing of rent and services [10].

Co-living models vary in size, type of ownership, layout design, and priorities; yet, a number of common characteristics are as follows:

- Participatory process
- Intentional neighborhood design
- Private homes and common facilities
- Resident management
- Nonhierarchical structure and decision making [14]

These characteristics point to the need for design including social and architectural circumstances for co-living environments for a community and their particular architectural requirements. The level of interaction and overall well-being differs for each group, and therefore, architectural solutions should be considered to meet the needs regarding residents' privacy, security, territory definition, and the integration of people for each co-living environment individually [17][18]. By means of the possible solutions, co-living environments provide active and diverse communities that encourage social interaction with collective support [7], which presents the effects in reducing the isolation and

disconnection of individuals as compared to traditional housing typologies [19][20]. In the traditional housing typologies, spaces are separated from each other based on their functional properties and they do not aim to provide any common space for different communities. Co-living, then, can be considered as a viable alternative model in fulfilling social and cultural needs of the contemporary society.

Co-living environments are centered around shared values and objectives along with the balance between personal freedoms and the needs of the community and the right of others. To this end, a combination of public and private spaces is embedded into a single residential unit in order to support various spatial needs [14]. Yet, this combination should be carefully considered in order to increase the overall well-being, which depends on personal factors such as age, social and cultural background, financial situation, and expectations together with the architectural characteristics of the co-living unit [21]. Collectively, co-living aims at challenging these factors and overcoming the negative biases of sharing, and facilitating co-living as an applicable mainstream living practice [10].

In this respect, the main motivation in co-living practices is to create new ways of living that can fulfill the needs of socio-demographic developments such as ageing, the redefinition of gender roles, the environment and sustainability agenda, new lifestyles, and increasing ethnic diversity, especially in European countries [3][22]. Moreover, existing research conducted especially in English, France and Germany are based on these developments along with the socio-economic ones including economic and financial downturns, their impact on housing markets and income levels of the population [3]. For the cases in Europe, the technological change is also taken into account, including the increasing role of social media in self-organization, the rise of the smart city paradigm and the advances in sustainable construction and domestic/urban recycling systems [22]. These developments can be regarded as key drivers behind the alternative housing models as co-living.

The housing practices in Turkey are different from those of European countries regarding their objectives and values in accordance to its population. Turkey has shown a drastic population increase and high rates of urbanization in the last decades. According to the data of Turkish Statistical Institution (TurkStat), the population has increased from 67.803.927 to 82.003.882 between years 2000 and 2018, and it is expected to reach 86.907.367 in 2023 [23]. More strikingly, the rate of the urban population has also increased significantly from 65% (of the total population) in 2000 to 70,5% in 2007, and to 91,8% in 2014 [24]. The urbanization rates emphasize the need for residential buildings in urban areas in Turkey.

In spite of the high urbanization rates in Turkey, no stable housing market policy has been established by Turkish Government to date. The direct involvement of the public sector in Turkey in housing provision has become the major trigger since the early 2000s. The construction sector in Turkey has been considered as an important factor in economic growth and supported by the government accordingly [25]. Yet, the Turkish housing policies points to complex circumstances in the housing market (in the absence of welfare state measures for housing), which are private investments in residential construction, high rates of homeownership, a significant share of the private rented sector, the lack of a social rented sector, and a recently emerging mortgage finance system [25]. Since housing can be considered as an indicator of personal wealth, it is directly linked to the general economic condition of a country [26]. In order to strengthen the relationship between economic conditions and housing in Turkey, housing needs have been met sometimes through the banking system or the social security organizations, and sometimes through publicly owned institutions [27]. Since the system has been depending on the government's political preferences, it was not possible to improve consistent housing finance policies without making the private sector a large and permanent stakeholder [27].

In 1984, Housing Development Administration (HDA), Toplu Konut ve Kamu Ortakligi Idaresi Başkanligi (TOKI) in Turkish, is established by Turkish government, and it has defined its target group as low and middle-income families who are not able to own a residential unit in the existing market of Turkey. HDA has built 43.145 residential units between 1984 and 2002, and this number has reached 737.136 in 2016 [28]. It is aimed to have 7.560.000 residential units in Turkey until 2023, as indicated in HDA's five-year plan established in 2018. It is critical to note that the existing and recently constructed residential buildings primarily target nuclear families that a heterosexual couple and their children [29]. Yet, the current demographic structure in Turkey points to the growing need for residential

units not for nuclear families but the young population. Indeed, 16.1% of Turkey's population consists of young population, whose age range varies between 12 to 24 [30]. An increasing number of young population is preferring to live and choose to move to different cities, and the major reasons for domestic migration in Turkey are determined as education with 22.6% while business purposes follow it with 12.2% of the total immigrants [31].

Although the underlying motivation of HDA is to provide the required housing stock to low- and middle-income families, such an affordability crisis requires a comprehensive reconsideration of the financial and social circumstances for the provision of housing. When the focus is on young generation, the solutions are generally indecisive models such as flat sharing, which can be seen as an economic unit and a social arrangement to overcome the difficulties in accessing housing [3]. It is evident that the housing affordability problem in Turkey cannot be ignored or reduced to some measures to increase new housebuilding or to support home-ownership among low-income households [32]. To this end, housing policies need to be reconceptualized according to the target group rather than a speculative asset that constantly adapts the market conditions [33]. In other words, it is essential to redefine the housing problem of the country concerning housing production levels across the country, housing affordability among different household groups and in different regions, tenure composition, and safety and quality of life in housing and living environments [25]. Consequently, such policy deficiency leads to the lack of new interest on housing in Turkey and restrains the emerging co-living models and their innovative and radical potential to address the lack of affordable housing options. Without having a certain policy, it is not possible for residents to collectively create living arrangements in urban, sub-urban or rural areas that the local market cannot provide [34].

The increasing need for housing for the young population has paved the way to more affordable and socially sustainable housing practices such as co-living environments. However, the lack of available co-living environments in Turkey has necessitated the conversion of the existing residential units that were initially designed for typical family structures for co-living. As the initial definition of co-living refers to either purpose-built or re-use existing real estate that involve any number of households [34], the units that are acquired through adaptation (re-using existing units) are called "informal co-living environments" in this study. A number of shared rooms and outdoor spaces are typically created to allow for additional services or functions. Accordingly, informal co-living environments generally take shape through living arrangements in which two or more unrelated people share a residential unit especially for its economic advantages. The layout is initially designed for single-family residential units; yet, the spaces are transformed to accommodate co-living environments. These arrangements are not simply an alternate system of housing as Jarvis (2015) states, but they intend to invent new lifestyles based on equality and neighborly cooperation [35]. They usually share common perspectives towards their social and economic structures, including economic opportunities, more sustainable form of consumption, more participatory, equitable and socially sustainable living environments [36].

Accordingly, in this research, the informal co-living environments seen in Turkey are investigated in the 100. Yil district in Ankara. This focus area is selected due to its central location in the city and its close proximity to several urban hubs such as the Middle East Technical University hosting 30000-student and the nearby newly-established office districts such as Cukurambar and Sogutozu. The socio-economic characteristics of co-living remain under-researched; yet, it is important to understand the needs of the residents of co-living and the ways in which the spatial aspects are changed according to them. The informal co-living environments represents a commune, where people who are not relatives live and eat together, usually in a large one-family unit [37]. Although this model is usually not associated with special design implications, a number of criteria can be named such as feeling at home, norms and values of belonging and attachment among the residents [37]. In this respect, the 100. Yil district has been favored as a convenient neighborhood for co-living when the target group in Turkey is considered as students and early professionals. Accordingly, this research aims at investigating and understanding informal co-living practices in Ankara, Turkey in terms of the spatial, economic and social aspects.

## 2. Research Methodology

As the main research element, in-depth interviews with residents that live in informal co-living units in the 100. Yil district was selected. The participants are selected on the basis of their age and the number of people they are sharing the residential unit with. A total number of 7 participants volunteered to take part in the study in the age range of 24 - 30. 6 interviewees were born and raised in other cities, only to move to Ankara to study or work. Only the 6<sup>th</sup> participant was born in a suburban district of Ankara, but chose to the neighborhood due to the inconveniences in daily commuting.

The interviews were conducted within 2 weeks, which consist of open-ended questions. An interview guide was presented to the participants at the outset of the interviews, which helped maintain the research focus on. Interviews are held in Turkish, tape recorded, transcribed and documented in order to systematically evaluate the data. The interview questions are set up as a basic guide to all interviews as it is seen in the Appendix; however, participants were also encouraged to express their opinions on their personal co-living experience. After all the interviews were conducted, three main themes were identified and the data was categorized accordingly. To this end, the informal co-living environments were investigated in terms of their physical level, practical level and social level, as presented in the following sections.

**Table 1.** The Features of the Participants.

Participant	Age	Income	Graduation	Hometown
1	29	6-8k	2017	Osmaniye
2	25	6-8k	2016	Bursa
3	24	8-10k	2017	Zonguldak
4	26	4-6k	2018	Izmir
5	25	2-4k	2017	Izmir
6	25	2-4k	2016	Ankara
7	25	4-6k	2016	Mersin

## 3. Physical Level

At the beginning of the interviews, the participants were asked about the physical (spatial) use of the living units (i.e. The use of common and private areas and the daily activities) and the ways in which they changed it according to their needs.

### 3.1. Physical Adjustments

The use of a single-family living unit for co-living purposes is disadvantageous especially in terms of its architectural layout. In co-living environments, the level of privacy changes continuously for each space, which makes it difficult to assess their use for the residents. Since the residents are not able to change the architectural layout, either minimal adjustments are pursued or a code of conduct is followed to regulate the spatial use and increase the residents' comfort.

Regarding the physical adjustments and code of conduct, most participants (5) stated that they did no or minimal physical modifications in the common areas (such as the living room, kitchen, bathroom). In these common areas, the daily use and mandatory activities regarding cleaning or maintenance were stated to be regulated through verbal agreements between individuals. Generally, there was observed to be a certain lack of interest in customizing the common areas, either due to the limited amount of time spent therein, the low levels of expectations for these spaces, or the lack of financial resources.

When the private areas (i.e. the bedrooms) were on focus, some participants (2) stated that they made adjustments in order to make the room more functional and self-sufficient, such as the addition or removal of furniture. An interesting observation was that the participants equipped their bedrooms with amenities that are already available in the public areas, such as a kettle and a mini refrigerator. The reason was stated as the tendency to be able to remain the privacy in one's room when they do not wish to socialize with the other residents. This desire to increase the self-sufficiency of private spaces is explained by an interviewee as:

"... at first I had two beds. I removed one of them and put a table in its place. I created a very nice living space; I even bought a kettle and so forth. It became a very nice place where I could live without leaving the room. [...] It was a time when I had a lot of work and had to stay in my room for long hours. So, I guess I preferred a more isolated life."

When asked about physical alterations they would make if they had the resources, the participants showed a strong preference towards an increase in the sizes of private spaces. Indeed, the increase in private areas were at times preferred at the cost of decreased common areas. Additionally, the removal of basic necessities from fully public spaces was offered as a solution in order not to be obligated to use public spaces for accessing those basic necessities. Some participants stated the need for a separate public space for each occupant as well that are located far from private rooms. As such, each occupant could socialize separately with their own guests, without disturbing the other occupant.

### *3.2. Private & Public Area Use*

When the activities that the participants were engaged in the common areas were placed into focus, the answers showed variation. The activities include both individual and collective ones, such as watching TV, playing games, eating, socializing with common friends, studying, reading or napping. Yet, it is seen that the time spent in the common areas and the range of activities taking place herein are directly related to the common interests shared between the residents as explained in the following sections.

A critical aspect, as a participant expressed, is the discomfort experienced while having to pass through public areas (i.e. the living room) when trying to access rooms other than the private ones such as the kitchen or bathroom. Due to the mixed use of the common areas, the understanding of these spaces is blurred between private and public, and inconvenient consequences might occur frequently. Therefore, the lack of a buffer zone between private and common areas was found inconvenient. A spatial gradation from private to public is considered as a positive aspect of spatial organization. As one of the participants mentioned the use of a semi-private room and its advantages as follows:

"My room is both my study room and my bedroom. My roommate lives in his room with his girlfriend; therefore, they have a double bed. There is a third room that my flat mate and his girlfriend use for studying, but there is also another sofa in the room. There is also another bed and a PlayStation unit. Sometimes I got bored and go there for a conversation. This never happens in my room or their rooms, but we especially hang out in that third room with my flat mate and his girlfriend."

Although this part of the living unit is organized for the purpose of studying, they also arranged it specifically for the residents. The living room remains its position as the most public space while the bedrooms are the most private ones, this room provides another level to the private-common area spectrum and becomes one of the mostly preferred room in the living unit. To this end, it can be claimed that the alternative spatial uses with different privacy levels in one living unit is significant in order to provide effective and efficient use of spaces in co-living environments.

## **4. Practical Level**

In this section, the practical implications of co-living were investigated and the participants were asked about the economic aspects.

### *4.1. Sharing Economy Model*

When the participants were asked about the reasons why they chose co-living at the beginning, all participants stated the economic advantages as the most determinant factor. Since most of the participants were students that are not native to Ankara, the main motivation was to reduce rental fees without being exposed to any restrictions on social, time-related and spatial issues. Moreover, co-living allows to spare more budget for socialization as a result of rent sharing.

All participants stated that they adopt a sharing economy model. In general, the main expenses, such as the rent and the bills, are shared in half between the households. Yet, all participants stated that they do not have strict rules for other minor expenses, including food and beverages or cleaning supplies. At this point, the cultural codes are determinant in managing daily expenses as the participants underlined. Strict rules on minor expenses are considered as an impolite and greedy attitude due to the close relationships they have.

Co-living environments are expected to provide a wide range of services to use collectively in order to reduce time and financial resources spent for accessing them. Since informal co-living environments do not have this opportunity as they were initially single-family living units, the residents benefit from the neighborhood and even transform it into a city scale co-living infrastructure. With this respect, most of the participants underlined the advantageous position of the neighborhood. Since 100. Yil district is mostly occupied by the students or young professionals, a high number of services (i.e. food & beverage, moving expenses, repairman expenses, transportation) are accessible with low prices in the area. Due to the proximity to the university, the neighborhood provides a wide range of alternative solutions to daily issues and constitutes a collective culture regarding the daily routines of the residents. One of the participants also mentioned a 'stuff sharing system' via a social media platform that belongs to the 100. Yil district specifically. It is a system that allows one to access other residents' supplies that are not in use. This also shows the co-living environments requires larger scale practices in order to provide a strong collective living environment both in living unit and in the neighborhood. At this point, the location of the living unit becomes even more important for informal co-living environment since the reflections of co-living environment can be seen in both the living unit and the neighborhood scale.

## 5. Social Level

In the last part of the interviews, the social aspects of their lives were asked to the participants by means of the questions regarding social interaction, relationships between the residents and the ways in which they sustain the co-living system.

### 5.1. Social Interaction

In terms of social interactions, all participants compared co-living environments with dormitories and expressed their reluctance against the dormitory life even though it has similar advantages economically and socially. The participants stated that co-living environments are less restrictive in compared to dormitories in daily activities such as cooking and spontaneous social contacts whereas dormitories set limits to the use of space in terms of time restrictions and the lack of privacy. Furthermore, dormitories do not allow residents to choose the others whom they are going to live with, which constitutes a major advantage of co-living environments according to the participants. To this end, freedom of choice is underlined including choosing activities, uses of spaces, and residents. Accordingly, this freedom in co-living environments provides an additional concept that dormitories do not have, as one of the participants described as the feeling of "living in a warm, homely environment." He stated:

"I always consider the dorm as a place like a hotel you stay a week or so, just a place that you come and go without really living. It is like a temporary living area. Besides, you have to live with people that you do not even know, it is really difficult. [...] I can continue living like this, I can prefer to live alone, but I am sure that I never want to go back to the dormitory."

The feeling of belonging to the residential unit only occurs in co-living environments while living by oneself or in dormitories does not provide such domestic circumstances. The domestic structure of co-living environments is emphasized by two important characteristics; which are the spontaneous social interactions during daily activities pursued collectively with the other residents and the wider range of privacy levels between the spaces in a living unit.

The residents have higher levels of social interaction in relatively more public spaces in their living unit while maintaining their privacy in spaces such as bedrooms as a result of these characteristics. Some participants stated the interaction they have does not only refer to the relationship with the other



residents, but also their contacts on a larger scale. These participants are especially the ones who spend more time together in the public areas of the living unit. As a result, these participants are exposed to a highly interactive social environment as one of them explained as follows:

"Staying with someone is the best case in terms of the social aspects. Because when you're already with someone, you have a flat mate to talk to. Moreover, you can meet up not only your friends but also his friends and socialize with them. Living with somebody is the best possible social interaction in my life."

Social advantages of co-living environments are underlined by the all participants as long as the living unit provides different levels of privacy. The initial necessary impulse for co-living was reported the economic difficulties the participants had when they were students; yet, it is preferred to continue living in co-living environments in spite of the higher incomes that the participants have acquired currently. The reasons were reported as maintaining a high level of socialization and comfort that is provided by co-living.

### 5.2. *Maintaining Co-living*

This part of this study aims to understand the ways in which the participants maintain the co-living environments in their living units. When asked about the most determinant factors in the maintenance of co-living, the participants underlined two different aspects, which are common interests and common perspectives. Common interests mostly refer to residents' interest in something that they all interested in and share, including activities or topics that are applicable to all residents involved. Common perspectives, on the other hand, indicate the ways of thinking about living environment and experience, such as code of conduct, organization, rules.

Accordingly, four participants stressed the importance of having common interests between the occupants. Those participants were mostly the ones that spend a lot of time in the common areas with the other residents. The involvement in the common activities provides further social interaction in the living units for them. Moreover, these participants stated that the close social relationship between residents allows them to consider the living unit as an inclusive environment. Yet, the rest of the participants mentioned common perspectives as the most determinant aspect for co-living. The common perspectives allow the residents to consider the order of the living unit and its rules on basic issues (i.e. the tidiness and the hygiene of the living unit, the use of common areas.) The importance of common perspective is expressed by one participant as:

"You may have a lot of common interests, but if you do not agree on cleanliness, then you would certainly be unhappy and uncomfortable in that house. I'm extremely happy now, although we don't have so much in common."

Common perspective points to the difficulties that the residents may experience in the living unit since it initially leads to provide comfortable living environments for the residents. The participants who focused on common perspectives underlined that the social interaction is inevitable in co-living environments and there is no need to have common interests to increase that. Yet, since the living unit is the major shared entity, regulating it with common perspectives allows to maintain the informal co-living environments.

Nevertheless, the study shows that the participants tend to choose either common interests or common perspectives as the essential aspect of co-living since the architectural layout does not provide a gradual space spectrum between private and public: The participants that use the common areas frequently for social interaction prefer to have common interest and disregard the code of conducts on the regulations of the living unit while the ones that usually remain in the private areas such as bedrooms give priority to the common perspectives towards the main issues about the living unit.

## 6. Conclusion

This study aims to understand the need for co-living environments in Turkey with respect to the increased share of students and young professionals in urban districts. As the existing residential buildings only target families, these residential units are adapted by the young population, which is called “informal co-living environments.”

The investigation of the physical condition of informal co-living environments points to several architectural layout problems. The variability and the concentric layout of the spaces in terms of their privacy levels are challenging for the residents. The level of privacy of each shared space varies according to the time of the day or the presence of guests. This causes uncomfortable situations in the daily use of the public areas. Therefore, it can be concluded that it is important to provide different levels of privacy in the architectural layout of the co-living environments in order to create alternative spaces, which gives the necessary flexibility and efficiency to its residents. Otherwise, the use of spaces in the living unit only depends on a code of conduct between the residents and the maintenance may be difficult for co-living.

The main underlying motivation for co-living is identified as economic advantages. The sharing economy system (namely collaborative consumption) provides opportunities to reduce rental fees and other daily expenses while acting as a catalyst for social interaction between residents of co-living units. Although the initial motivation is the economic benefits of co-living, the residents continue to live collectively even after they acquire a stable income, in order to maintain the social interactions. Similarly, the negotiation is also an important factor in co-living, which allows residents to decide the use of spaces, the schedule of the activities therein, and the ones who are going to be involved. This also helps to create a peaceful environment in the living unit and provides a sense of belonging to its residents.

This study presents the current understanding of co-living in terms of its spatial, economic and social aspects. Through its advantages on increased social interactions, participatory environment, economical underpinnings and its position against over-consumption, co-living models can be seen as the architectural counterpart of the sustainable development. Informal co-living environments still have problematic aspects especially due to their spatial layouts; yet, the initial findings of this study can be used as guidance for future co-living design processes.

## 7. Limitations & Future Works

The limitation of this study is that only one district in Ankara, Turkey is investigated. Yet, since the 100. Yil district presents important characteristics for co-living, it would be considered as a starting ground for further studies that investigate the relationship between living units and the district that they are located (that is briefly adverted in this study). Therefore, the next step of this study could be the investigation of such relation in urban scale in order to distinguish the social and economic counterparts of such systems and conceptualize alternative living models in different urban infrastructures.

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## Appendix

**Table 2.** The In-depth Interview Guide.

Physical Level	<ul style="list-style-type: none"> <li>• What kind of changes did you make in private and common areas after moving in?</li> <li>• Which areas/rooms are shared within the living areas? Which ones are more private?</li> <li>• What kind of activities do you do in common areas?</li> <li>• Can you classify the areas in the house as private, semi-private and common?</li> <li>• Do you use outdoor spaces? Is this a need for you?</li> <li>• You live in a house designed as for family. What inadequacies/shortcomings do you see in such a residential unit?</li> <li>• Do you have suggestions to solve these shortcomings?</li> <li>• Can you compare your current life with the cases of living with your family and living alone in terms of spatial uses?</li> </ul>
Practical Level	<ul style="list-style-type: none"> <li>• What is shared or in common in house expenses?</li> <li>• How do you share the responsibility of the items used in common areas?</li> <li>• Do you consider the benefit of living together in terms of transportation? (Taxi/fuel sharing)</li> <li>• How do you arrange the expenses of food &amp; kitchen?</li> <li>• How much of your income is spent on food? How much is for socializing?</li> <li>• Can you compare your current life with the cases of living with your family and living alone economically?</li> </ul>
Economic Level	<ul style="list-style-type: none"> <li>• What kind of system do you have in decision making at home?</li> <li>• How much time do you spend together/apart?</li> <li>• Do you think that having common interests is important for living together?</li> <li>• How does having a roommate affect your need for socializing with others people?</li> <li>• How often do you go out in the apartment and neighborhood scale?</li> <li>• Can you compare your current life with the cases of living with your family and living alone in terms of the social aspects?</li> </ul>
Additional Questions	<ul style="list-style-type: none"> <li>• Do you think that living together is economically and socially advantageous? Why is that?</li> <li>• What are the advantages/disadvantages of living in the 100. Yil district?</li> <li>• What was the most important factor for you in what we have talked about so far? Why is that?</li> <li>• Do you plan to buy home/live alone in the future?</li> <li>• Is there anything you want to add?</li> </ul>

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