

**Spatial Change in Rural-Vernacular House:
Büyükkonuk Village (Kom-i Kebir),
Northern Cyprus as a Case**

Leyla Çınar Algül

**Eastern Mediterranean University
February 2023
Gazimağusa, North Cyprus**

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Leyla Çınar Algül

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

**Doctor of Philosophy
in
Architecture**

**Eastern Mediterranean University
February 2023
Gazimağusa, North Cyprus**

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Ali Hakan Ulusoy
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Doctor of Philosophy in Architecture.

Prof. Dr. Rafooneh Mokhtar Shahi Sani
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Doctor of Philosophy in Architecture.

Prof. Dr. Özlem Olgaç Türker
Co-Supervisor

Prof. Dr. Türkan Ulusu Uraz
Supervisor

Examining Committee

1. Prof. Dr. Pelin Dursun Çebi

2. Prof. Dr. Özlem Olgaç Türker

3. Prof. Dr. Ayşe Zeynep Onur

4. Prof. Dr. Hıfısiye Pulhan

5. Prof. Dr. Asu Tozan

6. Prof. Dr. Hülya Turgut

7. Prof. Dr. Türkan Ulusu Uraz

ABSTRACT

Rural-vernacular houses are shaped in line with the needs of the physical and sociocultural environments and socioeconomic factors; therefore, they are inevitably subjected to accelerating change over time. From this point of view, this study aims to focus on Cyprus, as a quite interesting context, and explore the spatial change of rural-vernacular housing. In this respect, in the first place, the aim is to introduce basic housing typologies supported by unique spatial use. Correspondingly, it is targeted to identify and discuss the spatial differences between housing typologies that have adapted (adjusted) to the change and housing typologies that have transformed losing their authenticity due to change. Within the scope of this study, Büyükkonuk Village (Kom-i Kebir), has been selected as the case study due to the existence of rural-vernacular architectural characteristics of Cyprus in the village. The majority of the houses in Büyükkonuk village were built mainly by Turkish and Greek Cypriots before 1974. Currently, these houses are used by Turkish Cypriots and Turks that emigrated from Turkey after 1974 and possess Turkish Cypriot citizenship. It has been observed that, due to the changing living conditions and user profiles, the houses face spatial and functional changes. Within the residential texture of the village, housing units displaying identifiable changes were selected among the three most common types of Cypriot rural-vernacular residential architecture. In this context, houses with ‘Units Without Hall’ are composed of closed spaces located in the open space ‘courtyard’; again, houses with ‘Units with Inner Hall’ are composed of closed and semi-open spaces and houses with ‘Units with Outer Hall’ were chosen. 10 houses were selected to represent each of these three basic housing types, and a total of 30 original plans and 30 changed plans were examined within the scope of the study. A space syntax

analysis model has been used in order to compare the original spatial organization of the houses with their current changed state. The field study, including the identification of the spatial organization of the selected houses, was also supported by observations and interviews with the residents of the buildings.

Keywords: Cyprus, Rural housing, Change, Space organization, Space Syntax

ÖZ

Yöresel-kırsal konut, içinde bulunduğu fiziksel ve sosyo-kültürel çevrenin gereksinimleri doğrultusunda ve sosyo-ekonomik faktörlere göre biçimlenmekte; kaçınılmaz olarak da giderek hızlanan bir değişim geçirmektedir. Buradan hareketle çalışma, oldukça ilginç bir bağlam olan Kıbrıs'a odaklanmayı ve yöresel-kırsal konutun mekânsal değişimine bakmayı amaçlamaktadır. Bu doğrultuda, öncelikle özgün mekânsal kullanımın desteklediği temel konut tipolojilerinin tanıtılması amaçlamakta ve bağlı olarak değişimlere uyum gösteren konut tipolojileri ile değişimin etkisiyle özünden uzaklaşıp dönüşüm geçiren konut tipolojilerinin belirlenmesi ve mekânsal farklılıklarının tartışılması hedeflemektedir. Çalışma kapsamında, alan araştırması için, Kıbrıs'taki yöresel-kırsal mimarinin özelliklerini günümüze kadar taşıyan Büyükkonuk Köyü (Kom-i Kebir) seçilmiştir. Buradaki konutların ağırlıklı olarak 1974'ten önce Kıbrıslı Türk ve Kıbrıslı Rumlar tarafından inşaa edildikleri; bugün Kıbrıslı Türkler ve 1974'ten sonra Türkiye'den göç eden ve halen Kıbrıs vatandaşı olan Türkler tarafından kullanıldıkları; değişen yaşam koşulları ile değişen kullanıcı yapısına bağlı olarak mekânsal ve işlevsel olarak bir değişim içinde oldukları gözlenmektedir. Köy konut dokusu içinde, Kıbrıs yöresel-kırsal konut mimarisinde en yaygın görülen üç temel tip konutlar arasından değişimin tespit edilebildiği konutlar seçilmiştir. Bu bağlamda açık mekân 'avlu'da konumlanan kapalı mekânların oluşturduğu 'Sündürmesiz' (Units Without Hall-UWH) konutlar, yine avluda konumlanan kapalı mekânlarla yarı açık mekânların oluşturduğu 'İç sofalı' (Units with Inner Hall-UIH) ve 'Sündürmeli' (Units with Outer Hall-UOH) konutlar seçilmiştir. Bu üç temel konut tipini temsilen her tipten 10 adet konut seçilmiş ve toplamda 30 orijinal plan ile 30 değişmiş plan çalışma kapsamında incelenmiştir.

Konutların orijinal mekânsal organizasyonu ile bugünkü deęişime uğramış durumunu karşılaştırmak amacıyla, mekân dizimi analiz yöntemine başvurulmuştur. Seçilen konutların mekân organizasyonlarının tespitini içeren alan çalışması, gözlemler ve kullanıcı ile yapılan görüşmelerle de desteklenmiştir.

Anahtar Kelimeler: Kıbrıs, Kırsal konut, Deęişim, Mekân organizasyonu, Mekân sentaksı

DEDICATION

I would like to dedicate this thesis to my daughter.

‘Türkan Algül’...

ACKNOWLEDGEMENTS

Before anything else, I owe a special thanks to my esteemed supervisor Prof. Dr. Türkan Ulusu Uraz, and my co-supervisor Prof. Dr. Özlem Olgaç Türker for their most valuable encouragement, contribution, and efforts on every step of my dissertation. I will never forget the help, support, and patience of my teachers. I am eternally grateful to both of them.

The journey to complete this Ph.D. thesis is marked by a series of hardships, depression, demotivation, and obstacles that brought me to the verge of giving up. However, through persistence and never-ending encouragement, I am finally able to complete this study, albeit taking much longer than originally planned. I would like to convey my gratitude and utmost indebtedness to my supervisor Prof. Dr. Türkan Ulusu Uraz and my co-supervisor Prof. Dr. Özlem Olgaç Türker for your patience, tolerance, and confidence in me. Your opinions, guidance, and encouragement are part of the reason behind the completion of this research.

My gratitude also goes to my valuable monitoring committee members Prof. Dr. Hıfsiye Pulhan and Prof. Dr. Asu Tozan for their valuable input during my Ph.D. process. Also, I want to thank valuable external jury members Prof. Dr. Hülya Turgut, Prof. Dr. Zeynep Onur, and Prof. Dr. Pelin Dursun Çebi for their valuable time for evaluation and their constructive comments.

Also, I would like to thank my friend Emine Salman, who is one of the residents of Büyükkonuk village who helped me tremendously with the study area, especially while taking measurements.

Traditional and rural-vernacular architecture has always been a great part of my interests highly likely as a result of living in adobe housing within the countryside since childhood. As a result of growing up in a rural house, knowing and feeling how healthy, warm, and peaceful rural-vernacular houses are I feel privileged to be able to share this special joy with everyone. Thank you to everyone who made it possible to feel this warmth and peace.

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Chapter 1

INTRODUCTION

Rural-vernacular house, as a continuity house unit, generally accommodates a great ability of changing, transforming, and adapting features in both time and space. This plays a crucial role in cultural continuity and survival, by making the home environment more suitable and supportive for the users. It is important to note that the form and spatial structure of the dwelling in general tend to change rather constantly and slowly when considered historically. However, changes seem to happen more suddenly and rapidly today, especially in countries under the significant impact of major social and even political changes such as colonisation, westernisation, and globalisation. The rules and criteria behind this process usually look implicit and informal whereas the rules in vernacular dwelling form are explicit and clear due to the vast amount of research enriching the field. Obviously, the subject still deserves more investigation and this study intends to search and identify such rules related to constant and slow or rapid and sudden spatial changes by analysing the data collected from the fieldwork.

1.1 Introduction to the Research Field

Starting from the 1950s modernization became widespread in developing countries, which accordingly caused a strong change in social and environmental dimensions. While this caused a kind of uniformity in cities and urban dwellings, in rural-vernacular settlements, depending on the change in construction methods and lifestyles and expectations of the families, the original form and spatial structure of the traditional housing changed and gradually deteriorated (Eskicumalı, 2003; Şenol and

Er Akın, 2011). On the other hand, this process can also be defined as a phase in which the housing and the user mutually affect and change each other and thus adapt to each other (Dalkılıç, 2008). Rural–vernacular housing is different from other housing traditions; since it changes, evolves, and adapts to the conditions by producing sub-types, thus preserving its existence and continuity. From this point of view, this study aims to focus on Cyprus, which is quite interesting in this regard and targets to investigate the spatial change of rural-vernacular housing.

In this context, the meaning of space and house have been clarified in the following paragraph within the framework of residential living space, the use of spaces as a lifestyle and the user relationship to these spaces.

Rapoport (1969), defines housing formation as the interaction between human and physical environment. In such a case, the interaction is between the building environment's components and humans' components. Therefore, biological structure, social organization, worldview, lifestyle, social and psychological needs, individual and group needs, and physical needs are in interaction with climate, settlement, materials and technology and the physical environment.

Space is discussed in various studies, however, a basic description can be that it separates people from the environment to a certain extent. Space is necessary for the continuation of human actions in a wide framework and its boundaries can be perceived by the observers. Space is the subject of the architectural profession, and at the same time, the only indispensable quality of an architectural product is the basic condition that creates an architectural product (Hillier & Hanson, 1984). Space as a social and cultural structure has been the subject of much research in the field of

architecture. Space is more than a physical cover in which individuals or societies perform various actions. Space is a part of the cultures of societies and lifestyles. It includes various meanings depending on the changes they have undergone in social structures. These meanings live in a spatial system and transmit all the characteristics of the individual to the space. Hillier and Hanson define human societies as spatial events. First, society organizes people in space depending on their relationship with one another. Then, the human being affected by the physical environment of the society provides the spatial order (Hillier & Hanson, 1984).

In its simplest definition, housing is the physical structure that houses people, in other words, it provides accommodation to people and it is where people's private lives take place. Based on İmamoğlu's statement, for man, home is not just a place of shelter, but a window through which he looks at the world throughout his life; it is a corner where he watches the universe, a home he owns and reflects himself on. The foundations of the social, psychological and cultural dimensions of life are mostly laid in houses, and their structures are built in houses. The degrees of trust and fear, love and unlove, sincerity and solidarity are determined in homes and spread to societies and the world from homes. The home is a subjective personal place and different people in society have different images of their understanding of the home. The physical dimension of the concept of home, which includes both physical and cognitive dimensions, is quite limited compared to its other dimension (İmamoğlu & İmamoğlu, 1996). According to Lawrence (1987), the house is a place to escape from society, which has individual and social functions and is an indicator of the position and dignity of the individual in society (Lawrence, 1987, p. 117).

According to Gür (2000), when we look at housing historically, housing is an organized pattern of communication, interaction, space, time, and meaning. On the one hand, it reflects the characteristics of the ethnic group to which it belongs, its lifestyle, behavioural rules, environmental preferences, images, and time-space taxonomies (hierarchical grouping, typification). On the other hand, it is the user's image of its essence, it has a tendency to prove and express itself, thus its design, equipment and form reflect the personality and privilege of the individual (Gür, 2000, p. 11).

The importance of housing research is to meet the needs of global mobility in a healthy and qualified manner, to better understand the demands of different subcultures in the same society, and to please everyone in this type of space that accommodates different age groups. In addition to these, it can be said that it is to ensure the inner peace of the society, to provide economy by delaying physical, social and technological obsolescence, to give identity to the environment by increasing diversity inside and outside the house, and to teach new things to the observer.

In this frame, as also cited in Dinçyürek (2002), many writers (e.g., Rapoport, Lawrence, Oliver, Glassie) point out the particular importance of the locality in vernacular architecture. Vernacular architecture is the physical expression of the cultural thought and everyday experiences of the inhabitation. Additionally, the vernacular tradition is the direct and unselfconscious translation into the physical form of a culture, its needs, and values – as well as the creativities, desires, dreams, and passions of people (Dinçyürek, 2002, p.17).

Accordingly, rural-vernacular architecture can be summarized as the continuity in the co-built environmental culture that is socially produced, adopted, and transferred to

the next generation. In addition, rural-vernacular housing is in a constant state of change and thus preserves its continuity. The change inherent in this tradition is classified as changes that occur in the long-term which are continuous and slow, or changes that occur in the short-term which are rapid and sudden (Rapoport, 2005). In this context the study generally focuses on the relationship between rural housing and change, investigates the current change in the spatial character of Cyprus' rural-vernacular housing types, and consequently aims to reveal how and at what level the continuity is present.

The village of Büyükkonuk (Kom-i Kebir), chosen for the study, is one of the vernacular settlements that has preserved the characteristics of rural architecture without much deterioration compared to other villages in Cyprus. Through this example, it is worth investigating the dramatic changes that rural-vernacular housing has undergone in the process which began with the division of the island and the accompanying migration waves. From this point of view, it is expected that Cyprus' village dwellings may be affected by the rapid/sudden changes that occurred in line with the needs of new users who immigrated, as well as constant and slow changes that took place over a longer time period in line with the need of the users resulting in numerous spatial changes.

Within the scope of housing research, there have been many different scientific approaches to urban and rural housing. The different scientific studies mentioned below, differ in terms of their approach to housing research and their content. Housing has an important place in studies on human-environment interactions and has a history of half a century. The behaviour and structure of human beings who interpret interactions as dynamic and adaptive processes affect the organization of the

environment in the environmental model. Due to this effect, the environment also has effects on human behaviour. At the same time, each is changed and shaped by the other “Altman, 1975; Canter et al., 1975; Proshansky, Lttelson and Rivlin, 1976; Rapoport, 1976, 1980; Lavin, 1981; Maxwell, 1983; Gür, 1985, 1988” (Gür, 2000).

Based on Gür (2000)'s statement, it can be pointed out that the most frequently used housing research types when investigating the interaction between housing and human behaviour were: Cultural archaeological remains and rural housing (Rudofsky, 1964; Rapoport, 1969, 1970; Prussin, 1970; Oliver, 1975; Denyer, 1978; Duly, 1979; Sanders, 1990; Benjamin, 1991). Within the scope of vernacular dwellings (Megas, 1951; Stahl and Henri, 1976; Cohn, 1979; Chapelot and Fossier, 1980; King, 1980, 1984; Lawrence, 1983; Noble, 1984; Oliver, 1987; Dinçyürek, 2002), traditional dwellings that are still in use (Keys and Wener, 1980; Oxman and Carmon, 1986; Giuliani, 1987; Bonnes, Giuliani, Amoni and Bernard, 1987; Kent, 1991; Kaitilla, 1993; Shoul, 1993, Tozan, 2000; Pulhan, 2002; Dinçyürek, 2002; Türker, 2002).

As it is known, rural-vernacular houses have been explained by many people. Rural-vernacular architecture emerged in the unique conditions of the Pre-Industrial Period (Agricultural Age). Rural architecture, which started to disappear with the Industrial Revolution that took place in the 19th century, was shaped according to the needs of the local people, and its users, with the technique, material and knowledge provided by the era and environment in which it was created. It is a cultural phenomenon that reveals the lifestyle, social relations, production and consumption patterns, beliefs and traditions of the society that created it in the simplest and most local way (Tozan, 2000; Pulhan, 2002; Dinçyürek, 2002; Oliver, 2003; Davulcu, 2009, Çekül Foundation, 2012, Eltahir & Hamid, 2012).

According to Rapoport (2005), this formation is a completely need-oriented process that includes cultural and social factors alongside others. In addition, rural architecture is expressed by different names in written sources, such as regional, local architecture, folk building art, vernacular architecture, spontaneous architecture, agriculture era architecture, anonymous architecture, etc... (Papoport, 1990, Oliver 1997, 2003, 2005, 2006; Tozan, 2000; Pulhan, 2002; Dinçyürek, 2002; Türker, 2002; Sezgin, 2006). Rural housing is different from other housing traditions since it changes, evolves, and adapts to the conditions by producing sub-types, thus preserving its existence and continuity.

These houses are also called ‘architecture without architect’ (Rudofsky, 1964), ‘housing without houses’ (Hamdi, 1995), ‘vernacular dwellings’ (Oliver, 2003), or ‘buildings without architects / everyday architecture’ (May and Reid, 2010), are defined as “a process that is transferred through thought patterns and actions of the builders, tradition and customs, in a master-apprentice relationship, orally from one generation to the next without being written, drawn and documented” (Aran, 2000, p.120; Şenol & Er Akın, 2011, p.150). Oliver (2003) suggests that all rural architectural forms are built to meet certain needs, to accommodate the values, economies and lifestyles of the cultures that produced them.

Within the framework of many extensive and comprehensive studies on houses concerning the change/transformation of rural-vernacular houses and how they continue their existence, it is seen that village life which does not change as fast as the city, and rural housing architecture, which is not the product of a planned process, are more affected by these changes and it is concluded that this effect is more clearly manifested in its spatial setup. The adaptation of rural housing to the changes also

helps the sustainability of rural housing. Within the scope of sustainability, the modularity and linear structure in the rural housing formation of Cyprus allows the users to be more flexible under the effect of the changes, and accordingly, it also ensures the sustainability of the spatial setup (Dinçyürek & Türker, 2007).

1.2 Problem Definition

Rural-Vernacular house, as a continuing dwelling unit, generally accommodates a great ability to change, transform, and adapt its features in both time and space. This plays a crucial role in cultural continuity and survival, by making the home environment more suitable and supportive for the users. It is important to note that the form and spatial organisation of the rural-vernacular dwellings generally tend to change rather in a constant and slow process.

However, changes seem to happen more with more sudden and rapid processes today, especially in countries under the significant impact of social immigration and political changes i.e., colonization, westernization, and globalization. The rules and criteria behind this process usually look implicit and informal, whereas the rules in vernacular dwelling form are explicit and clear due to the vast amount of research enriching the field.

As a result of these different processes, stylistic changes and typological differentiations are observed in both urban and rural dwellings. The residences that have been changed by the users are due to the user's social expectations or the residence's inability to satisfy the needs of its users in particular. This is the case in the rural village life observed in Cyprus. The fast-changing circumstances and developing technological era that we live in, affect the lives of people, and parallel to this, is the

influence that these changes have on the interior space of the housing. Especially as a result of immigration especially before and after 1974, there have been considerable changes in the rural-vernacular houses. From this point of view, this study focuses on Cyprus, in order to investigate the spatial change of rural-vernacular housing.

1.3 Aim & Research Questions

The study aims to reveal the changes in the spatial organization in terms of functional-semantic dimensions of housing within the scope of the original spatial use of the rural-vernacular residential architecture in the modernization process based on today's rapid change processes.

The village of Büyükkonuk that has been selected as the application area reflects the general characteristics of the rural-vernacular Cypriot residential architecture and includes the changing new spatial organizations of rural housing quite widely. Among the rural-vernacular houses in Cyprus, the most common and basic types, 'Units Without Hall' (Sündürmesiz), 'Units with Inner Hall' (İç Sündürmeli), and 'Units with Outer Hall' (Sündürmeli), were chosen for the research. Examples of the research include those where additions and changes are detectable. In this context, the aim is to define at what stage the effect of the existing main type is constant/slow or rapid/sudden spatial change as a result of the additions coming from the rural-vernacular housing plan feature suitable for change/transformation and to determine the results of this change/transformation as a result of new interventions made to its main form. Then, it is expected to indicate whether there are new types and plan features.

Parallel to this, it aims to determine sustainability continuity by examining the change and transformations made, how housing typologies are affected by the change/transformation process, and what the sustainability role of the courtyard space within the general space organization model is. In the study, answers to these research questions listed below were sought with the analysis and determinations made on the original and changed version of the plans of 30 rural-vernacular houses examined in the Büyükkonuk village of North Cyprus. The main research questions are defined as;

1- How did the original spatial character organisation of the rural-vernacular residences, which contains the main purpose of the study change?

-What changes are observed in the open and semi-open spaces in the changed examples and their position in the space organization, whether their functions have changed or how they have changed?

-Which type of the three different rural-vernacular house types has changed less or adapted more with?

2-How did the location of original rural-vernacular houses within the site, affect the kind of change?

-Is the location of the original rural-vernacular homes on the site a strong factor in making the change?

3- Is continuity provided in the changed rural-vernacular houses and connections between their interior space?

-What are the new space types and what are the new space connection types?

-Which types of space are more common in changing houses?

4- Do the basic functions of the rural vernacular houses continue in the same space organisation in the changed houses? Did they become more private (segregated) or less private (integrated)?

1.4 Research Method & Limitations

In this study, the rural-vernacular houses of Cyprus are analysed in terms of spatial configurations within the typological approaches. The village chosen for research is Büyükkonuk village.

In this study, complementary qualitative and quantitative research methods were used. In the thesis, the qualitative research methodology has been mainly sectioned into four parts as described below, whereas the quantitative research method covers the space syntax analysis method of the thesis (Figure 1.1).

(1) literature survey: The literature was searched for information and general studies about the rural-vernacular house of Cyprus. In order to form a group of questions, detailed research has taken place to show the original space organisation and new space organisation of selected rural-vernacular houses.

(2) measuring and drawing: Measured drawings, observations, and examinations were made for each house and its site, one by one. Also, the original plans of the houses were drawn in line with the resident's explanation. Moreover, all hand drawings were transferred one by one, into a computer-aided drawing (AutoCAD) software.

(3) Interview, observation, and investigation: Several interviews have been carried out with the users of the selected sample houses, to find out the socio-cultural background of the changes made to the dwellings. In this framework, information was collected on families such as where and when did they come to the village? What were the changes they have made in the dwellings and the reasons for those changes? etc.

(4) Photographing: Each house's change, environmental relations, and locations are obtained in the form of photography and indoor and outdoor photos of each house were taken.

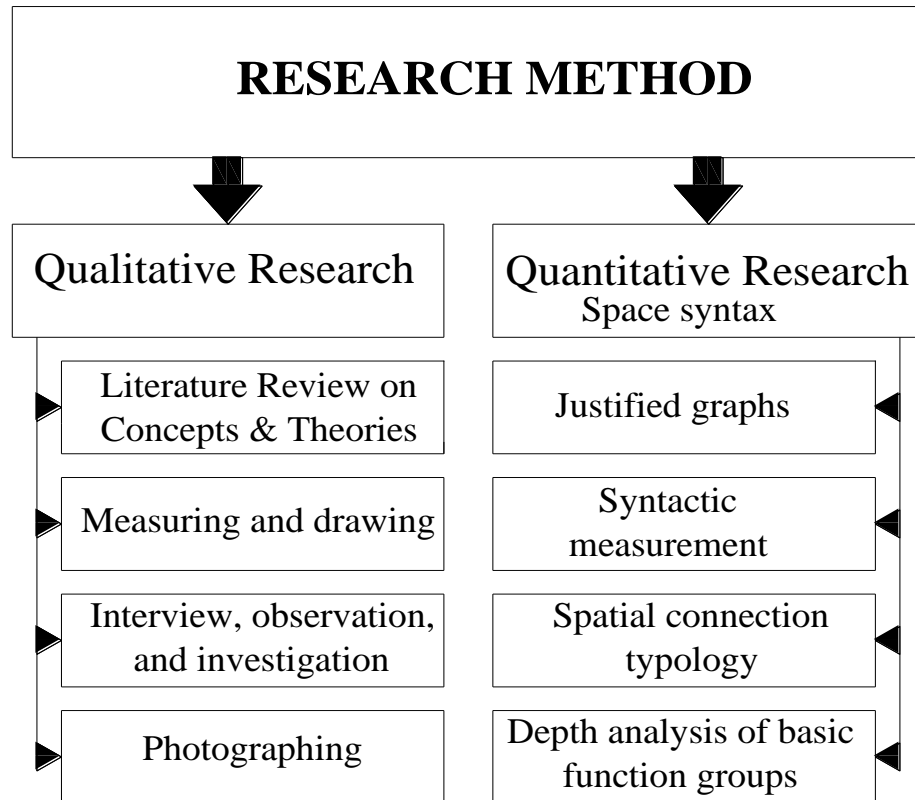


Figure 1.1: Research methodology of the thesis (Designed by the author)

As a result of the above-mentioned qualitative research sections, the space syntax method has been used for the study as a quantitative research method. Space Syntax theory and method is a graphic-based analytical architectural theory and a morphological analysis method that examines the interaction of space organization and social changes. The analysis method is used in many areas such as architecture, interior architecture/design, urban design, landscape architecture, and planning, as well as in branches of archaeology, anthropology, transportation, information technologies, urban and human geography, and informatics.

In this direction, the selected rural-vernacular Cyprus houses were examined through the space syntax analysis method. Within the scope of the study area, both the rapid/sudden and also constant/slow changes experienced by the rural-vernacular houses and the reflection of the lifestyle of the society on the spaces were analysed through the existing examples, and the relations between the space and the user were emphasized. It has been investigated whether space in the changed examples maintains their position in the space organization, whether their functions have changed or how they have changed.

These concepts, which constitute the main discussion area of the study, reveal the way the users use the space in line with the accessibility based on user movement and user needs. The most important reason for choosing the space syntax method for the study is that it is an important tool used to determine the spatial relationships of houses with numerical data concretely, through the analysis techniques used. In this sense, it aims to contribute to similar studies in housing and to use the space syntax technique more frequently. In such a wide, and multi-dimensional study the limitation needs to be properly defined to achieve accuracy. In this direction, with this method, analyses were made by the following steps (Table 1.1).

Table 1.1: Steps of analyses in the methodology of the thesis

Basic Types of Rural-Vernacular Houses:		
Application of space syntax	Categories of subtypes	Documentation of spatial connection types
Step 1: Measured drawings of the selected houses	Step 1: Documentation of the location of the houses in the plot	Step 1: Available original space connection types
Step 2: Justified graphs -Original plans -Changed plans	Step 2: Comparison of original and changed houses according to their location on the plot -All original plans with site - All changed plans with site	Step 2: New types of space connection types
Step 3: Calculation of the integration values -The most integrated spaces -The most segregated spaces		Step 3: Analysis of change of space connection types -Original space connection types -Changed space connection types -New space connection space types
Step 4: Calculation of the basic differentiation factor values of the original and changed house -Strong spatial structure -Loose spatial structure		Step 4: The change of basic functions in spatial organisation

1.5 Conceptual Framework of the Thesis

In this study, the conceptual framework aims to define the main concepts and methodologic approach of the study and reveal their relations with each other (Figure 1.2).

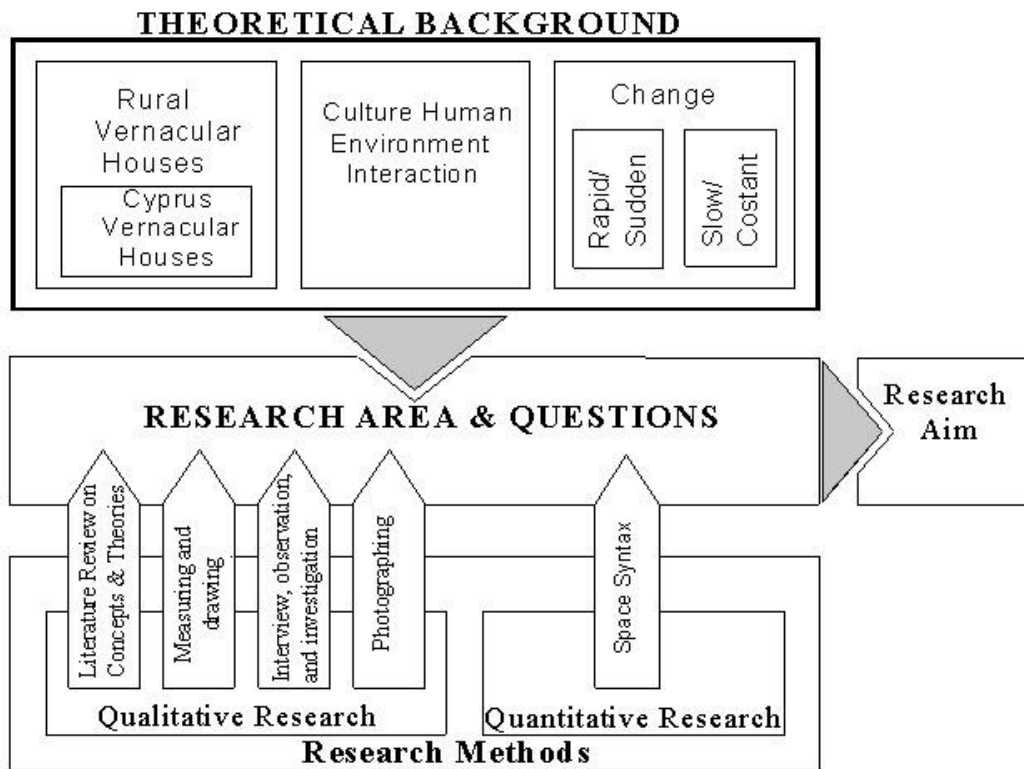


Figure 1.2: General conceptual framework of subject and scope (Designed by the author)

1.6 Structure of the Thesis

The structure of the thesis mainly focuses on the spatial change of rural-vernacular houses. In this context, the main headings of this study are presented in the figure below (Figure 1.3). The first stage of the study is to gain knowledge by researching all relevant resources and publications for the determined problem and purpose, which led to studying the main concepts that make up the thesis subject area, such as global change, change, urban and rural change, rural structuring, sustainable development of rural housing, urban and rural housing development, housing, housing areas, and sub-concepts of housing, space, spatial changes, time periods, and institutional studies as well as applied studies.

In the second stage of the thesis, all documents related to the research area are gathered and observations of the rural-vernacular living area were made. The examples of the

study include housing examples where additions and changes can be detected, and the locations of the selected examples on the map are determined one by one. A detailed study was carried out for examining the housing samples of the research and drawing their plans. The original plans of the houses in the region were drawn in line with the information provided by the user before the change, and survey drawings were made one by one to indicate the new status of each selected rural house. There is a comparison of all residences of the original and changed plans.

As a result of the observation and examination, the change in the house is indicated in red in the drawings. Parallel to this study, the size of the interaction between the residence and the user, the stages of change and the reasons for the changes were tried to be determined through interviews with the users. The changed sketches of the house, environmental relations and its location in the settlement, photos and house and family histories were obtained for each house through the interviews. Each part belonging to the houses were documented with their furniture and all places examined were photographed to gather the reinforcement information. As a part of this second stage, by specifying the analyses based on the socio-cultural and socio-economic perspectives in sustainable rural-vernacular housing and subject areas that came with a change in the region, institutional approaches and models were examined and the conceptual framework of the study was created in the light of the information obtained.

In the third and final stage of the study, the three identified prototypes were interpreted using 'Space Syntax' techniques of both original and changed spatial organizations. In recent years, morphological studies have increased to understand the relationship between housing style and culture, and several methods have been developed in this sense. The space syntax theory and method used in this context appear as a graphic-

based analytical architectural theory and a morphological analysis method that examine the interaction of space organization and society. By making configurational models with the space syntax method which gives more concrete and more scientific results instead of clear definitions with the objective analysis tools it offers, it has been tried to specify the spatial organizations due to change and to determine their spatial depths.

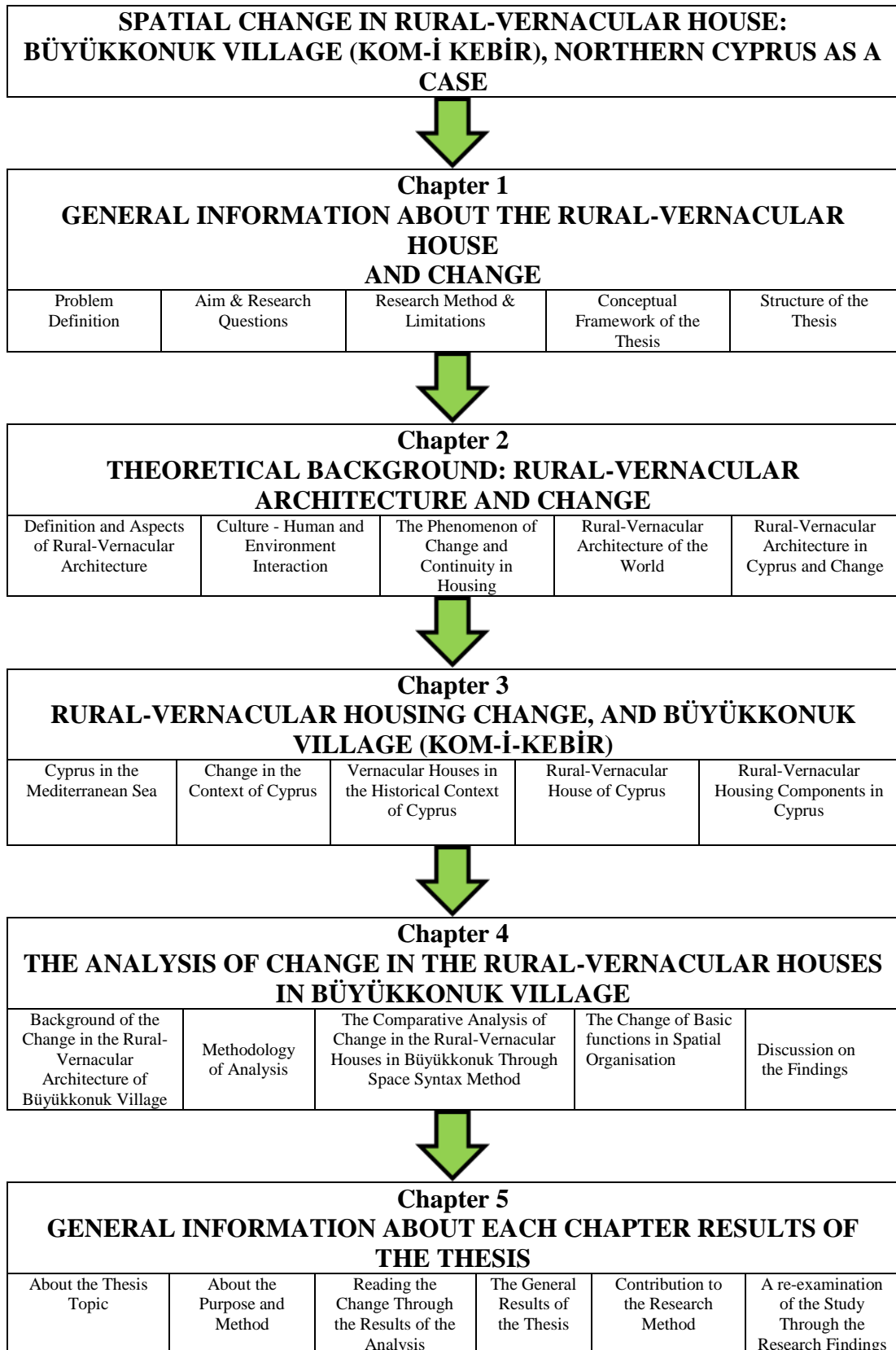


Figure 1.3: General Structure of the Thesis

1.7 Chapter Conclusion

In this introductory section, initially, a general introduction to rural-vernacular housing and changes that occurred over time is given, followed by a conceptual definition of housing. From the perspective of these changes, both continuity and transformation issues in housing are explained. The section concluded by explaining the aim of the thesis, introducing research questions and the methodology of the study as well as presenting the structure of the thesis.

Chapter 2

THEORETICAL BACKGROUND: RURAL- VERNACULAR ARCHITECTURE AND CHANGE

This section will tackle the theoretical background of the subject that supports the study as well as the development of it. In the geographical setting where the research has taken place, rural-vernacular houses constitute the original architectural character of the built environment. The fact that the researcher grew up in such an environment and in a rural residence made the subject more personal than just an academic interest.

Firstly, the context of the study has been shaped by the theoretical framework obtained through literature reviews, and within the scope of the theoretical background of the study, the studies of the relevant sources produced on rural-vernacular housing and findings, viewpoints and concepts on the subject will be mentioned. Then, the definition of rural-vernacular architecture, rural-vernacular housing culture and environmental interaction in rural housing and the reasons for change, will be dealt with in addition to its continuity achieved by a change in rural-vernacular housing, rural-vernacular architectural typology and rural-vernacular housing examples selected from different geographies will be explained. Last but not least, within the scope of this section, the rural-vernacular architecture and change in Cyprus and the studies achieved on the local architecture of Cyprus will be introduced.

Rapoport (1969) underlines that rural-vernacular architecture covers 95% of the existing built environment, however, this tended to be overlooked in traditional design history (Rapoport, 1969). Yet, it is clear that there has been a growing interest in local architectural studies for a long time. According to Oliver, in 1997, there was a growing interest and understanding of vernacular traditions around the world (Oliver, 1997). Rural settlements which reflect a wide accumulation of knowledge on building tradition have experienced constant changes in the minds of the society and the culture of life in the historical processes. The change and danger of extinction of the rural-vernacular architectural texture emerged in the 20th century with the decrease in agriculture, which is a rural production activity, and the increase in migration to cities due to industrialization (Futuropa, 2008). With the industrial revolution, a new social life order started to be established and the movements of westernisation and hence innovations in technology affected the housing culture and accordingly the housing spaces. Considering this situation, which has been criticized, considering the socio-cultural and socio-economic structure of the user in rural housing design, a changing design approach has been adopted in the houses (Edgü and Ünlü, 2003).

At this point, the following question comes to mind. ‘Why are Architects becoming interested in Studies of Rural-Vernacular Architecture?’ The answer to this question is that it is known that rural-vernacular architecture includes the construction traditions and construction methods of many buildings from past eras that still exist today. Moreover, it is known that the culture and the use of space, which is an integral part of it, are the most important characteristic features of local architecture. The environments people live in today are also a product of local conditions, therefore the existence and continuity of local architectural features can still be seen in the environments we live in.

In the historical process human beings who are in constant intervention with the environment in which they live, have re-shaped and changed in line with their own needs. Living space formations have been obtained according to the need for protection, making the house a structure of shelter. With the transition to social life, shelters have gained more importance, and rural buildings and their open spaces (courtyards) have begun to be created with the increase in productivity and in the construction profession (Bozkurt and Altınçekiç, 2013).

As a result of the buildings' advancements reflecting domestic local requirements and local construction materials, rural architectural living spaces began to develop. The shaping and definition of rural architectural living spaces, which have undergone many changes since the first ages are explained with different concepts and terminologies in the historical process. In local or regional housing analysis some researchers use different terminology for local houses, although they have the same meaning. When we consider the concepts used for local residence it is useful to know certain issues: Briefly, these concepts are expressed as traditional architecture (based on tradition, pertaining to tradition, ingrained), local architecture (pertaining to a particular region), vernacular architecture, or rural architecture (a place where few people live, usually in the countryside).

Namely, traditional/local/vernacular/rural architecture has a special image in the eyes of all people and is a source of justifiable pride. It is considered a structure which reflects the characteristics of societies and attracts attention. Vernacular architecture, which is the basic expression of a society's culture, on the one hand, shows the relationship of that culture with its region, therefore it is an important factor that reflects the cultural diversity of the world (ICOMOS, 1999). In particular, it has some

general principles and these three basic principles are general principles, protection principles and implementation principles.

While expressing local architecture it is important to remember that it is defined as a form of construction that uses familiar symbolic forms of a particular culture, of a particular society in a particular geography. In this sense, local architecture is summarized as a common built environment culture that is accepted at the community level and transferred to the next generation (Burotime, 2018). In addition to being an architectural style that reflects local needs, availability of construction materials and local traditions, it is a phenomenon that reflects sociocultural elements and understandably is the subject of much research (Burotime, 2018). Specific buildings that are not produced by a professional designer can generally have a repeating typology. It is seen that similar spatial solutions are applied in such construction. Accordingly, traditional architecture that does not try to be aesthetically assertive shows a lifestyle in harmony with the ecosystem, climate, and nature (Burotime, 2018). On the other hand, traditional architecture serves to define common building styles in a region and provides information about socio-cultural elements. In this sense, traditional architecture can be read as a spatial reflection of the lifestyle of a particular society belonging to that region.

2.1 Definition and Aspects of Rural-Vernacular Architecture

Rural-vernacular architecture tends to evolve over time by reflecting the environmental, cultural, technological, economic, and historical context in which it exists (Futuropa, 2008). Rural-vernacular architecture is usually created using local materials and knowledge, without the supervision and construction of professional architects (Oliver, 1997). Eminent researchers like Bernard Rudofsky, Amos Rapoport

& Paul Oliver have laid the foundations to study rural-vernacular architecture as a socio-cultural phenomenon.

As Rapoport stated, vernacular architecture is a direct expression of society and culture (Rapoport, 1969). According to Rapoport (1969), in his rural-vernacular studies; he always refers to local cultures and uses examples from them, but it basically highlights that as the field of human-environment studies begins to emerge local architecture begins to become more interesting and more important. He develops a theoretical and conceptual approach to the study of human-environment interaction, whereby one begins to see the local as a particular aspect or situation of a more general problem (Bretonne, 1979).

In this context, it was Rudofsky (1964) who first made use of the term 'vernacular' in the architectural research context and brought the concept into the eye of the public and of mainstream architecture. In 1964 the exhibition 'Architecture Without Architects' was put on at the Museum of Modern Art, New York by Bernard Rudofsky (Rudofsky, 1964, p.58). Accompanied by a book of the same title, including black-and-white photography of vernacular buildings around the world, the exhibition was extremely popular (Oliver, 2003).

Paul Oliver, in his book "Dwellings" states; "it is contended that 'popular architecture' designed by professional architects or commercial builders for popular use does not come within the compass of the vernacular."(Oliver, 2003, p.15). Ronald William Brunskill (2000), has defined the ultimate vernacular architecture as:

“a building designed by an amateur without any training in design; the individual would have been guided by a series of conventions built up in his locality, paying little attention to what may be fashionable. The function of the

building would be the dominant factor, aesthetic considerations, though present to some small degree, being quite minimal. Local materials would be used as a matter of course, other materials being chosen and imported quite exceptionally”(Brunskill, 2000).

Frank Lloyd Wright described vernacular architecture as “folk building growing in response to actual needs, fitted into the environment by people who knew no better than to fit them with native feeling”, suggesting that it is a primitive form of design, lacking intelligent thought, but he also stated that “it was for us better worth study than all the highly self-conscious academic attempts at the beautiful throughout Europe” (Oliver, 2003, p.9). Modern pioneers benefited from vernacular forms in the creation of a new architectural language. In particular, modern residential architecture based on the “prairie style”, which is one of the basic forms of Frank Lloyd Wright's local American residential architecture typology is worth mentioning. Other important definitions below (Table 2.1) also refer to some form of vernacular architecture defined against formal architecture and aesthetics.

Table 2.1: Definitions of rural-vernacular Architecture (Asadpour, 2020, p. 243)

No	Researcher	Date	Definition
1	Eric Mercer	1975	Vernacular buildings are those that belong to a group of constructions that were common in a particular region and time... In other words, no building is considered to be vernacular because of its qualities, but rather by virtue that is shared by many.
2	R.W. Brunskill	1981	Vernacular buildings are kinds of constructions that are consciously sustained instead of temporary, have traditional inspirations instead of being academic, and designed to feed the simple, day-to-day activities of the people, their farm and their modest industrial business. They are gradually dependent on location and the use of local building materials but reflect the design and construction of an emotionally and thoughtful building rather than being designed and constructed on a practical application basis.
3	Camille Wells	1982	Vernacular architecture encompasses a variety of buildings, including factories, farms and homes - schools and separate homes with all its sights, mills, agricultural areas, fields around towns and business strips.
4	Dell Upton	1985	Vernacular buildings are ordinary buildings.
5	Kingston W.m. Heath	1988	Vernacular architecture is a craft whose value is not in style but its capacity as cultural messaging.
6	Judith Roberts	1996	Vernacular architecture means building with local materials based on local traditions through shapes and forms of construction of shelters and buildings that have become a document of economic and social processes. It is through the layout of form, materials, patterns, and details that we are now able to 'read' these buildings and understand them in our place.
7	Paul Oliver	2000	Vernacular architecture means a building of people, making them by the people. Vernacular architecture does not refer to buildings designed and built by professional architects and builders.
8	Maria Philokyprou	2011	Vernacular architecture generally refers to a local and unknown architecture that responds to local needs through a form that is flow function. While aesthetics and decorations are prominent in official buildings, vernacular settlements are devoid of these. Their importance is due to their continued use and reuse, as living and using them are essential for keeping the vernacular traditions alive.
9	Juan A. García-Esparza	2012	In vernacular architecture, the subject attempts to identify historical objects through his/her imagery and perception of the enduring region, memory, and effects. All of this is affected by the feelings and emotions of each viewer.

Source: (Mercer 1997, Brunskill 1981, Cromley 2008, 302, García-Esparza 2015, Groth 1999, 444, Heath 2003, 49, Philokyprou 2011, 8, Roberts 1996, 177)

It has been pointed out that the definitions of “Vernacular Architecture” and “rural”, “spontaneous”, “folk”, “primitive architecture”, and “architecture without architect” are generally valid for this type of architecture. However, all these definitions can create a different architectural image on their own. These different nuances in the image force us to define and express words and concepts more precisely, otherwise, it may fall into conceptual confusion (Sezgin, 2006; Asadpour, 2020).

In reality, rural-vernacular architecture is best expressed by the words “folk architecture done by people”. This phrase, which refers to pre-industrial masterwork is also used with different definitions that are close to each other in meaning. Some of these are ‘folk architecture’, ‘local/regional architecture’, ‘vernacular architecture’, ‘spontaneous architecture’, and ‘Agricultural Age architecture’. Rural architecture,

often used for residences, is the architecture specific to a certain period and region. Climate, landforms, natural features such as soil and water, materials in the close environment, and the culture of life are the main factors in the formation of rural architecture. The primary dimension of rural architecture is the function of the building; the aesthetic concern is of secondary importance (Çekül, 2012). Within the scope of this thesis, the name of the rural-vernacular house has been used for the local houses of the study area.

When the general literature is examined it is possible to examine the studies on rural-vernacular houses under three headings. In the first group, rural-vernacular architecture has been mostly evaluated within the scope of sustainability and has been discussed in terms of its relationship with topography, climate, materials and construction technology or the suitability of spatial organization to climatic data (For example, Lawrence, 2000; Blowers, 1997; Blowers, Pain, 1999; Evans, 1997; Hatfield Dodds, 2000; Houghton, Hunter, 1996; Redclift, 1997; Redclift, Woodgate, 1997; Richardson, 1997; Sachs, 1997; Sachs, 1999; Turgut, 1990; Dinçyürek, Mallick and Numan, 2003; Çahantimur, 2007; Dinçyürek & Türker, 2007; Gökce & Kaya, 2020).

The second group considered housing as a material and spiritual cultural value. These are studies that investigate the physical/spatial structuring of culturally specific archaeological remains, traditional residences, socio-cultural values, and spatial behaviour (Rudofsky, 1964; Rapoport, 1969, 1982, 1970, 2004; Bachelard, 1969; Prussin, 1970; Cooper, 1974; Oliver, 1975; Denyer, 1978; Duly, 1979; Altman, 1980; Lawrence, 1997, 1986; Sanders, 1990; Turgut, 1990, 1997; Benjamin, 1991; Tozan, 2000; Pulhan, 2002; Akay, 2010). Studies in the first and second groups mostly use methods such as on-site observation, surveys, and oral history studies.

The third group is the research that deals with the rural-vernacular house in terms of its morphological features and tries to explain its spatial arrangement by associating it with sociocultural values (Hillier and Hanson, 1984; Lawrence, 1987; Oliver, 1987; Rapoport, 1999; Dinçyürek, 2002; Türker, 2002). In such approaches which consider the house as a set of systems, it uses the space syntax method as an analytical tool. In addition, in this third group studies, questionnaire surveys, oral history and, where necessary, survey methods are used for the drawing of rural housing plans. In terms of the parameters included in the studies related to the Space Syntax method, it has been observed that the studies are generally developed on integration and depth maps due to the perception of privacy, the comparison of spatial cultural differences, and the focus on the relations between different functional units. The architectural spatial sequence contributes to a better understanding of the interaction between design features and intended purpose, social constraints, and formal possibilities (Hillier et al., 1987 cited in Edgü and Ünlü's, 2003).

In this study, although there are explanations related to the first and second groups, the most notable is the third group mentioned above. The research method used by the third group is closely related to this study, but it is also related to the first group because it is seen that there is a stronger observed continuity and sustainability in some types through change. In short, these three main titles in regional-rural housing research are related to each other and constitute the whole of the studies carried out within the scope of local housing. This explanation is necessary for this study because it is known that the cultural concept affects the formation, development and change of housing (Rapoport, 1976). In this context, it is important to see the cultural differences of the residential users in the study and the effect they have made or not made on spatial changes.

2.2 Culture, Human and Environment Interaction

Culture is a very important concept in environment-behaviour studies. As Rapoport (1969) discusses, before one tries to define culture, one might say that it is about a group, that is learned and transmitted, that shares a set of values, beliefs, worldviews, and symbol systems. These create a system of rules and behaviours. He argues that this system will reveal ideals and shape a way of life, behaviours, roles, methods, as well as the built form. What distinguishes one particular built environment from another is the nature of these rules that are shaped and coded within it. Hence, what makes the difference is the fundamental principles in their organization and relationships, and their meanings (Rapoport, 1969; Turgut, 1997; Tozan, 2000; Mumcu, 2009).

Due to this, people who are users of the built environment show physical and psychological changes and developments in every part of their lives (Figure 2.1). They make an effort to organize their environment in accordance with this change and development. However, they use it for a long time, perhaps during their lifetime, without leaving the environment they are in.

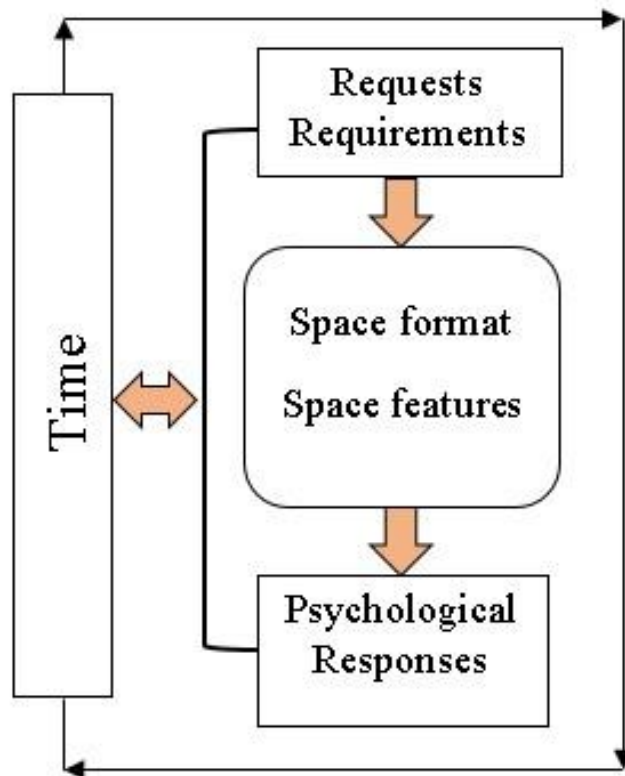


Figure 2.1: Transformational relationship between man and space (Adapted from Çahantimur, 2007)

According to Low; Chambers, & Rapoport (1989), inhabited space is produced, reused, and changed by different cultural groups in a cultural and geographical context. Each change arises from a specific cultural need, and while the new model that emerges after the change has its own characteristics, the original model always preserves its traces.

Rapoport believes that two important problems of culture are its excessive breadth and excessive abstractness that need greater clarity and explanation. Rapoport dismantles culture into components and variables in two ways, each of which follows the way to answer one of the fundamental problems of culture, excessive breadth, or excessive abstractness. These two paths are different but, they are also complementary and have multiple interactions. Therefore, it is necessary that the two paths be considered

simultaneously. Rapoport tried to summarize this dismantling of culture in one diagram. In fact, this diagram is one of the main themes of Rapoport's perspective on making culture more understandable (Figure 2.2).

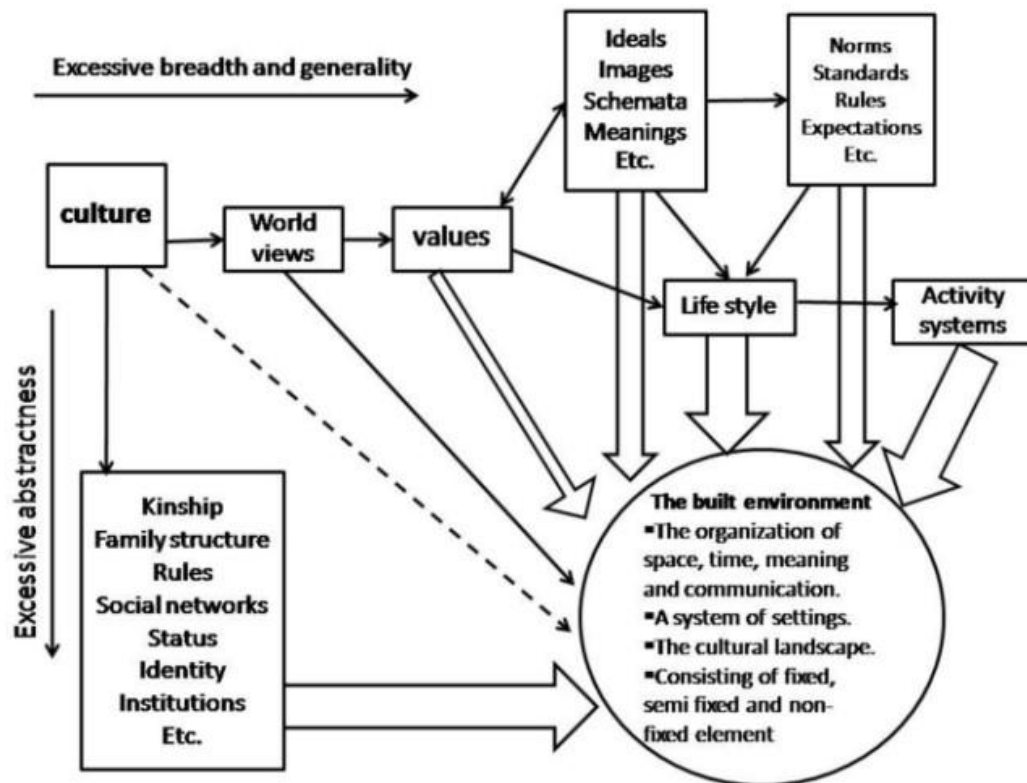


Figure 2.2: The scheme of understanding the culture; the relationship between the variables and the built environment (Rapoport, 2003, p. 155).

Culture has a lot of definitions in various sources. In its widest sense, culture may now be said to be the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or social group. It includes not only the arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions, and beliefs (UNESCO, 1982, p.1)

According to the Turkish Language Association, the definition of the concept of culture is:

“The sum of all the material and spiritual values created in the historical and social development process and the tools used in creating and transmitting them to the next generations, showing the extent of human beings’ dominance over natural and social environment” (Kaplan, 1983, p.38).

Social scientists have suggested many definitions for the concept of culture. For example, culture has been explained as “the sum of all the knowledge, attitudes and behaviour patterns shared and transmitted by the members of a particular society” by some of the sociologists (Philip Smith, 2005; Talcott Parsons, 2005), and as “the part of the environment created by human beings” by some others. Geographer Harris (1971) defined culture as “the learned thinking and behaviour characteristics of a population group or society”, and Ann E. Larimore (2020), similarly defined it as “a way of life that members of a group learn, live and pass on to future generations” (Tümertekin & Özgüç, 2002).

The most common definition of culture is “the common way of life of a group of people”. Here, it is their "lifestyle" that privatizes the group or society in question (Ertürk, 2010). In the historical development of social sciences, the phenomenon of culture is defined as “a lifestyle that expresses the behaviours and attitudes that people have learned” (Rapoport, 2004). Culture, as a humanistic concept, is “a system of meaning and significance created in history” (Oğuz, 2011). Culture is ‘the system of beliefs and customs that a group of people use in understanding, arranging, and structuring their individual and collective lives’ (Ertürk, 2010).

The concept of culture was defined by the British anthropologist Sir Edward B. Taylor at the end of the 19th century as “knowledge, belief, morality, law, custom, art, tradition, and the set of habits and abilities acquired by a person as a member of society” (Rapoport, 2004). As a general definition of culture, Rapoport (1969, p.48)

defines the typical life path of a group as “a system of symbols transmitted through symbolic codes”. This symbol system is divided into three views.

Beliefs and perceptions, values, and norms, which are the first of various basic elements of culture; show the traditions and behaviour of a group or society. The second refers to unanimously shared understandings, feelings, and behaviours amongst a group of people. The third states that shared beliefs, values, and behaviour styles are transferred to their values, education, and socialization of new members of the culture are conserved from one generation to the next (Yalçın, 1998).

In this context, when we look at the culture-housing interaction, we can say that; housing has varied throughout history depending on the social and familial cultural structure (Rapoport, 2004; Ertürk, 2010). Therefore, it can be said very easily that a house reflects a certain culture. Rapoport (1997) carried out some studies on how people shape the environments they live in depending on their culture and lifestyle. In his book “Human Aspects of Urban Form” Rapoport (1997) says: “The rules that guide the organization of space, time, meaning and communication show an order because they are systematically related to culture”.

It is known that there is a transformational relationship between environmental and socio-economic factors, cultural components and building form in the housing formation process. This approach is expressed (Figure 2.3) by Altman as three main headings and sub-headings: environmental, socio-economic, and cultural. All these components reveal the importance of physical, behavioural, and cultural factors as determinants of building form. (Altman, 1980).

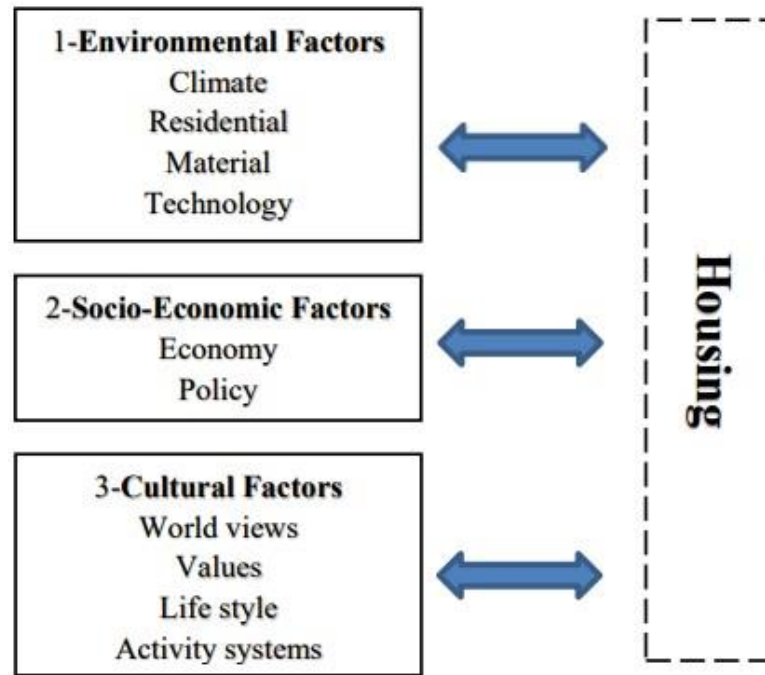


Figure 2.3: Factors influencing housing formation (Adapted from Altman, 1980)

As stated by Yalçın (1998), the phenomenon that parallels the cultural process and expresses it best, is the architectural culture accumulation. It is inevitable for both people and societies to affect and be affected by the environment they live in. This mutual interaction and integration with the environment is an important factor both in the formation of different cultures and in the emergence of different spaces, with the reflection of these cultures to the outside world (Yalçın, 1998).

According to Zorlu & Keskin (2017), dwelling is the leading architectural type formed by the influence of culture. Dwellings are a mirrors that reflect social, economic, and cultural norms of societies. When compared, dwellings in different regions seem to reflect different sociocultural worlds. Social components as well as physical components of culture are also effective in the development of this diversity. Factors such as beliefs, worldviews, values, ethnicity, and social structures are the social components of the concept of culture (Rapoport, 1969; Zorlu & Keskin, 2017, p.73).

Culture expresses the accumulated norms, customary beliefs and socialization patterns that are transferred from one generation to the next (TLI, 2021). In all societies, the natural environment influences the development of cultural actions. In order to adapt to the environment, people adopt certain patterns and show their adaptations (Aiello, 1980). This situation, which has been criticized, necessitated the adoption of a design approach in which the socio-cultural structure of the user is taken into account (Edgü and Ünlü, 2003). In this context, although the studies generally focus on urban housing, it is known that rural-vernacular architecture is a subject that should be investigated primarily within the scope of human-environment relations (Gökce and Kaya, 2020).

Based on the explanations of Kırşan and Çağdaş (2004), studies on housing carried out in recent years have revealed that social meaning and cultural values are largely reflected by housing organizations so that different cultures express themselves with different spatial models (Hillier, 1987; Rapoport, 1969; Kent, 1990). Researchers agree on the view that while the built environment reflects and shapes the culture on the one hand, the idea that cultural influences are hidden in the construction of the built environment is gaining more and more importance. According to Hillier (1987), the reason for this is that societies have a spatial dimension and similarly, spatial systems are social structures that come from their own nature. Accordingly, cultural knowledge can only be obtained with a systematic study on the organization of space. It reveals that cultural features are not only found in the organization of space, but also that they are the main drivers of daily life patterns (Kırşan and Çağdaş, 2004).

2.3 The Phenomenon of Change and Continuity in Housing

It has been emphasized in all of Rapoport's works since 1969 (1969; 1970; 1982; 2004; 2005), that the spatial organization, which constitutes the essence of housing design, emerged depending on a set of cultural variables based on perceptual, symbolic, social, territorial, physical and pragmatic aspects. This perspective takes place under the headings of environmental design, environmental psychology and, increasingly, sustainability and continuity as the most general and current field, as well as human-environment-culture studies.

Within the scope of change and transformation, sustainability and continuity is a concept that has been emphasized by researchers in recent years. In this case, first of all, it is necessary to define change and transformation: The word “change” as a noun is defined as “the whole of the changes that take place within a time period” by the Great Turkish Dictionary, published by the Turkish Language Association (BTS, 2010a). In English, the word change is defined by the Oxford Dictionary (Oxford Dictionary, 2010a) as “an act or process through which something becomes different”. (Durmuş, 2017, p. 24). The most significant factor affecting the transformation process is change. The word transformation, which is conceptually related to change, means “coming into a form different from its own, occupying another position, changing form” (BTS, 2010b). Thus, the word transformation supports “change,” and the two concepts can be discussed together (Oxford Dictionary, 2010b).

Sustainability, by definition, is making the life of humanity permanent while ensuring the continuity of production and diversity. The concept of sustainability began to enter and shape our lives after the report titled “Our Common Future” was published by the

United Nations in 1987. The report, which was published in order to find solutions to the problems arising from rapid industrialization and population growth, was a warning about the negative consequences of economic development and globalization on the environment. The definition of sustainability in the report is expressed as “Humanity has the ability to make development sustainable by meeting daily needs, without compromising the capability of nature to respond to the needs of future generations” (UN, 1987). In other words, sustainable development, with its most well-known definition, is "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (WCWD, 1987, p. 15).

Continuity is a concept that predicts the next stage in many branches of science and is based on continuity and change. According to the Turkish Language Institution, continuity is explained as being continuous. (Turkish Language Institution). Continuity is a collection of events and interruptions from the past to the present. The continuity model in architecture is considered an indicator with many complex parameters. The extensions between the knowledge of the past and the knowledge of the present are revealed by the analysis of the essential elements that show the architectural product formally and that are seen by making use of the continuity parameters (Erçin, 2014).

In addition, the most important factor among the factors that make up the architectural environment is culture and cultural components, which are the parameters that establish continuity. The transfer of knowledge from the past by changing and developing over generations includes continuity. Continuity is the original structures designed in rural-vernacular dwellings in line with different cultures and

environmental factors. Therefore, they are concrete examples of past knowledge (Erçin, 2014, Philokyrou, 2015).

In the continuity model in the rural context, the preferred method of architectural continuity means the continuation of what belongs to the past. The information inherited from the past is continued either by repeating it or by changing it in a modern sense in accordance with the new conditions. When looking at the continuity of an architectural structure and fiction that has survived until today, it will not be enough to search only the recent past. The essence of rural architectural structure can be based on a longer history (Erçin, 2014).

In this context, when we consider the change and continuity in rural housing; in physical changes in the environment; the physical environment is shaped by being directly affected by the economic and social structure of the society, political tendencies, cultural life, and technological opportunities (Tozan, 2000; Ertürk, 2010; Durmuş, 2017). As a result of social, cultural, economic, and social change, human communities living together abandon or change their old needs in the face of new needs. As a result, changes occur in the physical environment. The changing physical environment, in other words, the change of the urban space provides a social change.

The factors of social change can be shown as:

- ‘Economic change’,
- ‘Technical progress’, and
- ‘Population movements’.

These three elements cause changes in the rural space by changing human relations. Technological changes which affect the basis of social change cause changes in

interpersonal relations. While the change in interpersonal relations affects the change of individual human behaviour, this change also affects the change of the fiction of the place. On the other hand, village life which does not change as fast as life in the cities brings with it the continuity of the rural-vernacular housing culture and the organization of the housing space. It is also possible that the continuity will be interrupted or have its healthy development hindered by the new interventions made in parallel with this. The structure of local housing is suitable for change and transformation, influenced by the culture of the user, it changes some space editing and continues its development by preserving some features of the local residence.

“Changes in local architecture over time, as it is a doctrine that usually occurs due to needs, play an important role in ensuring historical continuity and establishing cause-effect relationships on a certain basis. The reason for a practice done today may be a habit or tradition from centuries ago.” (Ceylan, 2007, p. 7-8).

In this direction, the changes determined in the work area are the changes that are made mainly in line with the needs of the users spread over time, these are continuous and slow changes, but they cause great changes in the organization of the space. It will be important for the study to investigate whether this change is generally caused by user needs or is caused by architectural and physical wear and tear in rural dwellings.

2.4 Rural-Vernacular Architecture of the World

Rural-vernacular architecture represents a very large share of the built environment. According to Pulhan (2002), building is one of the first conscious acts of human beings for sheltering. Throughout the world, the first built form by human beings were crude structures without significant identifying characteristics. these primitive forms were merely structures to protect man from superstitious beliefs, and animal and climatic effects. (Pulha, 2002, p.76). Being by definition non-engineered architecture,

vernacular buildings are a result of tradition, and improve over time as a response to the requirements of their social and physical environment (Philokyprou, 2015). However, vernacular architecture possesses certain specific qualities that are radically differentiated from other types of non-engineered constructions (Figure 2.4). They are the result of ancient traditions, and gradually improved over time, in response to the needs of their occupants or to the changing requirements of their physical environment (Oliver, 2003).



Figure 2.4: Rural-vernacular architecture examples from the world (URL1)

In this context, rural-vernacular architecture “emerged in the unique conditions of the Pre-Industrial Period (Agricultural Age), (Lassure, 2019). Rural-vernacular houses which started to disappear with the Industrial Revolution that took place in the 19th century were shaped according to the needs of the local people who were their users with the technique, material and knowledge provided by the era and environment in which they were created. It is a cultural phenomenon that reveals the lifestyle, social relations, production and consumption patterns, beliefs and traditions of the society that created it in the simplest and most local way” (Oliver, 2003; Davulcu, 2009; Çekül Foundation, 2012).

According to Rapoport (2005), this structuring is a completely need-oriented process that reflects on cultural, social and many other factors. In addition, rural architecture is expressed by different names in written sources such as regional, local architecture, folk building art, vernacular architecture, spontaneous agrarian architecture, anonymous architecture, etc. According to the definition of the World Encyclopaedia of Vernacular Architecture, rural architecture “includes all houses and other structures built by the public (Oliver, 1997).

It is widely known that the building materials used in rural buildings are generally reed (bamboo), wood, animal skin, adobe and/or stone. These materials vary in direct relation to the location and climate of the region, and easily available and accessible materials are used in each region. They were built using traditional techniques, mostly by the landlord or local builders, with the possibilities of the chosen environment and the materials at hand. All forms of rural architecture are geared towards meeting certain requirements, and “bears the traces of the culture, lifestyle, economic activity and values behind these needs” (Çekül Foundation, 2012, p. 5).

These values in their modest plain appearance are the indicators of great knowledge, tradition, and culture. As Aran (2000) states, rural builders keep their methods in mind, they verbally transfer information; materials based on sensation data (environmental perceptions, stimuli) and thought patterns and actions locked in on them from one generation to the next in a master-apprentice relationship and maintain them in a common culture with tradition and custom.

The knowledge acquired over time, habits, and abilities that emerge as a result of genetic and physical characteristics, the geography in which it is lived, and all these

concepts have formed the defining features of the definition of culture (Mumcu, 2009). In this situation, the emergence of different local architectural examples in different cultures, on different continents, and under different conditions has been inevitable. Changes experienced within the framework of the concept of culture constitute different living standards, conditions, and styles. Vernacular residential areas, meaning houses and their spaces, are not the same in different locations as they are formed as a result of culture and local context. On the other hand, some of the regional living and accommodation areas are similar in spite of these different geographies. Although these architectural similarities are in different conditions, in some examples, they also show similarity in plan, material and form (Table 2.3).

2.4.1 Variety of Rural-Vernacular Architecture According to Regions

The most important determinants of rural-vernacular architecture are climate, geography, and natural resources which we can define as environmental factors. The world is geographically divided into 7 different continents (Figure 2.5), and this is reflected in the diversity of rural-vernacular architectural examples. For this reason, regional-rural architecture should be handled separately for each region because each region has its own unique climate and way of life (Figure 2.6). In this context, there are some important questions that we can ask for rural-vernacular houses in the study. For example: “What types of housing construction materials are used?; What types of shapes, functions and other features do local housing designs have?; How do users construct their houses (tools and techniques)?; What are the relations between indigenous house construction and modern architecture?”.

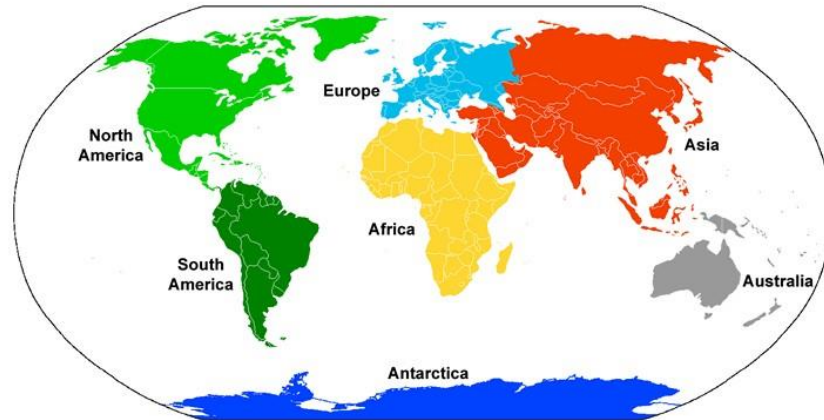


Figure 2.5: Map of seven continents of the world (URL3)

Examples of local architecture can be categorised according to continents around the world.

- Local Architecture in Australia (The Continent of Australia)
- Local Architecture in Africa (The Continent of Africa)
- Local Architecture in Europe (The Continent of Europe)
- Local Architecture in South America (The Continent of South America)
- Local Architecture in North America (The Continent of North America)
- Local Architecture in Asia (The Continent of Asia)
- Local Architecture in Antarctica (The Continent of Antarctica).

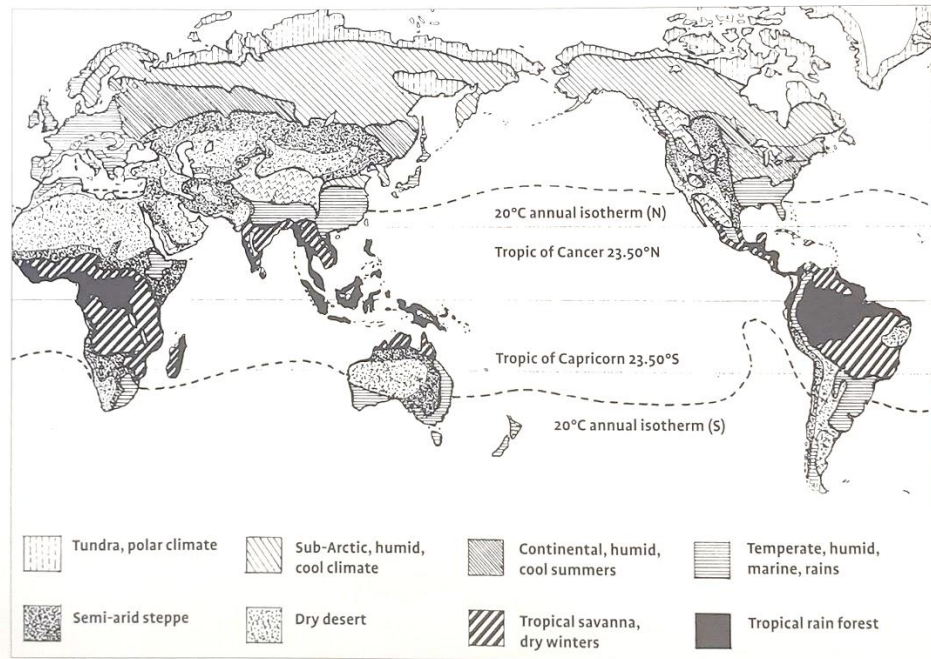




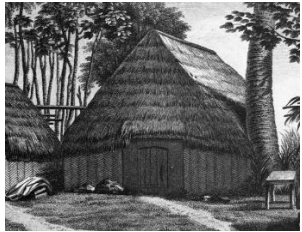






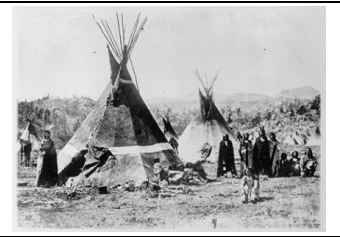




Figure 2.6: Principal climate zones of the world (Oliver, 2003, p.134)




Local examples of rural-vernacular housing over the continents show that even if the same type of material is used in different geographical regions, depending on the natural factors such as climate, landforms, geological situation, slope and drainage conditions, and the differences in tradition, custom, habit, cultural characteristics, and economic activities, rural-vernacular houses are built in different ways (Oliver, 2003; Kütük, 2016). In addition, it can be concluded that the geographical environmental conditions are as important as the materials (wood, adobe, stone) obtained from the environment in the construction of rural-vernacular houses and plant-based materials (reed, straw, tree branches, tree leaves), stone, soil and wood in the construction (Jacobsen, 1969; Oliver, 2003; Batur & Gür, 2005, Kütük, 2016; Zaman, 2017; Karpuz, 2019; Sakarya & Gürani, 2019).

Across the continents, the examples shown below (Table 2.2) clearly demonstrate the variation in environmental factors, climate, and local materials. The most important

functions of the houses are sheltering and adapting to the environment, regardless of in which region they are built. As a result, geographical regions and climatic events directly or indirectly affect and even control the natural environment and people.

Table 2.2: Examples of rural-vernacular housing from six continents

Australia			
	New Zealand, (Oliver, 2003) Log, wood, suspensory rope	Hawaiian, (Jacobsen, 1969) Thatched house	Hawaiian, (Jacobsen, 1969) Pandanus and sugar cane leaves, banana trunk fibre
Africa			
	Ethiopia, URL-1 Grass, bamboo tree and soil	URL-1 Bamboo wood and reeds	Abdallah & Estévez (2021). Clay
Europe			
	Northern Europe, URL-1 Wood	Denmark, Timber frame with brick infill	Sweden wooden rafters, thatch/turf
South America			
	Brazil, URL-1 Tree branches and animal leather	URL-1 Tree branches, animal skin	Native Americans, (Oliver, 2003, p. 70) Grass
North America			
	Greenland and Alaska	Greenland	

	Ice	Wood/ wooden rafters	
Asia			
	The Black Sea Region (Batur & Gür, 2005, p. 69)	Japan	Nilgiri Region (Mishra & Priyadarshani, 2020, p.2894)
	Stone, wood	Wood and wooden columns	Bamboo sticks, straw, mud







2.4.2 Similarities of Rural-Vernacular Houses in Different Parts of the World

Throughout the world, there are local architectural structures in different geographies that have similarities in terms of plan and appearance. Some examples of local houses with different cultures and similar usage purposes are given in the table below (Table 2.3). One of the examples given for these similarities can be the local houses of Harran. Moreover, Domed houses, similar to these were also found during excavations in Cyprus. Trulli houses are found eleven miles east of Girne (Kyrenia) and in Chirokoitia halfway between Lefkoşa (Nicosia) and Limassol (Limassol), which were two of the earliest settlement centres ever known on the island of Cyprus (Pulhan, 1997). This similarity is not coincidental because the "Trulli" in Italy were built in the 1600s, as opposed to the Harran houses built in the 6th century BC. These architectural and engineering anomalies are homes constructed of dry stone, with no mortar connecting the pieces together and holding them in place (Özay & Özay, 2007; Kütük, 2016).

According to Hanson (1998), designs close to the round form have been preferred in living areas from the first settlements to the present day. The reason for this is that the spaces in the building lose their isolation feature and the residence user has control over every space. Plan, as a graphic representation, represents the shape and relative

arrangement of space within a building and can be used to indicate spatial organisation, social relationships, and hierarchies, as well as aspects of construction and structure. At the same time, it is undeniable that different kinds of vernacular plan types can be identified. Some plans, like square or rectangular ones, can be found all over the world (Vellinga, Oliver, Bridge, 2007, p.68). The use of circular plans has been traced back to prehistoric times. Still, there are many examples from the distant and recent past in which circular buildings have been replaced by rectangular or square plan types, either as part of a gradual process or in a relatively short period of time (Vellinga, Oliver, Bridge, 2007, p.68).

Table 2.3: Rural architectural structures from different cultures that are similar in plan and appearance.

	<p>Traditional beehive mud brick desert houses, located in Harran, Şanlıurfa/Turkey. These buildings are topped with domed roofs and constructed from mud and salvaged brick (Kütük, 2016).</p>
	<p>Located in Alberobello, Italy, these buildings are handmade houses constructed using stone masonry with conical vaults. The climate is Mediterranean and the context is a village (Kütük, 2016).</p>
	<p>Trulli house in Khirokitia is one of the oldest known settlements on the island of Cyprus (Baudouin, Decaix, Brunacci, Guliyev & Palumbi (2022)).</p>
	<p>Rondawel: These small structures are one of the local architectural examples of Africa. It draws attention with its resemblance to Harran and Trulli houses (URL-1).</p>
	<p>Corbelled stone dwellings and houses. Les Eyzies, Southwest France (Oliver, 2003, p.71).</p>
	<p>Traditional grass house of the Wichita Native Americans. (Oliver, 2003, p.70)</p>

2.5 Rural-Vernacular Architecture in Cyprus and Change

Although the rural areas of Cyprus are located on a partially sloping, partially flat topography, they have developed in an organic texture with rural-vernacular houses in harmony with the environment. It is known that the planning of rural-vernacular housing and residential areas is carried out by considering environmental differences and depending on socio-cultural values. Rural architectural building forms that developed depending on these values are compatible with their surroundings and are quite functional, therefore rural-vernacular houses have always had an important place in this unique environment (Tozan, 2000; Dinçyürek, 2002). In fact, it can be said that they are the most important part of the environmental texture made of adobe and/or stone masonry, which are widely seen in rural-vernacular areas in Cyprus.

Looking at the history of adobe in the first settlement building examples, it is worth mentioning that in the Cypriot dialect, adobe is known as plithari or plittari (from the ancient name “plinthos” for a mudbrick) and adobe buildings were called plitharenes or plittarenes, as well as plitharetines or plittaretines. The earliest traces of adobe were found in the houses in Choirokoitia (Neolithic Age 7000-6000B.C.) and the materials are identical to present-day adobe. The dwellings consist of circular walls 1-2.5 metres thick, laid out on a circular base of rough rubble stone. In certain dwellings, the walls were double or circular in construction and the inner circular wall was adobe coated with a fine layer of mud and the outer wall was made entirely of stone (Figure 2.7).



Figure 2.7: The stone-built bases of the adobe walls are all that was found at the Neolithic settlement of Khirokitia, district of Larnaca (URL2)

Rural-vernacular housing in Cyprus, draw attention with their proximity to each other with narrow streets in the built environment, generally developed according to simple, plain, organic, utilitarian, and functional needs (Egoumenidou and Floridou, 1987; Tozan, 2000; Dinçyürek, 2002; Kırşan and Çağdaş, 2005; Davulcu, 2009). The concept of design in all rural housing types with a maximum of two floors is based on the organization of simple rectangular prisms positioned side by side around a courtyard (Türker, 2002; Dinçyürek, 2002; Dinçyürek and Türker, 2007). Philippides (1997) argues that the rural-vernacular dwellings seen in the Mediterranean geography probably emerged from the simple shepherd's tent and its derivative, one space (room) that allows both shepherds and animals to stay temporarily in nature. This single-unit simple module, where all functions of daily life are gathered in one space without the usage of separators, is reproduced by dividing or making additions. The modularity and linear order at the core of the Cyprus regional-rural housing typology has allowed the housing to be flexible and adaptable to changes for centuries (Dinçyürek and Türker, 2007; Türker, 2011). Spaces where daily life takes place contribute to the social and economic activities of the family; due to this feature, rural housing is defined as small indoor spaces that allow accommodation in a large open space that includes many functions including production (Christodoulou, 1959; Ateşin, 1997; Tozan, 2000).

Dinçyürek (2002) divides the rural housing typologies that are widely used throughout the island into three main types according to their plan features. These typologies that are defined according to the spatial organization are: ‘units without hall’, ‘units with inner hall’, ‘units with outer hall’ (Figure 2.8) and the most common type is rural house typology with outer hall.

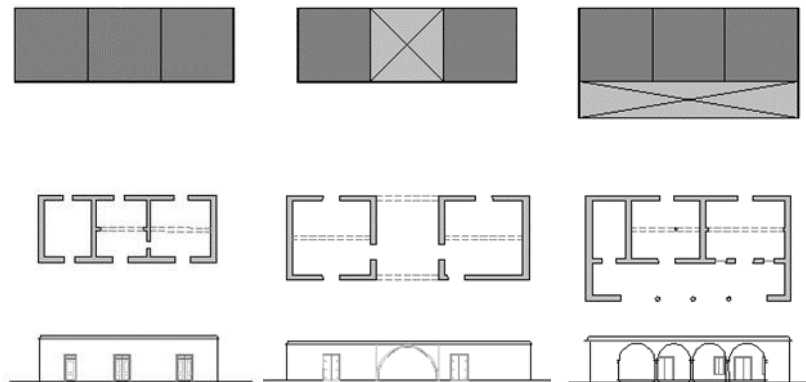


Figure 2.8: Three basic housing typologies of rural-vernacular Cypriot house (Türker & Dinçyürek, 2007, p. 112)

When examined in terms of plans, the most important features of the rooms in the rural-vernacular house are that they can meet many actions in the house on their own. The principles in the arrangement of the rooms were basically formed depending on the needs of social life, and the carrier layout of the house affected the size and shape of the room, Along with the indoor-outdoor relations through elements such as windows and doors. The inner and outer halls which function as the area around the rooms where the connections between the rooms are provided, and which are the meeting place of the family or the transitional nature are another important plan element of the rural-vernacular house. Of course, the uneven topography of the local settlement has been an important factor in the plan development of the residential architecture. There are different solutions in plan types depending on the topographic situation in the formation of rural-vernacular houses. These different solutions have

led to mixed plan types in local houses during the constant/slow formation process. The main examples of the mixed plan types can especially be seen in intermediate or transitional-type rural houses built between 1945-1955. In order to grasp the logic of the rural housing architecture of Cyprus, the three main spatial components of the house must be examined in relation to the indoor spaces (room and service spaces). In other words, it is necessary to look at the spatial relations of the semi-open spaces (outer hall or inner hall) and open spaces (courtyard) (Dinçyürek, 2002). The spatial characteristics of the basic regional-rural housing types are explained in detail in the third section of this study.

The concept of change, when considered in sociocultural and socio-economic terms means moving from one lifestyle to another (Perker, 2011). The change in lifestyle is directly reflected in the physical space. In this context, rural-vernacular houses undergo physical changes in the temporal process depending on the vital changes of the user and some of these changes can be the result of a change in the original plan of the house. It is possible to characterize the first of these changes as rapid/sudden in the short term, as Rapoport (1969) stated, and to see the second as a part of being in slow/continuous change in the long term, which is inherent in rural housing. While rapid/ sudden change is the result of modernization/globalization, migration, lifestyle, or economic factors, constant/slow change can stem from family structure, economic factors, or socio-cultural functions (Figure 2.9).

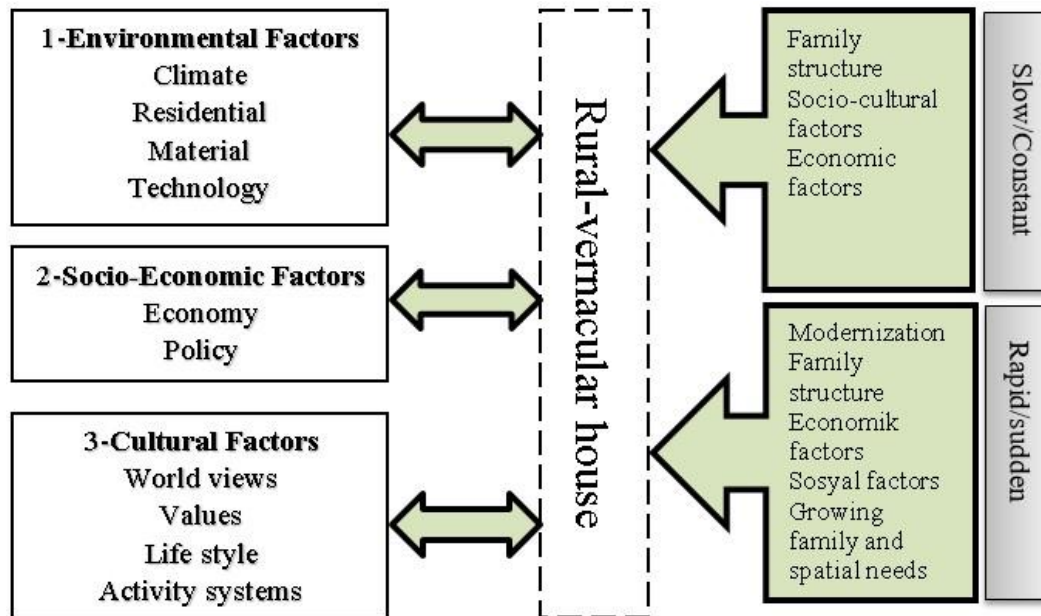


Figure 2.9: Rural-vernacular change in housing (Designed by the author)

This situation in which change is inevitable depends on the housing spaces, meaning shows differences between urban housing and rural housing. While there is a more comprehensive and detailed evolution in urban housing, it is seen that this evolution is sudden and sharp in rural housing. It could be argued that it is even easier to illustrate this in the context of Cyprus. Today, although the differences between urban and rural areas are gradually disappearing in Cyprus, it is possible to say that the evolution of urban housing is much more complex as it reflects the entire history of the island. On the other hand, it is seen that the houses in the rural areas have the characteristics of Mediterranean Regional Architecture and are not directly affected by the historicity of the island as much as in the city. For this reason, it is possible to say that the first leap in local housing started with the significant change that emerged in the middle of the 20th century in urban housing, being influenced by modern architecture. Changes in the form of the house are a reflection of the changes in the social lives of the users. There are also other factors that change and deteriorate the structural system and the materials of the houses.

At this stage, where the rural-vernacular architecture in Cyprus and its changes are discussed it is significant to mention the scientific studies on Cyprus. There have been many different scientific studies researching rural-vernacular and urban-vernacular housing in Cyprus. The different scientific studies mentioned below differ in terms of their approach to housing research and their content.

The unpublished master's thesis, which is related to the Ottoman influences in Nicosia, is Hıfsiye Pulhan's (1997) 'Influence of the Cultural Factors on the Spatial Organization of the Traditional Turkish House of Lefkoşa'. In this study, the Turkish house in general and its reflection on the island were examined. Three components of the traditional house form, namely the room, the halls, and the walled garden "havlı", are explained in relation to their living patterns.

Another, unpublished master's thesis study on the rural-vernacular architecture of Cyprus, is Özgür Dinçyürek's (1998) 'The Adobe houses of Mesaoria Region in Cyprus'. The aim of this study was the analysis of vernacular mudbrick houses in the Mesaoria region.

There are also some unpublished Ph.D. theses that study similar areas and are worth mentioning. Firstly, Özgür Dinçyürek (2002), in 'The Rural Vernacular Architecture of Cyprus (Northern)' aimed to examine the systematic development of the rural vernacular architecture of Cyprus by making a thorough classification of rural-vernacular housing typology.

Another study by Hıfsiye Pulhan unpublished PhD. thesis (2002). 'Analysis of Solid-Void Relationships as Design and Organization Principles in the Traditional Houses

of Nicosia,' in this study, the traditional environment of Nicosia is the selected case in order to analyse the traditional house form of Nicosia, and The spatial form and the mass form of the traditional Nicosia houses were analysed.

Özlem Olgaç Türker (2002) wrote 'A Model for the Conservation and Continuity of a Vernacular Settlement: Kaplıca Village, North Cyprus' aiming to develop a model for the sustainability and continuity of the vernacular environments in the case of Kaplıca Village that is a representative of rural vernacular stone architecture of North Cyprus.

Asu Tozan's unpublished master's thesis (2000) is titled 'Kıbrıs-Karpaz Bölgesi, Kaleburnu Köyünde insan-Çevre İlişkilerinin ve Konut Mekanının Değişimi', 'Change of Human-Environment Relations and Housing Space in Kaleburnu Village, Cyprus-Karpaz Region', and it mainly focuses on the environment-behaviour studies in the development of the traditional setting. The changing social values and accordingly the developed modern buildings in the traditional environments formed the starting points of the study. The changes are examined in a particular rural settlement. The differentiations in the spatial formation of both traditional and modern houses are defined.

Similarly, Fatma İlkin's (2000) 'Cultural Influence on Architecture Features: An Investigation of Different Ethnic Groups in Northern Cyprus' is another unpublished master's thesis where the effects of cultural factors on the architectural form and spaces of three ethnical groups that are Maronite's, Turkish, and Greek Cypriots, in three particular villages (Sipahi, Hisarköy, Maronik villages) are examined.

Another important there have different scientific studies researching urban houses in Cyprus. The different scientific studies mentioned below differ in terms of their approach to housing research and their content. Ali I. Yapıcıoğlu's (1995) "Ottoman Influences on Cypriot Domestic Architecture" (1571-1923) is an unpublished master's thesis which is related to the urban vernacular developments under the influences of Ottoman-Turkish style in Cyprus. The study emphasizes the building traditions on the island and their resemblances to Anatolia due to the Ottoman sovereignty on the island.

Bahar Uluçay's unpublished master's thesis (2007) is titled 'Houses With Two Independent Stories in the Development of Modernization Process in Social and Urban Context: The Case of Nicosia (1940-1970)'. The research exposes a transitional type between the single-story urban house of the British Colonial period and the succeeding multi-story housing examples, which can be named houses with two independent stories.

Another unpublished master's thesis study by Meryem Çoğaloğlu (2016) is titled "Kuzey Kıbrıs'ta XX. Yüzyıl Konutlarının plan Değişimi ve Gelişimi Üzerine Bir inceleme: Lefkoşa, Mağusa ve Girne örnekleme," "An Investigation on the Plan Change and Development of XXth Century Houses in Northern Cyprus: Sampling of Nicosia, Famagusta and Kyrenia." This study focuses on the history of housing in Northern Cyprus is defined in chronological order, examples of housing types are given, and the concept of the city and the houses in the cities of Nicosia, Kyrenia and Famagusta are examined.

Another study by Beser Oktay Vehbi (2012), 'Kıbrıs'ta Geleneksel Konut Dokusunun Sürdürülebilir Korunmasına Yönelik Öneriler', 'Recommendations for Sustainable

Preservation of Traditional Housing Fabric in Cyprus'. This study is to examines the traditional housing textures, 'Sustainability' in line with the concept of 'conservation'. This study emphasizes the need for evaluation of not only the 'Housing Stock' as immovable cultural assets, but also the environmental value as an intangible asset.

Another study by Havva Aslangazi and Pervin Abohorlu (2012), 'Dağlık Bölge Konut ve Konut Alanlarının Sürdürülebilirliği: Mallıdağ Örneği', (Sustainability of Mountainous Region Housing and Housing Areas: The Example of Mallıdağ) focuses on rural areas in the mountainous regions of Northern Cyprus. In this study, local housing and residential areas are handled in terms of environmental and sociocultural factors and within the scope of sustainability and today's change and transformation in architecture have been questioned.

Another study by Maria Philokyprou, Aimilios Michael, and Eleni Malaktou (2021) who worked collaboratively on "A Typological, Environmental and Socio-Cultural Study of Semi-Open Spaces in The Eastern Mediterranean Vernacular Architecture: The Case of Cyprus". This study focuses on the interconnections between architectural forms and human comfort, convenience, or pleasure in relation to the semi-open spaces found in the vernacular architecture of Cyprus. For the purpose of this research, characteristic traditional settlements found in the coastal lowland and mountainous areas, which represent three different climatic regions and topographies of the island were selected for an in-depth investigation.

2.6 Chapter Conclusion

In this section, the theoretical background of the thesis study consisting of the literature review about the rural-vernacular houses that form the original architectural character

of the built environment in the geography where the research was conducted and the determination of the change they have undergone were analysed.

First of all, the research studies and examples of rural-vernacular housing all around the world are mentioned followed by an explanation of rural-vernacular housing culture and environmental interaction in rural housing. Then the reasons behind the change are discussed based on explanations of the researchers who focused on, the understanding of culture as a result of the culture-housing relationship. These discussions are followed by the examination of change and continuity in Cyprus's rural-vernacular housing through rural-vernacular architectural typology using the selected examples from different geographies with similar typologies. Among these examples, there were houses built using adobe, plant branches, and wood as building material, located in the rural areas of continents such as Australia, Africa, and South America, in hot and semi-arid geographical regions where the annual precipitation is low, and stone was used in the rural areas of the forested regions with abundant annual precipitation. Finally, the studies focusing on local architecture in Cyprus, specifically on the rural-vernacular housing architecture in Cyprus and the changes these houses experienced over time are introduced. Finally, the studies focusing on local architecture in Cyprus, specifically on the rural-vernacular housing architecture in Cyprus and the changes these houses experienced over time are introduced.

Chapter 3

CHANGES IN RURAL-VERNACULAR HOUSING AND BÜYÜKKONUK VILLAGE (KOM-I KEBİR)

Nowadays, rural-vernacular or traditional lifestyles and building traditions are changing rapidly in the world. The traditional built environment is being replaced by new types of buildings, technology facilities and uses. However, in societies where tradition is still more valuable, rural-vernacular practices are not only preserved but also continue. In this respect, the island of Cyprus is an illustrative example of where tradition is still very valuable and continues to reflect in housing.

The island of Cyprus has a unique identity in terms of cultural accumulation and rural-vernacular architecture. For this reason, the study focused on Cyprus' rural-vernacular housing and became an indicator of how rural housing types are sustainable in the face of all kinds of changes, such as socioeconomic and cultural. When the general literature is examined it is important to note the studies on housing and rural-vernacular houses and how the subject is reviewed in this context.

3.1 Cyprus in the Mediterranean Sea

The island of Cyprus is located in the Mediterranean Sea. After Sicily and Sardinia, Cyprus is the third largest island in the Mediterranean Sea. Cyprus is pinpointed in the Mediterranean region between 35° and 34° north latitude and 33° and 32° east longitude and is in a “semi-arid” climate zone. The island is separated by sea from Turkey in the north, Syria in the east, Egypt in the south, Greece in the northwest, Lebanon, and

Israel in the southeast (Figure 3.1). The area of the island is 9251 km², 3355 km² of which is governed by the Turkish Republic of Northern Cyprus (TRNC). This area covers approximately 36% of the island of Cyprus. Cyprus has a long history, however, information about the island's first settlers is limited. According to the latest archaeological findings, the first settlers of the island BC came from the Anatolian, Syrian or Palestinian coasts in 7000-6000 BC (Collective, 2000). Because of its important geographic and strategic location, the island has been hosting many different civilizations throughout history. Since the island is located between three different continents, Asia, Europe, and Africa, it has been under the cultural influence of both the East and West. In relation to these influences of different cultures, the culture of the island sustains its own existence with its arts, tradition, and ways of life.



Figure 3.1: Cyprus and its surroundings

3.2 Change in the Context of Cyprus

The reasons and dynamics for change need to be clarified for an accurate reading of change and transformation in rural and urban environments. For example, since migration is a natural process for islands, the confrontation of change is generally more

dramatic for the islands. Sudden and rapid changes such as wars, disasters, modernisation by industrialisation, or legal regulations are more visible than constant and slow changes (such as family growth etc.) in past times. Multi-layers of different cultures on Cyprus Island have fluctuated in the confrontation of change until modernisation and transformation as a consequence.

The first factor in sudden and rapid change is the long-lasting Cyprus dispute resulting in the division of the Island in 1974 and hence the migration of Turkish Cypriots to the North and Greek Cypriots to the South. This has led to abandoned dwellings within rural areas which were later settled by Turkish immigrants from Turkey and Cyprus Turkish immigrants from the South. The rural-vernacular residential settlements after 1974, when the island was divided into two, did not show a rapid change-transformation due to the uncertainties experienced in every sense, but especially with the property issues. In the face of these uncertainties, while existing users made changes, citizens who came to the island from Turkey did not make significant and permanent changes to their residences.

Due to this uncertainty, there was a marked stagnation in the construction sector and architectural environment in the country until the end of the 90s. The second factor is the construction boom in the northern part of Cyprus, prior to the acceptance of the Republic of Cyprus to the European Union in 2004. A “rapid construction process” started in Northern Cyprus with the first discussion of the Annan Resolution Plan, which was the basis of the agreement for the comprehensive solution of the Cyprus problem, put forward by the United Nations (UN) in 2004 (Hoşkara, & Hoşkara, 2007; Dinçyürek & Türker, 2007,). Due to the debates about being a European Union territory in the North of the island, a visible vitality has emerged in the construction sector, and

changes and developments have started in both urban areas and rural settlements. Although the Island is divided geographically as north and south, politically the Republic of Cyprus represents the whole island in the international arena. Parallel to the re-unification efforts of the two communities, the raised land-ownership discussions have created sudden and rapid tension in the construction sector.

3.3 Vernacular Houses in the Historical Context of Cyprus

Before explaining certain architectural characteristics of the rural-vernacular Cyprus houses, it would be beneficial to see the relationships between the urban traditional and rural-vernacular forms in the natural context of the region.

Cyprus has been the centre of attraction in the Mediterranean for centuries and has always been an island of immigration. It has hosted many cultures and civilizations, from Phoenicians, Egyptians, Assyrians, Persians, Greeks, Romans, and Byzantines, to Arabs, Franks, Genoese, Lusignans, Venetians, Ottomans and inevitably the British (Hill, 2010), which naturally resulted in its complex socio-cultural structure being reflected in its architecture.

This multicultural identity has vital importance for identifying the traditional and rural-vernacular built environment of the island, particularly in the urban and rural environment. Within this context, the vernacular architecture of the island can be investigated under two areas, which can be categorised as rural-vernacular and urban settlements. In the urban environment, Ottoman and British colonial styles were the major contributions to the traditional housing development of the island since the pre-historic periods (Numan, Pulhan, & Dinçyürek, 2001).

As stated by Dinçyürek (2002), the traditional buildings and the patterns of the urban settlements mostly represented the Medieval–Ottoman synthesis. particularly the capital city, Nicosia was structured with organic streets that were strongly defined with houses in the Ottoman style (Dinçyürek, 2002, p. 102). Also, for the capital, as stated by Pulhan (2002), it is possible to see the built environment of Nicosia with a synthesis of different architectural forms from different cultural backgrounds (Pulhan, 2002, p.102).

Another important description of urban residential architecture is what Ateşhin (1997) says:

“In town, adobe and stone have always been used together in the vernacular buildings, with adobe being plastered internally as well as externally. Street-facing walls were mostly built completely in stone or had their windows and doors lined with a moulded stone frame. The stone frame received the external shutters directly, through the use of iron hinge fittings. Even when the stone was used for the walls it was plastered. Construction of the wall proceeded by building an internal and an external face from larger shaped stones, internal space being filled with mortar and smaller stone chippings that would become available due to the dressing of the stones. In townhouses, courtyards would be comparatively small and placed at the back of the building away from the street. Single and two-story buildings would be roughly balanced with no apparent social reason. A regional hallmark in north Cyprus, as in Turkey, is the extension of the living space at the second–floor level by a jutting oriel into the street; this usually had additional treatment in the form of cantilevered timber bracket beams and woodwork screens to provide privacy for the interior” (Ateşhin, 1997, p.1554).

As stated above, in the urban environment, the greatest contribution to the architectural development of the island has been the Ottoman and British colonial styles. In this frame, the island met with modernity in the process that started with its lease to the British Commonwealth of Nations by the Ottoman Empire in 1878 that lasted until the establishment of the Republic of Cyprus (1960).

In this process, which started with its leasing to the British Commonwealth of Nations, important breaking points affecting urban and rural-vernacular areas are known on the island. It is natural that there has been a constant/slow and rapid/sudden change experienced under the influence of these important factors. You can see these factors that caused the changes in the island with their dates in the timeline below (Figure 3.2).

Cyprus has experienced important developments, especially in industry and also in technology, culture, education, and health. Reinforced concrete began to replace the stone, mudbrick and wood materials used in urban dwellings; however, in rural dwellings made in line with the needs of the users that have existed for centuries in a constant and slow change, it is seen that the use of stone, mudbrick, and wood materials are continued.

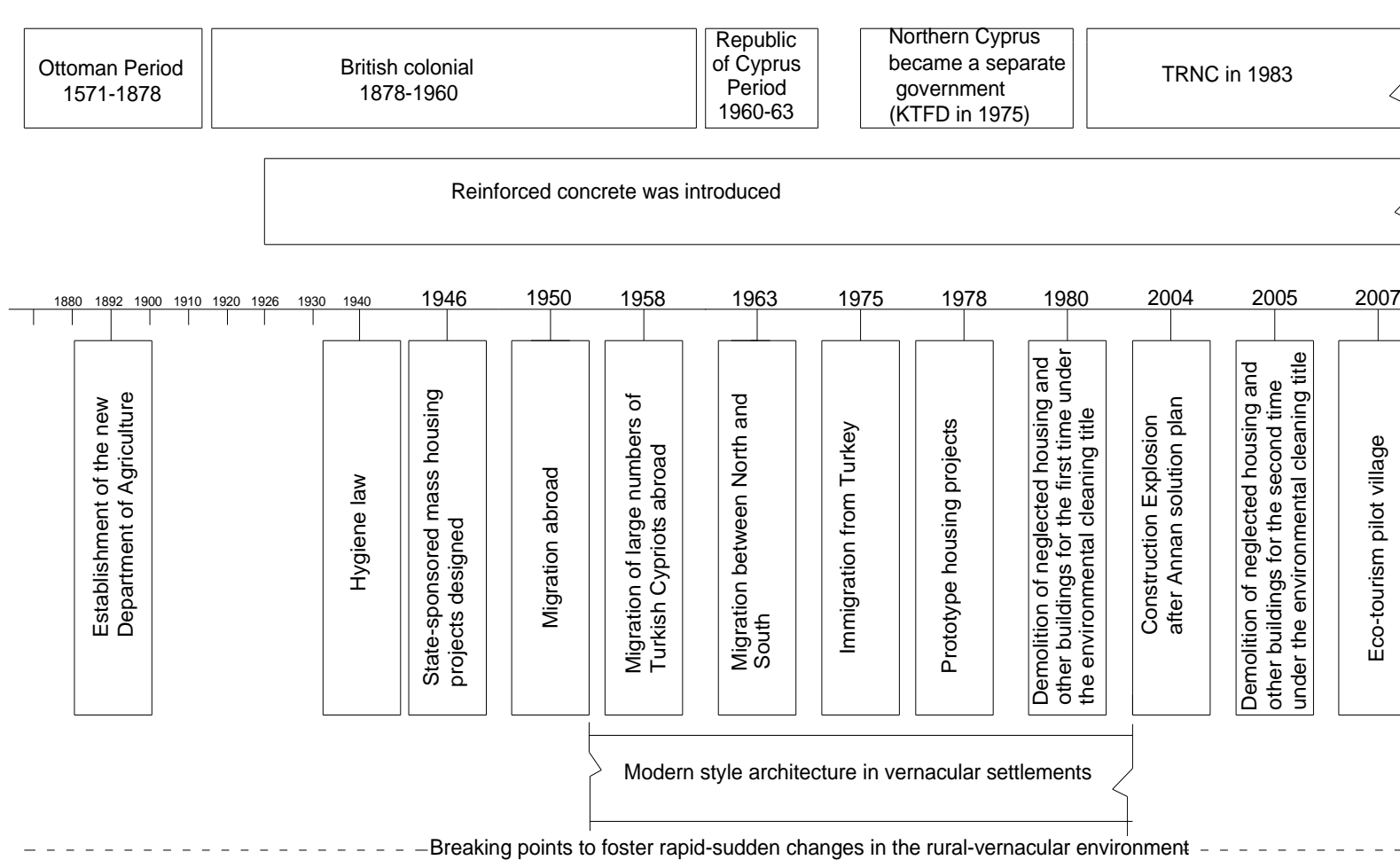


Figure 3.2: Timeline for constant /slow and rapid/sudden change in urban and rural-vernacular areas (Designed by the author)

Nevertheless, a rapid and sudden change begins in this period under the influence of modernization attempts. Toilets in unsanitary conditions located in open spaces are improved and located close to or inside the dwellings; western-style bathrooms and kitchens are added. Another sudden change supported by the government in recent years is the reinforced concrete, villa-like dwellings built in the gardens of the houses with large parcels according to the type of projects given by the government (Figure 3.3). There is no trace of rural-vernacular architectural features. They are completely classic extra-urban housing types. This caused the original character of vernacular environments to deteriorate even further (Günçe, Ertürk, & Ertürk, 2008).

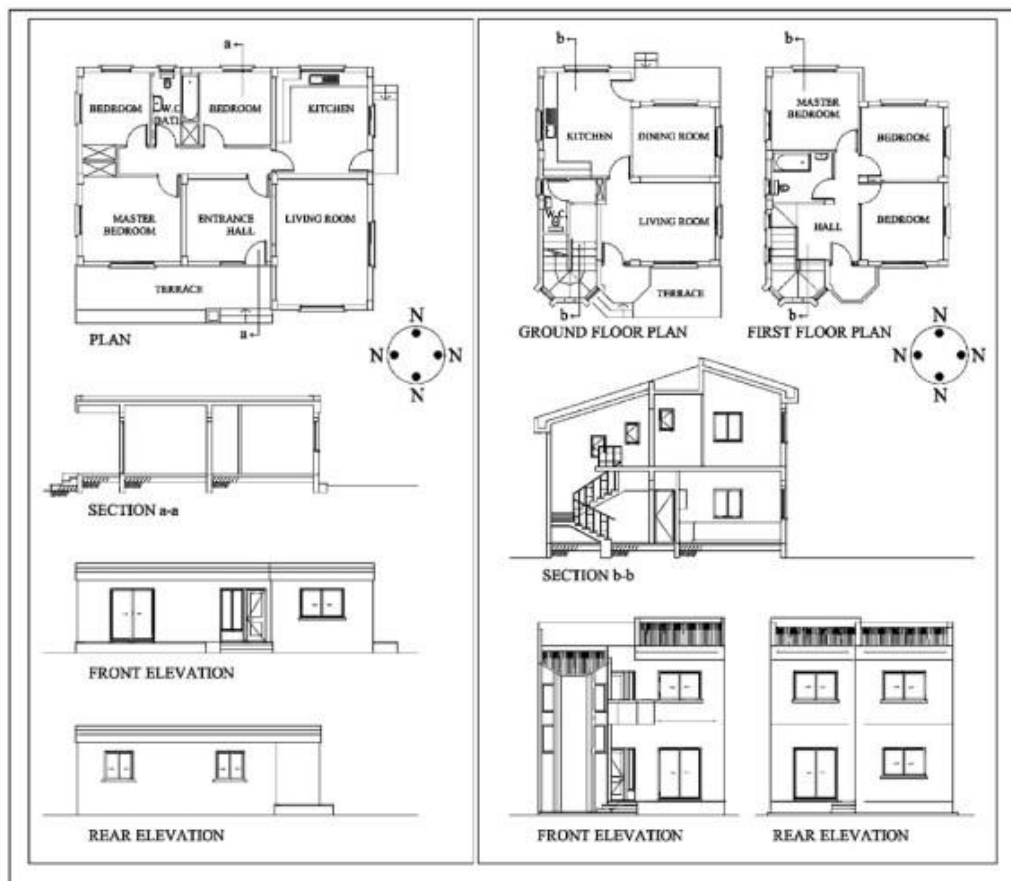


Figure 3.3: Examples of single and two-storey house designs proposed by the Northern Cyprus Social Housing Office (Günçe, Ertürk, & Ertürk, 2008, p. 830).

In the island's continuous immigration and emigration history starting from the middle of the 20th century, three fundamental mass displacements have been effective. The first one is the mass migration of Turkish Cypriots towards safer regions who were affected by the ethnic conflicts in 1958 (Kıbrıs Türk Milli Arşivi, 1961). Secondly, the Greek Cypriots living in the north of the island were transferred to the south while Turkish Cypriots living in the south were transferred to the north as a result of the '1974 Peace Operation that divided the island into two segments administratively (Keser, 2006). The third is the migration which started with the Turkish citizens from Turkey collectively being encouraged to settle in Northern Cyprus after February 1975 and again in 1983. Despite all these movements at first, it is seen that rural dwellings did not show a rapid change due to the uncertainties experienced in every aspect of life, especially with property issues. Users that were the original owners of the title deeds made the necessary changes in their dwellings; while migrant users both from the south of the island and from Turkey did not prefer to make permanent changes in their given houses (Akpınar & Türker, 2008). However, after the Annan Solution Plan proposal in 2004, the entire island was declared EU territory and a revival in the construction sector occurred (Hoşkara & Hoşkara, 2007; Dinçyürek & Türker, 2007; 2007; Tozan & Akın, 2009). In parallel with this, Turkish immigrants from Turkey after 1974 and Turkish Cypriots who immigrated from the south of Cyprus to the north began to make rapid and sudden interventions to the houses they lived in, and a great example of this can be seen in Büyükkonuk village. Büyükkonuk village (Kom-i Kebir), provides a convenient sampling environment to determine how the rural-vernacular housing responds to slow or sudden changes as a result of changes made by the users.

3.4 Rural-Vernacular Houses of Cyprus

The rural-vernacular settlements in Cyprus have developed in a way that responds to the rural-vernacular environmental characteristics, the traditional agricultural lifestyle, the building materials available in the environment, and the climatic conditions. The rural-vernacular houses of Cyprus are the best evidence of the reflection of the previous lifestyles, cultures, and physical factors on the closed / semi-open / open spaces. Ethnographic text on the rural life of Cyprus defines the family as the most basic social unit whose main source of life is agriculture and livestock, as self-sufficient, and creating its own economic conditions (Tozan, 2000; Dinçyürek, 2002; Pulhan & Dinçyürek, 2004).

The family carries out general social and business activities within the confines of the house. For this reason, these houses consist of parts related to products that contribute to their living at a minimal level and to the family economy at a maximum level. It is because of this feature that Christodoulou (1959) describes rural dwelling as ‘a house small enough to accommodate and a large land as far as the eye can see’; making an analogy to a workshop, laboratory, or factory.

When looking at the island in general, the settlements formed by the basic local architecture constitute an important part of the built environment. Housing forms are spatial-physical expressions that meet the spatial needs and actions specific to that place, and they often evolve according to functional rather than organic, pragmatic, and ornamental needs (Tozan, 2000; Dinçyürek, 2002). Its architecture is as simple and plain as possible, and it is not seen in any richness or diversity on its facades. The materials are generally local materials and the most commonly used ones are ‘stone’

and ‘adobe brick’. Adobe was the most popular construction system in the rural-vernacular settlement in the lowland regions of the island (Pulhan, Dinçyürek, 2004, p.155). These local materials do not leave negative permanent effects in nature that can return to nature. In addition, it is transformed by mixing with the soil. Environmental factors; climate, vegetation, topographic structure and socio-economic factors played an important role in shaping the rural-vernacular settlements (Dinçyürek, 1998; Tozan, 2000; Dinçyürek, 2002; Pulhan, 2002; Türker, 2002; KTMMOB, 2005; Dinçyürek & Türker, 2007; Davulcu, 2009).

According to Rapoport (1969), the housing style, spaces, and the relations between these two, which emerge in a certain climate, with certain materials and the possibilities and limitations of a certain technological level, reflect the views of the people in that environment about the ideal life. The ideal environment sought reflects many sociocultural factors such as religious beliefs, family, social order, livelihoods and social relations between individuals. Housing forms are under the influence of climatic effects, location selection, material possibilities and preferences, and structural techniques much more than all other buildings (Rapoport, 1969). Therefore, summarising the basic typologies and mixed typologies will be the next section of this study.

3.4.1 Basic Typologies of Rural-Vernacular Houses

Cypriot rural-vernacular houses are significant with their proximity to each other and have narrow streets in the built environment. They usually stem from simple, organic, utilitarian and functional needs (Egoumenidou and Floridou, 1987; Tozan, 2000; Dinçyürek, 2002; Kırşan and Çağdaş, 2004; Davulcu, 2009). The design in all rural dwellings has a maximum of two floors and resembles simple rectangular prisms put side by side around a courtyard (Türker, 2002; Dinçyürek, 2002; Dinçyürek and

Türker, 2007). Philippides (1997) claims that the rural-vernacular housing types seen in the Mediterranean region, highly likely come from the simple shepherd's tent and its derivative which is the only design (room) that allows both shepherds and animals to stay in nature for a temporary period of time. This is a single-unit simple space, which does not have any separators and all functions of daily life occur in one place, which is later multiplied by dividing or making additions. The housing is flexible and adaptable in the face of changes for centuries due to the modularity and linear order at the core of the Cypriot regional-rural housing typology (Dinçyürek & Türker, 2007; Türker, 2011). As places where daily life takes place they contribute to the social and economic activities of the family, and because of this feature rural housing is defined as small indoor spaces for accommodation in a large open space, which allows many functions that include production (Christodoulou, 1959; Ateşin, 1997).

Dinçyürek (2002) categorises the rural housing basic foundation types, which are widely used throughout the island into three main types according to their plan features. These types which are defined according to their space organization are: 'Units Without Hall', (Sündürmesiz) 'Units with Inner Hall' (İç Sündürmeli) and 'Units with Outer Hall' (Sündürmeli) (Table 3.1) and the most common type is rural dwelling type with outer hall. Mixed types formed by the articulation of these basic typologies are the result of a slow and continuous change that rural housing has undergone.

Table 3.1: Three basic housing typologies of rural-vernacular houses in Cyprus

			<p>1-Street 2-Courtyard 3- Outer Hall /Arcaded 4-Room 5-Backyard 6- Stone Oven 7-Inner Hall 8-S-Service Spaces</p> <p>Cs: Closed space Ss: Service space Scs: Semi-closed space Os: Open space</p>
<p>A- Units Without Hall (UWH)</p>	<p>B- Units with Inner Hall (UIH)</p>	<p>C- Units with Outer Hall (UOH)</p>	

In order to understand the Cypriot rural-vernacular residential architecture it is necessary to look at the spatial relationships between the three main spatial components of the house, the closed spaces (room and service spaces), semi-open spaces (inner hall or outer hall) and the open spaces (courtyard) (avlu-havlı) (Table 3.1). Socio-cultural factors are the primary factors affecting the housing form (Rapoport, 1969; 2005; Ceylan & Bulut, 2017), affecting the courtyard house more than a townhouse or single houses. This makes perfect sense considering both the diversity of the courtyard house typology emerging in different geographies and the fact that any house with a courtyard is more open to change and development throughout time and any period of use.

Studies on Cypriot rural-vernacular housing reveal that Cyprus rural dwellings are mostly located in the courtyard facing south, while the rooms are accessed from the 'courtyard' in the units without hall house typology. There is an intermediate space connecting the interior and exterior spaces in other typologies. In the units with inner

hall typology, the inner hall located between the rooms and aligned to them opens to the courtyard with a single arch, while in the units with outer hall typology, the outer hall is generally located in the south of the rooms opening to the courtyard with multiple arched openings; thus taking the sun rays directly into the house in winter and providing protection from the sun in summer (Tozan, 2000; Dinçyürek & Numan, 2001; Türker, 2002; Dinçyürek, Mallick & Numan, 2003; Dinçyürek & Türker, 2007). The spaces in the housing are not named according to special names, but according to the basic function or functions they carry. Considering the relationship between the dwelling and the street, although it is not seen in every rural area it is seen that the courtyard is surrounded by although infrequently seen walls higher than eye level and defined by closed space in Büyükkonuk village.

3.4.1.1 Units Without Hall (UWH)

This plan type, which is described as the type without a hall includes the oldest dated and plain houses which are generally seen in hot climate regions. This type of dwelling consists of rooms arranged side by side that are connected by a courtyard. The courtyard, as a typology that addresses various dimensions of human needs has gained general acceptance in architectural cultures that have developed in different continents around the world.

The courtyard, as a typology that addresses various dimensions of human needs has gained general acceptance in architectural cultures that have developed in different continents around the world. The rural-vernacular houses of Cyprus are built in the courtyard. This feature is the most important defining feature of Cypriot rural dwellings. The location of the rooms and every other unit located side by side in the courtyard which forms the backbone of the residences in the rural area is dominated by the use of courtyards in the examples of houses without halls.

3.4.1.2 Units With Inner Hall (UIH)

Within the scope of Cypriot rural-vernacular housing examples, housing types with inner halls are seen frequently. Depending on the climate, the inner hall is closed in some areas and open in others. In its open form, it is connected to the courtyard with a one-sided arch. It is the main space where most of the common functions of daily family life take place. Houses with interior halls also undertake the task of intermediate spaces that provide the passage of closed rooms to the courtyard.

3.4.1.3 Units With Outer Hall (UOH)

This plan type in the Cypriot rural-vernacular housing examples is not rare as housing types with outer hall (sündürme) are seen in many instances. Rural-vernacular houses with outer halls are built especially in geographical regions with hot climates. Since the earliest periods of architectural history, it appears as an architectural element that protects people from the rain, and more often from the sun from a functional point of view (Alioğlu, 2000). The most important spatial feature of the house is the outer hall (Sündürme) space. It is a semi-open/semi-closed space with three sides and a covered roof, the front of which is divided by two or more arches. This space, which shows itself effectively in housing planning is used as an intermediate space transition area (Tozan, 2000; Pulhan, 2002; Türker, 2002; Dinçyürek, 2002; Philokyprou, Michael, & Malaktou, 2021). As in houses with an inner hall, the outer hall space is the main space where most of the common functions of daily family life take place.

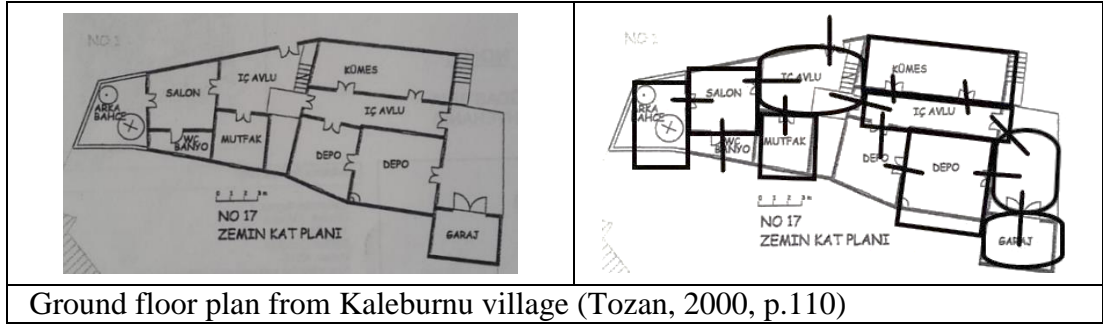
3.4.2 Mixed Typologies of Rural-Vernacular Houses

Within the scope of rural-vernacular housing examples, where 3 basic types are intended to be expressed, the mixed rural housing types could not be ignored, where indoor, semi-open, and open spaces are located under one roof. Mixed types formed by the articulation of these basic typologies are the result of a slow and continuous

change that rural housing has undergone. The mixed local housing types compiled from different villages and spatial relations are given below (Table 3.2).

Table 3.2: Examples of rural-vernacular mixed housing from different villages

<p>Ground floor plan from Büyükkonuk Village (Drawn by the author)</p>	
<p>Ground floor plan from Büyükkonuk Village (Drawn by the author)</p>	
<p>Ground floor plan from Akova village (Drawn by the author)</p>	
<p>Ground floor plan from Akova village (Drawn by the author)</p>	

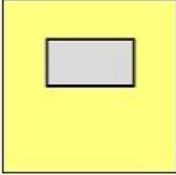
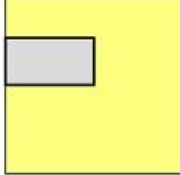
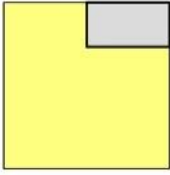
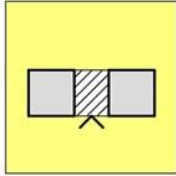
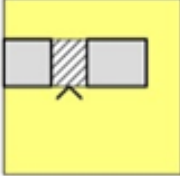
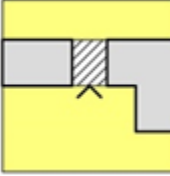
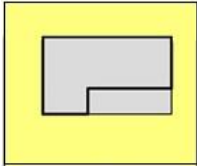
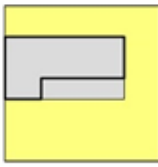
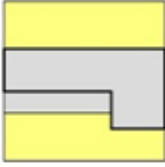


Ground floor plan from Kaleburnu village (Tozan, 2000, p.110)

3.4.3 Position of the Rural-Vernacular Houses within the Plot

When we look at the rural-vernacular housing examples of Cyprus, the relationship between the courtyard and the space is very important because the house basically reveals a courtyard-oriented spatial order (Ταρεούλh,1963). The main building and the services can be organised around the courtyard as parallel to one side as an I-shape; an L-shape or a U-shape (Türker, 2002, p. 78). The fact that the courtyard is completely compatible with the hot climate means the widespread use of the front and back makes the location of the house within the plot important (Table 3.3). For this reason, the expansion of the house (which has changed with the new additions applied within the scope of the changes made to the house) within the plot is important in terms of the spatial organization of the house. Showing the location of the house within the plot can give clues as to which direction the additions can be made. For this reason, 3 basic rural-vernacular house types in the parcel were examined. In this context, at fieldwork, all the houses examined are shown in more detail in Chapter 4 according to the sub-types (See tables 4.4, 4.5, 4.6)

Table 3.3: Plot location plan schemes of rural-vernacular housing typologies

Housing Type N ▲	The four sides of the house are independent from the land boundary.	One side of the house adjacent to the land boundary	The two sides of the house are adjacent to the land boundary.
Units Without Hall- UWH			
Units With Inner Hall- UIH			
Units With Outer Hall- UOH			

3.5 Rural-Vernacular Housing Components in Cyprus

The spaces in the Cypriot rural-vernacular housing can be studied in four categories: ‘indoor’, ‘semi-open space’, ‘open space’ and ‘service spaces (Figure 3.4). The room that forms the closed spaces, is a living space used when the family needs privacy or protection from environmental conditions (Christodoulou, 1959). It is used in a single space to respond to multi-purpose functional requirements. Generally, the rooms that are arranged side by side in an order facing south, in the East-West direction, can be entered directly from the courtyard, or by passing through the outer or inner hall. Outer and inner halls that have semi-open space features function as an intermediate space connecting the interior and exterior spaces (Pulhan, 2002; Dinçyürek and Türker, 2007) and increase the privacy of the room; forming the backbone of the spatial

organization. In these spaces that are oriented to the south in a way that will provide the highest level of climatic benefit and balance between macro-microclimate, many daily activities based on agriculture, animal husbandry and family life are held (Oktay and Önal, 1996; Pulhan, 1997; Tozan, 2000, Türker, 2002; Dinçyürek, 2002, Dinçyürek & Türker, 2007, Türker, 2011). The courtyard, which has the characteristic of a defined open space, is the key space that provides the entrance to the house, determines the planning order, holds all the units of the rural house together and connects them to the public outdoor space (street) (Tapεογλh, 1963; Tozan, 2000; Pulhan, 2002; Türker, 2002; Kırşan & Çağdaş, 2005; Dinçyürek & Türker, 2007). As in closed and semi-open spaces, the multi-purpose courtyard is also used for activities based on agriculture and animal husbandry. Spaces supporting these activities: aşevi (kitchen), warehouse (storage/cellar), barn, Turkish bath and toilet are located in the courtyard and their entrances are provided from the courtyard; there is also a water well and an earth oven here.

It has been observed that in the spatial organization of the original rural housing typologies, each closed space has a direct relationship with the open or semi-open space and other closed spaces adjacent to them and there are existing space typologies that vary according to these multiple connections. In fact, it has been determined that some new space typologies have emerged depending on the change that the housing has undergone. In this study that aims to read change through the changes that occur in the space organization, the interpretation of the numerical results of the space syntax method used is sufficient to clarify the subject and it is expected that the findings related to this change in space typologies will be supportive in order to draw a comprehensive conclusion.

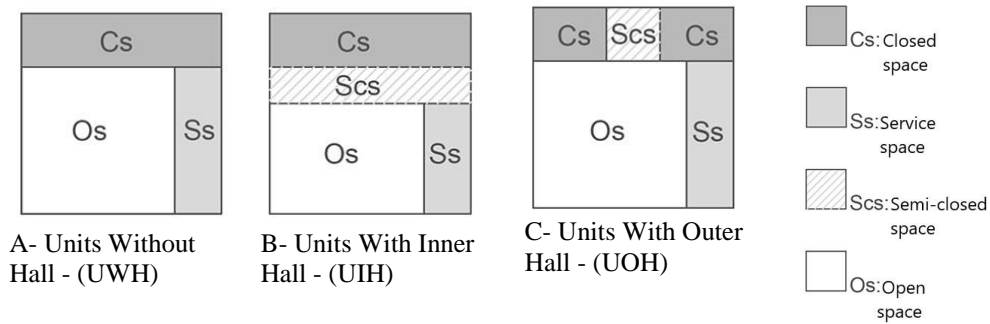


Figure 3.4: Spatial characteristics of Cypriot rural-vernacular housing (Designed by the author)

3.5.1 Closed Space: Room

The closed space (room) is a living space that emerged especially because of the family's need for privacy or protection from environmental conditions (Christodoulou, 1959). The indoor space has been created to respond to multi-purpose functional requirements in a single space and is a self-sufficient living unit. As mentioned by Pulhan & Numan (2005), the room is offered for the private use of the nuclear family in the concept of the extended family, and due to this independent character, it is often called 'home' in both urban and rural housing. Door and window openings in indoor living spaces also allow the hot air rising from the square-shaped opening above the door frame to come out. These small openings in the upper level are positioned to allow the desired winds through the cross breeze (Türker, 2002, p. 81). The closed spaces, which are arranged side by side in a linear arrangement, generally parallel to the East-West direction, can be entered directly from the courtyard or it is entered from the porch or the inner hall. In some examples, indoor spaces are positioned on top of each other and connected by an external staircase directly or by positioning side by side, again by means of a stretch. In some of these houses, also known as two-storey 'hanay', which generally has a cantilevered balcony, the ground floor serves as a transition from the street to the courtyard.

3.5.2 Semi-Open / Semi-Closed Space: Inner Hall (İç Sündürme) and Outer Hall / Arcade (Sünderme)

According to Philokyprou, Michael, and Malaktou's explanations, this space; semi-open spaces are largely incorporated in vernacular dwellings in Cyprus during the 19th and 20th centuries and formed diachronically significant socio-cultural, functional, and environmental features of the vernacular architecture of the area (Philokyprou, Michael, & Malaktou, 2021). Due to the cool temperate softness of the Mediterranean climate, the sloping and interior sofa which accompany indoor and outdoor spaces and are very important main spaces, are used effectively.

This space 'arcade' (sünderme in the folk language) is "the exit in front of the house", a wide sofa in which the doors of the rooms are opened in the houses. It is used to mean the overhang in front of the house, the part of the tiled roofs overflowing from the building (Akçam, 2016). In the Bener Hakkı Hakeri dictionary, which is the dictionary of the Cypriot Dialect, the word sünderme is explained as follows: "It is expressed as a roof built to protect from rain or sun and the back of which is given to the wall".

According to Pulhan (2002), the outer hall is referred to as the 'Sünderme' and it is an intermediate space between the indoor and outdoor space of the house and between the public street and private-family lives. It is a transition due to functional climatic and visual requirements (Pulhan, 2002, p.107). In addition, in a study by Pulhan & Numan (2006), 'without a doubt, the climatic condition of the island played an important role in the emergence of arcade (Sünderme) in the organization of space and development of the general layout with regard to the garden', they express as (Pulhan & Numan, 2006, p. 115).

In the example of a rural-vernacular house with a courtyard in Cyprus, one of the most important places is the arcade (Sündürme). It consists of arches divided into a minimum of 1 (infrequently seen), 2, and a maximum of 5 or more openings in the front, with three sides and the top of the semi-open space being closed (Figure 3.5). With the enclosed spaces on one side and the arches connecting to the courtyard on the other, the covered arcade, defined as the portico is oriented south to provide the highest level of climatic benefit (Figure 3.6).



Figure 3.5: Example of a rural-vernacular house with 3 arches, from Büyükkonuk village (Photo: Leyla Çınar Algül)

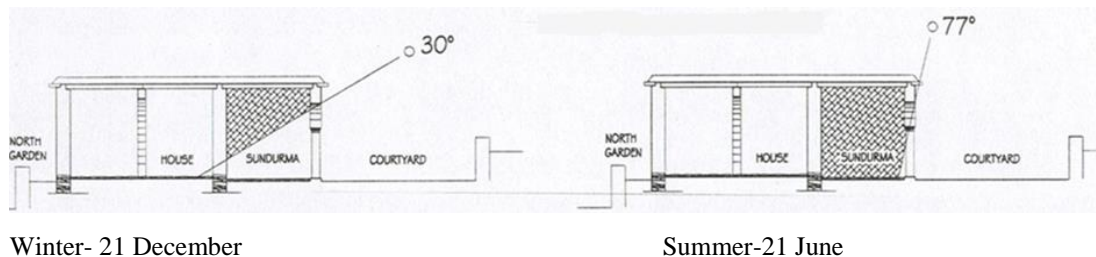


Figure 3.6: The position of the sun's rays in a semi-open space compared to winter and summer months in the rural dwelling of Cyprus (Türker, 2002)

These semi-open / semi-closed spaces served for transitions between indoor and outdoor, private and public, and micro-climate and climate (Pulhan & Numan, 2001; Dinçyürek & Numan, 2001; Türker, 2002; Türker, 2007). In this way it provides shade to the south wall of the rooms, providing a cool place in summer while allowing

the sun to enter in winter. In this place, which is used as a transition space between spaces, many activities such as sitting, sleeping, resting, laundry, cooking, preparing food, eating, hosting guests, embroidery, and dealing with agricultural products are carried out (Oktay & Önal, 1996; Pulhan, 1997; Tozan, 2000; Türker, 2002; Dinçyürek, 2002, Dinçyürek & Türker, 2007). The sofa is a common space between rooms which has enriched the housing design. With the opening of the sofa, rural housing plans have turned into squares or rectangles close to squares. In the countryside, it has found many applications for houses with courtyards and gardens.

3.5.3 Open Space: Courtyard

The Cyprus rural-vernacular dwelling presents a typical courtyard-oriented spatial order. When we consider the traditional agricultural lifestyle, the courtyard as an outdoor space is an indispensable part of the rural dwelling. The courtyard (avlu in Turkish, havli in local, Cypriot Turkish and avli in Greek), which can be square or rectangular in plan, is the common area where the connection between all spaces is provided (Oktay, 1998, Pulhan, 2002). In rural houses where there is no arcade (sündürme), the courtyard, which we call defined open spaces, takes over the circulation task (Türker, 2002; Dinçyürek & Türker, 2007). The courtyard is the most important space that determines the planning order that provides access to the house and has the key role that holds all the units of the rural house together and connects them to the public outdoor space (street). There are houses that can be directly entered from the street to the courtyard, as well as houses that can be entered directly from the street. The courtyard can be used for multi-purposes as in indoor spaces, such as embroidery, for traditional handicrafts such as basket making, and jug making, activities, such as bread and food making, and for cleaning and processing agricultural products such as grapes, olives, and carob (Figure 3.7). Children play freely here;

kitchen-soup kitchen, workshops and animal shelters are located here; functions such as resting and hosting guests (semi-open space) can also take place here (Dinçyürek, 1998, Pulhan, 1997, Pulhan & Numan, 2005, Türker and Dinçyürek, 2004, Kırşan and Çağdaş, 2004, Türker, 2002). Outdoor use is not limited to the courtyard, and flat roofs can also be used for drying food or even sleeping. According to the seasons, the use of space remains the same for most functions; certain functions such as sleeping indoors in winter can move to open spaces in summer (Oktay & Önal, 1996; Türker, 2002).

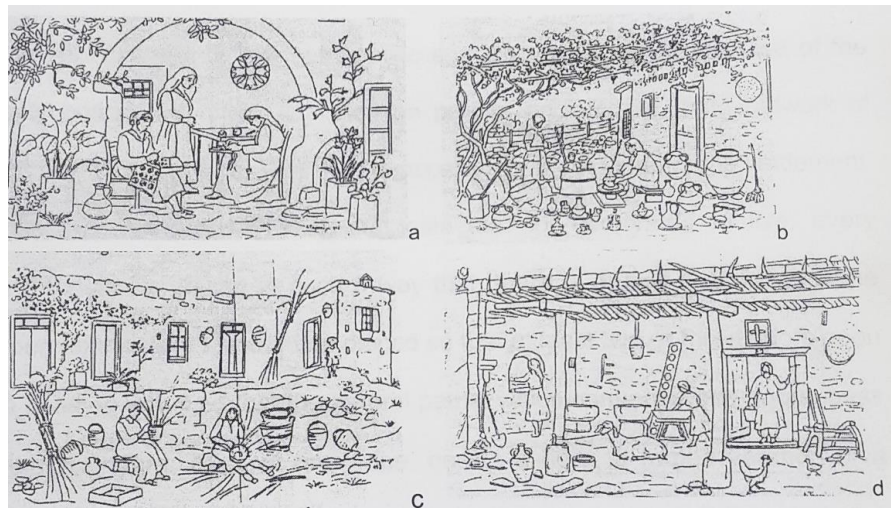


Figure 3.7: Daily life in the courtyard, a- Lacemaking in the courtyard; b-pottery-making in the courtyard; c- Basket-making in the courtyard, d-Variety of uses of the courtyard (Ταρσούλης, 1963; Oktay & Önal, 1996; Türker, 2002)

The courtyard acts as a balance in the relationship between privacy, macro-micro climate and indoor-outdoor space (Dinçyürek & Türker, 2007). In rural houses where water is important, a water well and an earthen oven are also located in the courtyard. Unlike the exterior, in the courtyard house typology, the courtyard on the island is defined by closed or semi-open spaces and garden walls to which the service spaces are backed, instead of being surrounded by closed spaces. In addition, although the climate alone is not decisive in the form of housing, it is seen that the climate is quite

effective in the formation of the courtyard housing type (Rapoport, 1969; Dinçyürek, Mallick, Numan, 2003).

3.5.4 Service Spaces: Kitchen (Aşevi), Depot, Barn (Ahır), Bath (Hamam) Toilet

Kitchen (Aşevi): The kitchen, which is a cooking place in the simplest sense in the historical process, has changed and developed with the history of humanity. The kitchen in rural houses in Cyprus generally has a square and rectangular plan. It is generally located in the East-West direction and faces south. The kitchen shows different features according to rural housing types. The common feature of the kitchen location in rural housing types with no porches and inner sofas is that the kitchen opens directly to the courtyard. In the example of a rural house with a shed, access to the kitchen is sometimes from the courtyard and sometimes from the shed. In some sample types, the kitchen is one of the existing rooms located side by side, while in some samples it is located in the courtyard with other service areas close to the entrance, and this kitchen space is called the ‘aşevi’ (food house) kitchen. As a dictionary means, aşevi is the place where food is brought to a state to be eaten for eating and drinking, meaning, it is cooked and seasoned. Aş is a Turkish word meaning prepared food. Since there is a life based on agriculture and animal husbandry in rural housing and it is used very frequently in daily life, a more suitable and larger space is needed. For this reason, the soup kitchen is located outside the main indoor area of the rural house, close to the house, or in a corner within the courtyard. The soup kitchen has a larger area than the kitchen space in the rural residence. For this reason, many activities were carried out in the soup kitchen. While the daily food was being cooked in the soup kitchen, the dough kneading, halloumi process for pressing into cubes and boiling wheat in the summer were also done here. In addition to preventing loss of work and

time, it is also an indicator of the intensity of the connection between the soup kitchen and the outside (courtyard).

Depot: Storage function could take place anywhere in the house, there was always a specific closed space allocated particularly for large-scale storage of grain, straw, or other animal feed. warehouses, stand out as one of the important spatial elements in rural-vernacular dwellings. The dimensions and spatial characteristics of the volumes of the depots differ. Storage areas are also used as cellars, which are also called the same for smaller places where winter and summer foods are stored. In some examples of rural dwellings, arches, and mezzanine floors (Musandıra) at the width of a room are used in the carrier system of the space, which is used for different purposes (Tozan, 2000; Dincyurek, Mallic & Numan, 2003).

Barn (ahır): Since animal husbandry was the most important source of livelihood in rural life, animals and their stables were important. Barns formed at close distances side by side in the courtyard; but, kept away from living quarters. The main concerns of the location of the domestic animals depend on the seasons and the features of the animals. Accordingly, they were placed in open, semi-open, semi-closed, and closed spaces (Tozan, 2000; Dinçyürek, 2002).

Bathroom (hamam): The baths, which are generally seen in rural residences in many Turkish villages were built close to the kitchen and sometimes accessible from inside the kitchen and sometimes from the courtyard. There are specimens with a hemispherical dome and a semicircular, sometimes square, rectangular base. In some examples, the lighting problem was solved by putting glass pieces inside the dome (Tozan, 2000; Dinçyürek, 2002; KTMMOB, 2005).

Toilet: The structure of the toilet is simple. In the rural houses of Cyprus, the toilets located in the courtyard and away from the living space, are square in plan and covered with a flat roof. In some areas, the top of the toilets was domed and circular.

3.6 Chapter Conclusion

In this section, the brief historical and geographical explanations about the context of Cyprus. Due to its geographical location, Cyprus has been on an intense migration route in the historical process, therefore, the changes caused by this have affected the social structure and the architectural environment.

After, has been made an explanation of the natural environment, socio-culture environment, and rural-vernacular houses of architecture in Cyprus. Rural-vernacular residential architecture, which represents the original architectural character of the built environment, has been affected and changed in many ways by the changes occurring in and around the island and has continued its existence in this way.

Following the brief, Rural-vernacular residential architecture, the location of the houses on the plot is also significant for factors together with the housing typology to understand the change in the rural-vernacular housing architecture of Cyprus, together with the conditions of the housing types and a short explanation was given on it.

Chapter 4

THE ANALYSIS OF CHANGE IN THE RURAL- VERNACULAR HOUSES IN BÜYÜKKONUK VILLAGE (KOM-İ KEBİR)

The study area Büyükkonuk Village is a developed rural settlement area at an altitude of 90 meters above sea level on the southern foothills of Ay Fodi Mountain, at the point where the northern Kyrenia mountain range of the island (Beşparmak Mountains) descend (Büyükkonuk Belediyesi, 2007), (Figure 4.1). The northern part of the village is on the mountain slope and the southern part is on the plain (Figure 4.2). The village, which houses places of worship (mosque, church) of its original users with different faiths, educational institutions in two different languages (Turkish and Greek schools), and historical rural residences that partially preserve their original qualities, is an important centre for rural cultural heritage. Today, Turkish Cypriots and Turkish citizens with the Turkish Cypriot citizenship who immigrated to the island from Turkey after 1974 live in the village. Another important feature of the village is that it was declared an ‘Eco-Tourism Pilot Village’ in 2007 within the framework of the ‘Rural Area Development Model’ in order to keep the Cypriot culture alive and spread its traditions, therefore, it has traditional ‘Eco Day’ events that take place twice a year. For this reason, the village is important in terms of investigating the sustainability of rural-vernacular residential architecture.

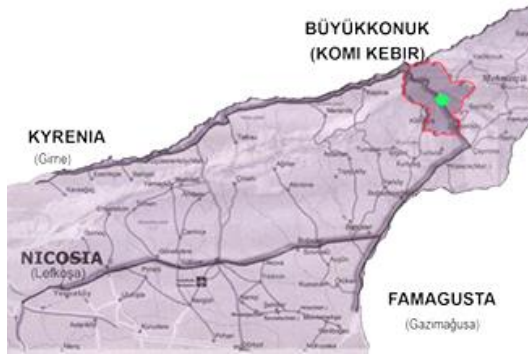


Figure 4.1: Location of Büyükkonuk Village (Kom-i Kebir) on the Karpaz peninsula adapted from Büyükkonuk municipality brochure (2015)

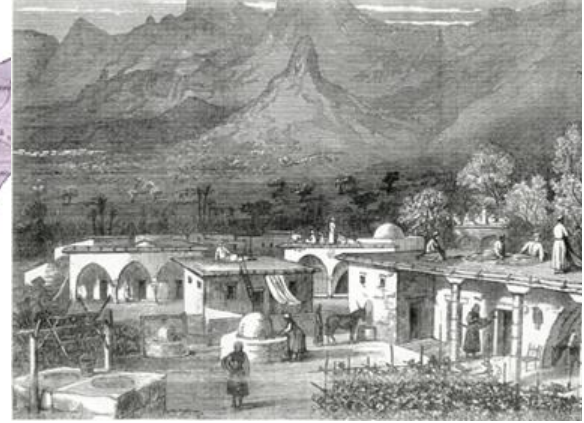


Figure 4.2: Büyükkonuk Village (Kom-i Kebir), (The illustrated London news, 16 November 1878)

When we look around Büyükkonuk Village, it starts from the borders of Tuzluca village (Patriki-Patriç) in the south and extends to the sea in the north. In the east and southeast, Yedikonuk village (Eftagomi-Eptakomi), Mehmetcik village (Galatya-Galatia), Sazlıköy (Livadya-Livadia) and Zeybekköy (Ayistad Ayios Efstathios) are located, while Kilitkaya village (Kriytya-Kridhia) and Kaplıca village (Dhavlos) are located respectively in the west and northwest (Figure 4.3). The distance of Büyükkonuk village from İskele is 22.9 km, from Famagusta 40.8 km, from Geçitkale 28.09 km, from Nicosia 96.6 km, from Kyrenia 77.23 km, and from Güzelyurt 107.8 km (Bağışkan, 2007: 4).

Auxentios' body in the Hagia Mavra Chapel and later the villagers named the village Gomi. Although the village is commonly known as Gomi, it began to be known as KOM-I KEBİR in the Ottoman period with the addition of KEBİR, which means "big" (great) to the end of the word. In 1958-1959, the name of the village was added to the name of "Büyükkonuk" (Kom-i Kebir / Büyükkonuk) and in 1999 the village was formalized as Büyükkonuk (Bağışkan, 2007, p. 4).

Büyükkonuk village reflects the general characteristics of the Cypriot rural-vernacular residential architecture quite widely (Figure 4.4). The samples of the research include residences where additions and changes are detectable. In the village, which had two different ethnic cultures before 1974 (Turkish Cypriot and Greek Cypriot), the fact that both groups had similar rural life patterns caused the residences of Turkish and Greek users to consist of similar spatial elements. The village had two different ethnic cultures before 1974 and it is understandable that both groups have similar rural life patterns and accordingly the housing belonging to Turkish and Greek users are composed of similar spatial elements.

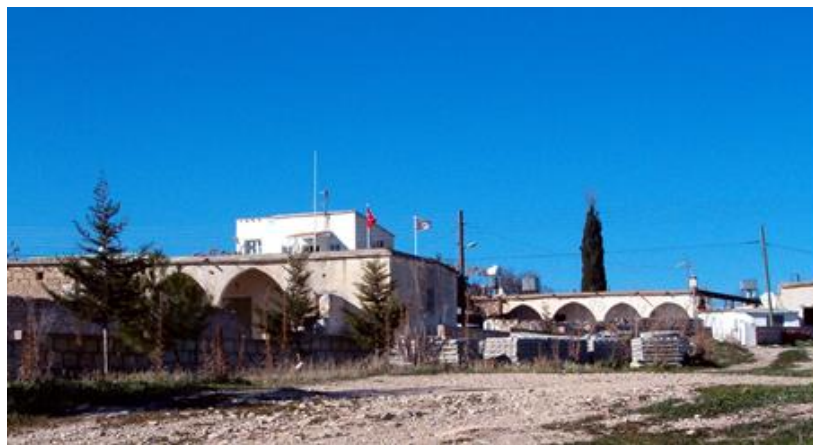


Figure 4.4: Rural-vernacular housing examples (Çınar Algül, 2016)

Today, only Turkish Cypriots and Turks who immigrated from Turkey after 1974 live in houses containing these similar elements. As a result of the change in the living conditions and user characteristics of rural areas, especially in the last 10-15 years, these areas “are in a process of change and renewal both in terms of social and physical structure” (Çınar Algül, 2015, p.1). According to the last official census conducted in 2011, the population of Büyükkonuk village is 812 people. Today the current population of the village that is formed by citizens of the Turkish Republic of Northern Cyprus is 900 people. Approximately 40% of the village population is the former natives of the village, 40% are immigrants from Turkey and 20% are Turkish Cypriots who immigrated from Southern Cyprus (Büyükkonuk Belediyesi, 2021).

4.1 Background of the Change in the Rural-Vernacular Architecture of Büyükkonuk Village

When we look at the rural-vernacular residential settlements within the scope of Büyükkonuk village, as in the whole of the island, after 1974, when the island was divided into two, there was not an immediate change transformation due to the uncertainties experienced in every sense, for example, immigration, politically, economically, socio-culturally, and especially concerning the property issues. In the face of these uncertainties, while original, existing users made changes, citizens who came to the island from Turkey did not dare to make significant and permanent changes in their residences. Rural-vernacular housing users living in Büyükkonuk village did not make any significant changes in housing until 2004. The reason for this was not knowing what the homeownership situation would be, in short, the property problem in Cyprus needed to be resolved first. In the interviews held in the village, rural housing users living in Büyükkonuk village did not make significant permanent changes in their housing until 2004. Permanent changes were started in 2005-2006.

All these changes stemmed from the possibility of increasing property ownership rights according to the Annan Plan, which led the village of the northern part of Cyprus including Büyükkonuk into an intense environmental change process after the 2000s. Meanwhile, the relevant institutions of the state unit started an application within the scope of Büyükkonuk, to protect and sustain the rural dwellings in the village. Actually, all these changes stemmed from the possibility of increasing property ownership rights according to the Annan Plan, which led the village of the northern part of Cyprus including Büyükkonuk into an intense environmental change process after the 2000s.

After the Annan plan discussions in 2004, the Turkish immigrants from Turkey and the Turkish Cypriot immigrants from the South and Turkish Cypriots who are still in the village started to make permanent changes to the houses and lands they live in. As a result of the permanent changes made, new additions to the spaces are observed. As a result of these changes, permanent and new additions to the spaces are observed especially in rural housing examples that continue to exist in rural areas. An environmental change has occurred within Büyükkonuk in villages, and it comes to the forefront in terms of the spatial use of rural houses, especially in the context of culture-space interaction.

As a result of this environmental change in Büyükkonuk village, the study observes how the spatial structure of the rural dwelling in Büyükkonuk Village was shaped in the change-transformation process and on which housing typologies the effects of modification (small change), adaptation, and transformation (full transformation, metamorphosis) were seen in rural houses and the sustainability of rural houses. In this context, in Büyükkonuk village, the most common and basic types of residences with

‘courtyard Units Without Hall’, ‘courtyard Units with Inner Hall’, and ‘courtyard Units with Outer Hall’ were selected for research. Research samples are shown on the Büyükkonuk village map. Sample selected residences include cases where additions and changes are detectable (Figure 4.5).

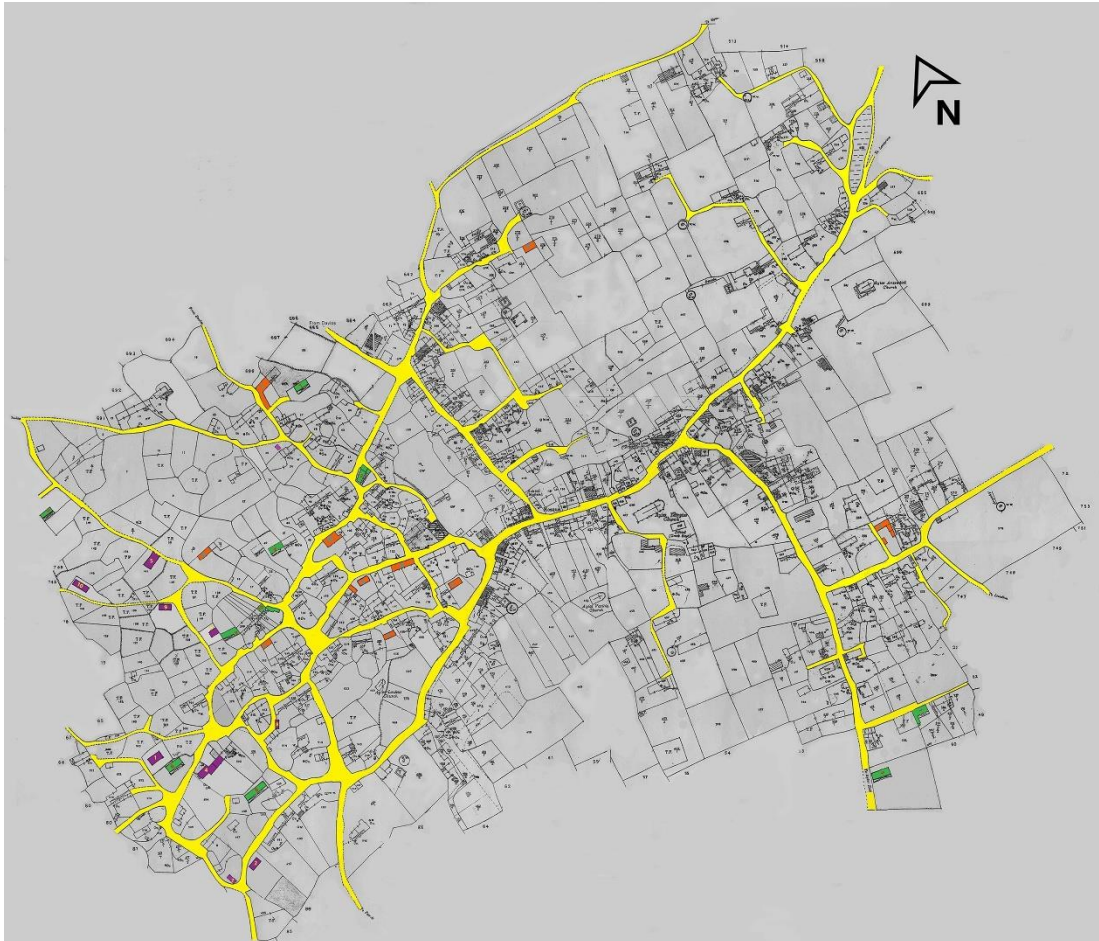


Figure 4. 5: General map showing rural-vernacular architecture houses from the Büyükkonuk Village. Colours: purple colour: Samples of Units Without Hall (UWH), Orange colour: Samples of Units with Inner Hall (UIH), Green colour: Samples of Units with Outer Hall (UOH)

Examples of the research include those where additions and changes are detectable. Analysis was made on a total of 30 original rural house plans, 10 of which were from each type of house. In addition, the spatial relations of rural houses with 30 original plans, and 30 changing plans, were analyzed. Living in the selected residences, only 3 Turkish Cypriot families are the original owners as they are the former (Turkish)

Cypriot natives of the village. In 8 of the selected houses, Turkish Cypriots who moved from the south live, and in the rest, which are 19 houses, Turkish immigrants from Turkey live. A total of 30 original rural house plan surveys of the house samples were taken and the original plans were redrawn in the computer environment in the light of short interviews with the users (Table 4.1, Table 4.2, Table 4.3).

Table 4.1: Ten analyzed rural-vernacular housing examples Units Without Hall

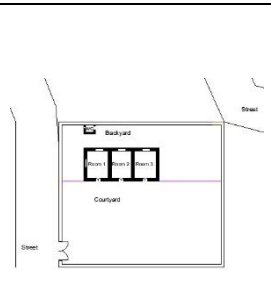
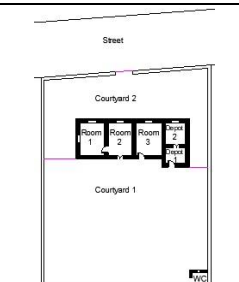
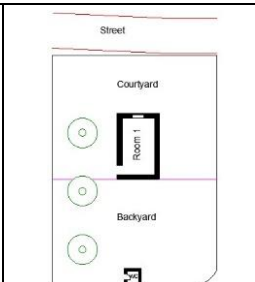
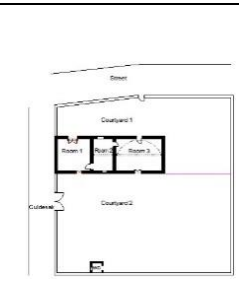
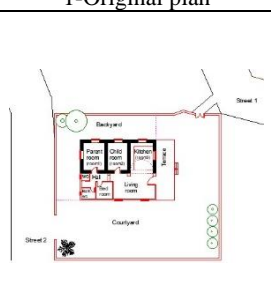
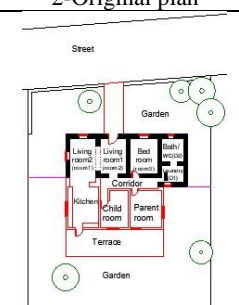
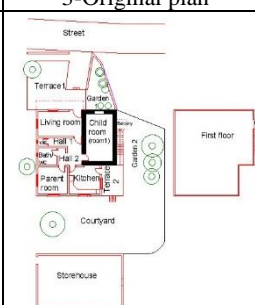

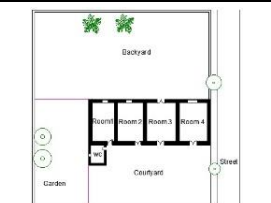
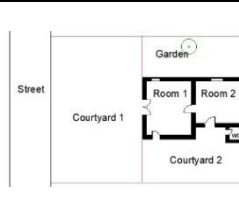
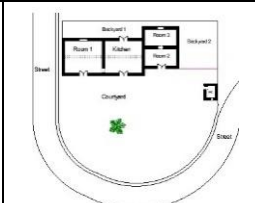
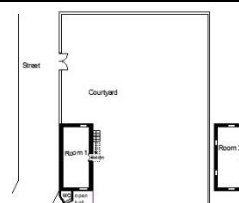
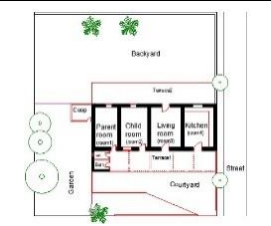
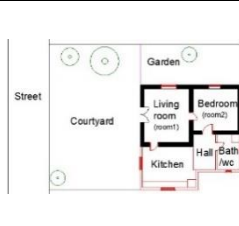
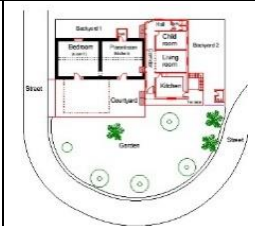
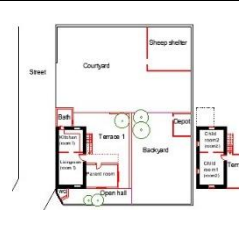
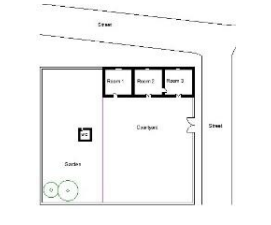
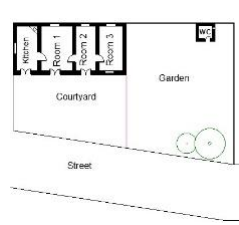

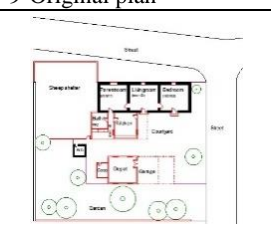
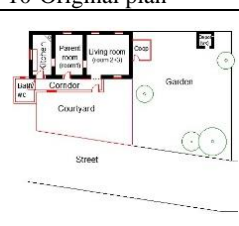
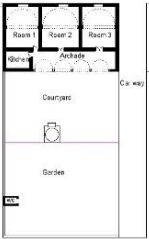
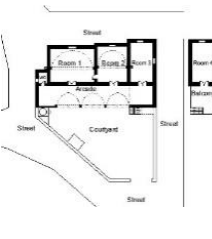
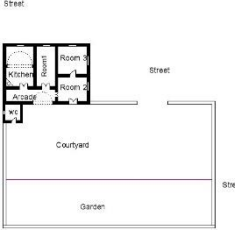
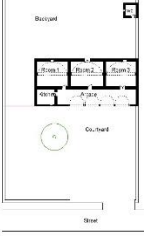
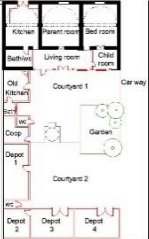

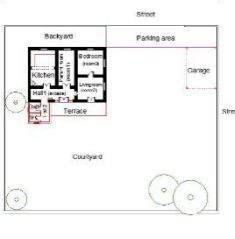
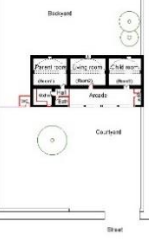
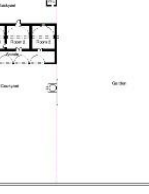
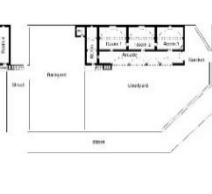

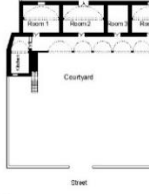

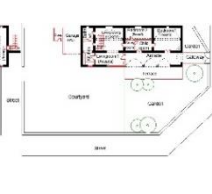
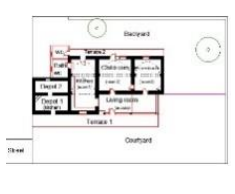


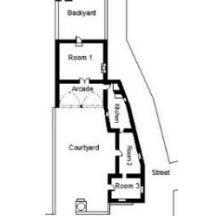


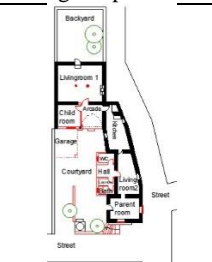
EXAMPLES OF RURAL-VERNACULAR HOUSING:			
A- Units Without Hall-UWH / B- Units with inner hall-UIH / C- Units with outer hall-UOH			
			
1-Original plan	2-Original plan	3-Original plan	4-Original plan
			
1a- Changed plan	2a- Changed plan	3a- Changed plan	4a- Changed plan
			
5-Original plan	6-Original plan	7-Original plan	8-Original plan
			
5a- Changed plan	6a- Changed plan	7a- Changed plan	8a- Changed plan
			
9-Original plan	10-Original plan		
			
9a- Changed plan	10a- Changed plan		

Table 4.2: Ten analyzed rural-vernacular housing examples Units with Inner Hall

EXAMPLES OF RURAL-VERNACULAR HOUSING:			
A- Units without hall-UWH / B- Units with Inner Hall-UIH / C- Units with outer hall-UOH			
			
1-Original plan	2-Original plan	3-Original plan	4-Original plan
			
1a- Changed plan	2a- Changed plan	3a- Changed plan	4a- Changed plan
			
5-Original plan	6-Original plan	7-Original plan	8-Original plan
			
5a- Changed plan	6a- Changed plan	7a- Changed plan	8a- Changed plan
			
9-Original plan	10-Original plan		
			
9a- Changed plan	10a- Changed plan		

Table 4.3: Ten analysed rural-vernacular housing examples Units with Outer Hall

EXAMPLES OF RURAL-VERNACULAR HOUSING: A- Units without hall-UWH / B- Units with Inner Hall-UIH / C- Units with Outer Hall-UOH			
			
1-Original plan	2-Original plan	3-Original plan	4-Original plan
			
1a- Changed plan	2a- Changed plan	3a- Changed plan	4a- Changed plan
			
5-Original plan	6-Original plan	7-Original plan	8-Original plan
			
5a- Changed plan	6a- Changed plan	7a- Changed plan	8a- Changed plan
			
9-Original plan	10-Original plan		
			
9a- Changed plan	10a- Changed plan		


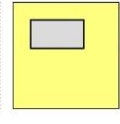
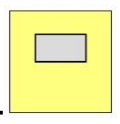
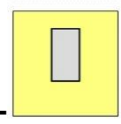
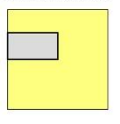
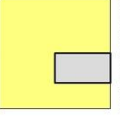
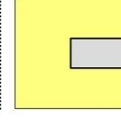
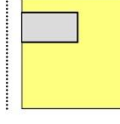
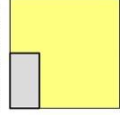
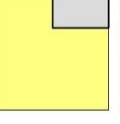
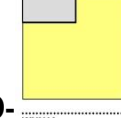
4.1.1 Position of the Houses in Büyükkonuk Village Within the Plot

In Büyükkonuk Village, analysis was made on a total of 30 rural-vernacular housing samples, ten from each of the 3 most common types of housing, A-‘Units Without Hall’, B-‘Units with Inner Hall’ and C- ‘Units with Outer Hall’. As a result of the research, within the scope of these rural housing examples, 19 rural house users are the families who immigrated from Turkey to the village and became Northern Cyprus citizens, and the remaining 11 rural house users are the houses where Turkish Cypriot families live. The selected 30 original rural dwellings were first drawn to scale, in a computer environment. Within the scope of the study, three different basic rural-vernacular housing types were drawn, namely houses with A- Units Without Hall (UWH), B- Units with Inner Hall (UIH), and C- Units with Outer Hall (UOH), are divided into three sub-types according to their location, position and relations with the plot boundaries (Table 4.4, Table 4.5, Table 4.6). Thus, the settlement of rural-vernacular houses in the plot and their relationship with the open space show in which direction the house grows, in which direction the additions can be made, and in which direction the house can develop. In all of the three categories, the original plan is classified according to the position of the main building in the plot. All rural-vernacular housing examples are divided into 3 sub-types among themselves also indicated in the tables by the sub-type group. During the study carried out in Büyükkonuk village, besides the 3 basic types of rural-vernacular housing mixed housing types were also encountered.

4.1.1.1 Units Without Hall in the Plot (UWH)

Units Without Hall are categorized into 3 sub-types as shown in Table 4.4.


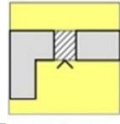
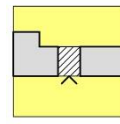
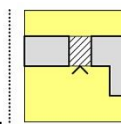
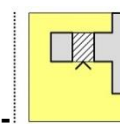
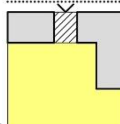
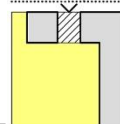
Table 4.4: Sub-type plan schemes of rural-vernacular housing typologies (UWH)

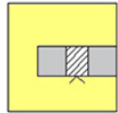
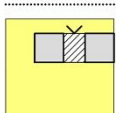
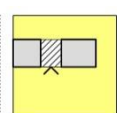
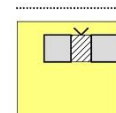
UWH-1 Four sides of the house are independent from the land boundary. 			
1- 	2- 	3- 	
Perpendicular to the street	Parallel to the street	Perpendicular to the street	
UWH-2 One side of the house Adjacent to the land boundary.			
4- 	5- 	6- 	7- 
Parallel to the street	Perpendicular to the street	Perpendicular to the street	Perpendicular to the street
UWH-3 Two sides of the house are adjacent to the land boundary.			
8- 	9- 	10- 	
Parallel to the street	Perpendicular to the street	Parallel to the street	

4.1.1.2 Units With Inner Hall in the Plot (UIH)

Units with Inner Hall are categorized into 3 sub-types as shown in Table 4.5.

Table 4.5: Sub-type plan schemes of rural-vernacular housing typologies (UIH)

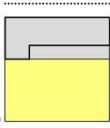
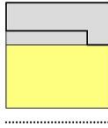
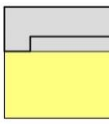
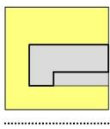
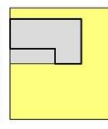
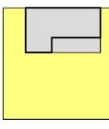
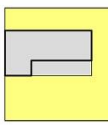
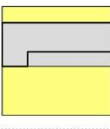
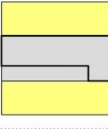
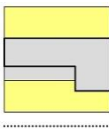
UIH-1 Two sides of the house are adjacent to the land boundary. 			
1- 	2- 	3- 	4- 
Parallel and perpendicular	Parallel and perpendicular	Parallel and perpendicular	Parallel and perpendicular
UIH-2 Three sides of the house are adjacent to the land boundary.			
5- 	6- 		

Parallel and perpendicular	Parallel and perpendicular		
UIH-3 One side of the house Adjacent to the land boundary.			
<p>7-</p> 	<p>8-</p> 	<p>9-</p> 	<p>10-</p> 
Parallel to the street	Parallel to the street	Perpendicular to the street	Parallel to the street

4.1.1.3 Units With Outer Hall in the Plot (UOH)

Units with Outer Hall are categorized into 3 sub-types as shown in Table 4.6.

Table 4.6: Sub-type plan schemes of rural-vernacular housing typologies (UOH)

UOH-1 Three sides of the house are adjacent to the land boundary.			N ▲
<p>1-</p> 	<p>2-</p> 	<p>3-</p> 	
Parallel to the street	Parallel to the street	Perpendicular to the street	
UOH-2 One side of the house Adjacent to the land boundary.			
<p>4-</p> 	<p>5-</p> 	<p>6-</p> 	<p>7-</p> 
Parallel to the street	Perpendicular to the street	Perpendicular to the street	Perpendicular to the street
UOH-3 Two sides of the house are adjacent to the land boundary.			
<p>8-</p> 	<p>9-</p> 	<p>10-</p> 	
Parallel to the street	Parallel to the street	Parallel to the street	

4.1.2 Socio-Cultural, and Environmental Change in Rural-Vernacular Architecture

The environment-human relationship, which started with the existence of human beings, has been the most important factor determining the way of life and standards in every period. The passing of time and environmental changes have also changed the needs of human beings. With the various requirements that emerged, this complex chain of relations also grew and changed.

In this process of change, in question emerges different qualities and times in every geography and every community. The knowledge acquired over time, habits, and abilities that emerge as a result of genetic and physical characteristics, geography, and all these concepts has formed the definition of a different culture (Mumcu, 2009). These changes, which are inevitable in different geographies within the framework of the concept of socio-culture, create different living standards, conditions, and different lifestyles.

People with different backgrounds and cultures adapt to the socio-cultural life of the society they live in. Humans put effort into adapting the environment they spend time in according to their change and progress, and this can only result in a good way if it's done to a flexible schema. In the work area, it's noticed from instances that the users who organize or adapt their built environment tend to take good care of it. The factors such as economy, environment, society, family, and technology that plays a role in changing user needs, generate an interaction system within itself.

In this respect, It is significant to remember how Sommer (1969) underlines that cultural values have an important place in the adaptation to the natural environment

and the shaping of the built environment, and how Berry (1997), emphasizes that individuals and groups adapt to their environment by changing, by responding to the demands of environmental change through cultural change.

Also, the built environment that is endeavouring to adapt to the changing needs, can sometimes create new needs. Therefore it's an inevitable fact that the needs of today will change tomorrow in a way we can't predict.

In this frame, at the Büyükkonuk village, it is worth considering how the house and housing space change is affected by the cultural and social life characteristics of residential users with different backgrounds. Since the most influential and important factor in the formation of housing is culture, the change in the cultural structure of society has also been reflected in rural-vernacular housing. The differentiation of the residences of users from different cultures located in the same climatic conditions is proof of this.

In the study area, it is seen that the change process in some residences has emerged with the change of users, especially when they are from a different culture. In line with the changing expectations and preferences of the user, it can be said that the living spaces are renewed in accordance with the process, and as a result, the old one has changed. In addition, in the village, some residential users, especially elderly users, use the space in line with their needs. Although there are space additions in the examples, some spaces are used extensively (Appendix D / UOH-3).

Kaplan defines culture as “manipulating and developing everything which is material and spiritual”. (Kaplan, 1983, p.38) Culture is transferred to the next generation by

influencing generations for centuries and being washed by the age of that generation. Again, as expressed by Kaplan (1983, p. 39), culture can interact with the culture of other countries. Therefore, it would not be wrong to say that culture is alive, because the culture of a society can lose some of its features over time, or it can incorporate new features into its own.

4.1.3 Types of Changes in Rural-Vernacular Housing Types in Büyükkonuk Village

The most important reason for the changes in the rural-vernacular dwellings in Büyükkonuk Village is the physical and functional ageing of the houses and residential spaces. While there have been changes made in order to make the space organization suitable for use, social stratification (examination of inequalities and social variables between groups of people in society), economy, and political authority are also affected by the social context (Kırşan & Çağdaş, 2004; Şimşek, 2013; Dikmen & Toruk, 2016). It is also underlined that the main reason for the changes is the change of social meaning (Low, Chambers, & Rapoport, 1989), which can be explained as some special situations, such as adapting to modern life, economic reasons, behavioural change, and environmental adaptation, family structure and lifestyle, changes in the social structure of the family, changes in the family economy, changes in the needs of the household, changes in user actions, and expanding family situations. Upon examining the changes in rural housing, the changes made by the user are those made primarily by physical obsolescence. With the definition of Atasoy (1973), physical ageing is the type of ageing that occurs when the suitability of the house, which is exposed to physical and chemical wear, comes to an end (Atasoy, 1973, p. 25). Physical ageing is also 'structural ageing', in other words, architectural quality in the residence or suitability of the users of the building structure. Factors such as

maintenance and repair to the house affect physical ageing. It cannot be said that the rural-vernacular housing typology has changed much as long as there is a repair that does not spoil the physical obsolescence, however, functional obsolescence often causes changes in the original spatial organization of the house.

Functional obsolescence occurs especially with the change in the user's lifestyle. Among the most important effects detected in the field, in the informal interviews made by the author between 2013-14, are urbanization, 'the population migrating from the village to the city and their replacement by a new population with a different cultural background'; 'developing, changing, growing family needs with the return of modern life, and diversity in needs with developing technology, and basically the change in the production style in the village'; and 'the inadequacy of housing as a result of these'.

In the interviews conducted with housing users in Büyükkonuk village; within the scope of the changes made throughout the houses, it is expressed that changes are made in line with the needs of the users; in terms of lack of space due to growing family structure; and security (Table 4.7).

The reasons categorised as "lack of space" can be exemplified by the fact that the users live with their son and daughter-in-law.

The reasons categorised as "the growing family" can be exemplified as the children demanding their own rooms; the relatives of the users who come from abroad in the summer months; and the lack of spatial relations of some small spaces that are insufficient for use.

The reasons categorised as “security” can be exemplified as with the difficulty of living alone, they are rebuilding the spaces such as kitchens, bathrooms, and toilets in the housing or close to the living area, instead of the courtyard.

Table 4.7: Reasons for the space changes made to rural-vernacular residences in Büyükkonuk village.

Rapid/sudden changes		
1-Lack of space	2-Developing, growing family structure	3-Security
User living with his son and daughter-in-law	Having more children in the family	Living alone
Children growing up and wanting their own room	Newly married couples want more modern spaces	Some places are far from the residence
The lack of spatial relations of small spaces with each other	Requesting separate space for family members coming from abroad	Bringing the kitchen, bathroom, and toilet under one roof

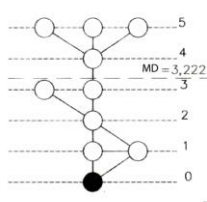
4.2 Methodology of Analysis

For the study, the Space Syntax analysis method is aimed to be used to understand how the spatial changes made by new users from different regions and even geographies affected the original spatial structure of the housing. Space transition graphics, that visualize the spatial formation and transition organization over all original and changed plans, were created in order to digitize the equations for the space syntax method (Table 4.8) which is used in order to understand how and how much the original spatial character of the rural-vernacular housing typologies have changed. Moreover, the calculation of Average Depth (MD), Relative Asymmetry (RA), and Real Relative Asymmetry (RRA) values are shown in the sample transition chart (Table 4.9).

Table 4.8: Equations used in the space syntax method.

Value	Formula (Original formulas: Hillier and Hanson, 1984)	Key and Explanations
Mean Depth (MD)	$MD = \frac{SDV}{k-1}$	MD: Mean Depth SDV: Sum of depth values of all spaces to the original space k: Number of spaces in the system
Relative Asymmetry (RA)	$RA = \frac{2(MD-1)}{k-2}$	RA: Relative Asymmetry MD: Mean Depth
Real Relative Asymmetry (RRA)	$RRA = \frac{RA}{D_k}$	RRA: The Real Relative Asymmetry RA: Relative Asymmetry D _k : D-values for k space
Differentiation Factor (DF)=H	$H = \left[\frac{a}{t} \ln \left(\frac{a}{t} \right) \right] + \left[\frac{b}{t} \ln \left(\frac{b}{t} \right) \right] + \left[\frac{c}{t} \ln \left(\frac{c}{t} \right) \right]$	a=maximum integration value b=minimum integration value c=mean integration value t=a+b+c
Basic Differentiation Factor (BDF)	$H^* = \frac{H - \ln 2}{\ln 3 - \ln 2}$	H= Relative Difference Factor H*= Differentiation Factor

Table 4.9: Calculation of mean depth (MD), relative asymmetry (RA) and real relative asymmetry (RRA) values in an example transition graph

Example graphic	Mean Depth (MD)	Relative Asymmetry (RA)	Real Relative Asymmetry (RRA)
 <p> $3 \times 5 = 15$ $1 \times 4 = 4$ $2 \times 3 = 6$ $1 \times 2 = 2$ $2 \times 1 = 2$ $1 \times 0 = 0$ </p> <p>MD = 3,2222</p> <p>29</p>	$(MD) = \frac{29}{(10-1)}$ $= 3,2222$	$(RA) = \frac{2(3,2222 - 1)}{(10-2)}$ $= 0,5555$	$(RRA) = \frac{0,5555}{0,306} = 1,81$

4.2.1 What is Space Syntax?

The space syntax method was developed to analyse and describe the spatial formation features of the built environment and is a graphic-based and morphological analysis method that examines the interaction of space organization and society (Hillier and Hanson 1984, Dursun, 2002). In this method, “the primary goal is to reveal the potential of 'spaces' in bringing people together and directing people by objectively examining the relationship of the spatial organization with human movement and fields of view” (Gündoğdu, 2014, p.251). Hanson (1998) defines the revealing of the

hidden information in the space system with the space syntax method as the archaeology of space. Space syntax is also a method of capturing genotypic features in spatial structure. With this method, it can be read scientifically / numerically how spatial order carries spatial relationship and social information and how it relates to usage patterns through abstract principles that are in the background of the visible (Orhun, 1999; Dursun & Sađlamer, 2003; Kırřan & ađdař, 2005; il, 2006; Seamon, 2007; Dursun, 2012, Gündođdu, 2014; Erman, 2017; Gökce & Kaya, 2020).

In other words, spatial syntax is an approach that aims to understand the processes that shape the spatial organization and the underlying social meanings. Since space has a dimension that affects the social structure and even the different layers that make it up, it is built on a mentality that believes in the existence of a mutual relationship between social structure and space. Space Syntax analysis was first explained as a space reading method developed at University College London (UCL) in the 1980s by the Bartlett School, a research group led by Bill Hillier and Julienne Hanson (il, 2006). Hillier and Hanson, in their work titled 'The Social Logic of Space' published in 1984. In order to understand the relationship between space and social life, they laid the foundations of a new synthetic theory with a different perspective for space organization of all scales, from a single building to a residential scale (Hillier & Hanson, 1984). Numerous studies conducted with the Space Syntax method (Klarqvist, 1993; Ünlü, 1999; Dawson, 2002; Dursun & Sađlamer, 2003; Edgü & Ünlü, 2003; Reis, 2003; Kırřan & ađdař, 2005; Khattab, 2005; il, 2007, 2008; Önder, 2009; Orhun, 2010; Ostwald, 2011; Korkmaz, 2011; Gökce & Kaya, 2020) show that the method can yield useful results in terms of explaining the effect of culture and ethnic identity on the housing form; moreover, on change and transformation observed in space organization.

Among the studies, especially in Cyprus; The study by Çiler Kırşan & Gülen Çağdaş (2004) titled, 'Etnik Kimlik ve Eysel Mekan', 'Ethnic Identity and Domestic Space' is based on a comparative analysis of two villages (Alaniçi: Greek village / Dağyolu: Turkish village) in terms of organizing principles of space organizations in rural houses belonging to Turkish and Greek communities. In the study, mainly spatial and spatial-functional construction was specified. The conceptual study was established based on the transition relations between the interior spaces as well as between the indoor and outdoor spaces of the house. The results of the comparative study were carried out with the Space Syntax method, the measurements were obtained from the depth values of the spaces and the degree of their dependence on each other. As a result of their study, they argue that the socio-cultural differences that are thought to have softened as a result of living together for a long time, as well as the conditions created by ethnic conflict, caused the diversification/transformation of the courtyard-integrated housing theme between the two ethnic groups. However, in the same study, it was revealed that these were never strong enough to completely change the theme or reveal radically different spatial themes. Thus, it was concluded that the spatial cultures of these ethnic groups are variations or different degrees of the same dominant theme (Kırşan & Çağdaş, 2004).

4.2.2 The Process Followed in the Spatial Syntax

According to Hanson, the representation of transition graphics within the scope of space syntax is more than a simple representational tool developed to clarify spatial configuration in settlements and buildings. Two characteristic variables are mentioned in the graphics-based drawing (Figure 4.6). Variables expressed in the graph are "depth" and "rings" (Hanson, 1998). Accordingly, some basic syntactic concepts, tools

and measurements related to Space Syntax theory are summarized below. These are syntactic concepts, syntactic tools and syntactic measurements.

4.2.2.1 Syntactic Concepts

Configuration: Spatial relations exist where there is any type of link between two spaces. Configuration exists when the relations that exist between two spaces are changed according to how we relate each to a third. Configurational descriptions, therefore, deal with the way in which a system of spaces is related together to form a pattern, rather than the more localized properties of any particular space (Hanson, 1998, p. 22-23). In the first figure 'a' and 'b' is changed when 'c' is considered and in this way, a configurational difference between two small spatial formations are occurred (Figure 4.6).

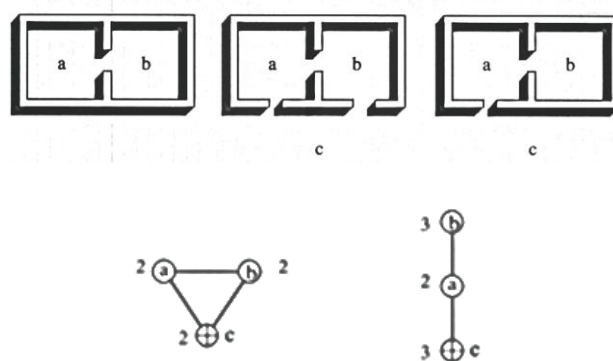


Figure 4.6: Basic configurational relationships (Hillier, 1996, p. 34)

4.2.2.2 Syntactic Tools

In syntactic studies justified graphs are a useful device for clarifying the configurational differences graphically. This is a graph in which a particular space is selected as the root and spaces in the graph are then aligned above it in the levels according to how many spaces one must pass through to arrive at each space from the root (Figure 4.6).

4.2.2.3 Depth

In the transition graph, a location within the system is selected as the root, and other locations are listed above this root. This ranking is made according to the number of places passed to reach each space. In these graphs, outdoor space can be taken as root, or it can be taken from any point in the system (Suzan, 2009), (Figure 4.7). If it is possible to pass directly from one place to another in the transition graphic, the depth of that place is 1. If it is necessary to cross an intermediate space from that space to the other, the depth of that space is considered as 2, if a minimum of 2 spaces is required, it is considered as 3 (Dursun, 2002, p. 19).

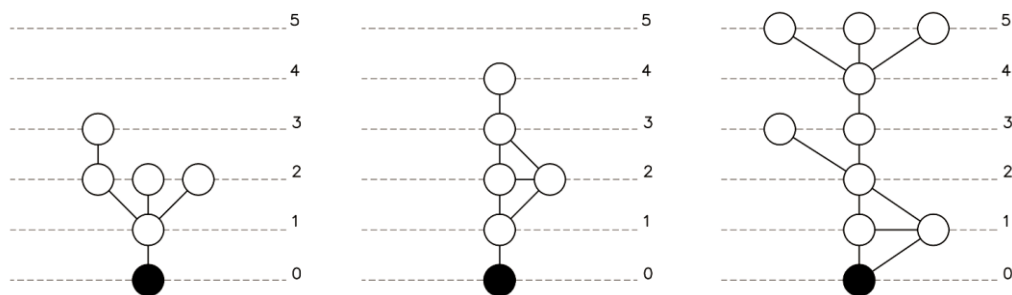


Figure 4.7: Root space and depth variable in transition graphs

As seen above (Figure 4.7), the depth variable reveals information about privacy in the system. The relationship of depth with privacy assigns social and cultural meanings to the configurational structure. In the analysis, it is questioned which is the deepest space, by whom and for what purpose. As can be seen below (Figure 4.8), the depth is greater in the graphs created in a linear structure, and less in the transitional graphs in the branched structure (Dursun, 2002, p. 19).

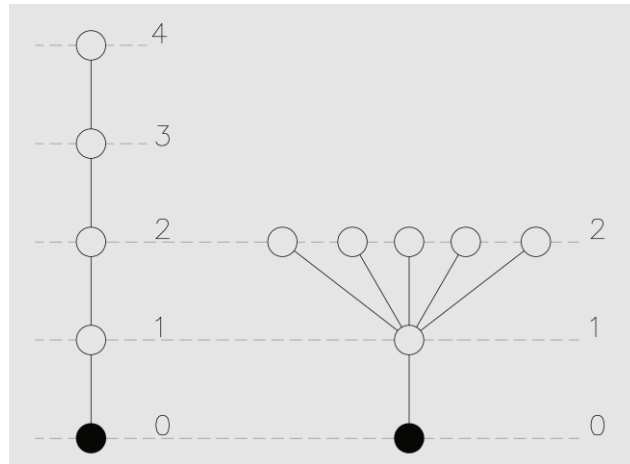


Figure 4.8: Transition graph in a linear and branched structure

4.2.2.4 Ring

Another feature within the spatial syntax system in transition graphics is the alternative paths that emerge in the transition from one space to another. The existence of such a structure indicates alternative roads from one place to another instead of a single road and gives the user the right to choose (Figure 4.9). These paths in the system express the ring structure of the spatial configuration. Within the space syntax system, the ring structure represents the space and the number of spaces is accepted as “k”. Graphics whose number of connections is one less than the number of places, that is, they have ‘k-1’ connections to ‘k’ places. Findings such as whether a space is located on rings, how many rings it is located on, or on which ring a space is located are of great importance in space analysis (Hillier, 1987). While the effect of the rings connecting a small number of places in the plan is weak, the effect of the large rings connecting the distant places is stronger. The places where more than one ring intersects are generally important places in the system. They have key functions and common uses.

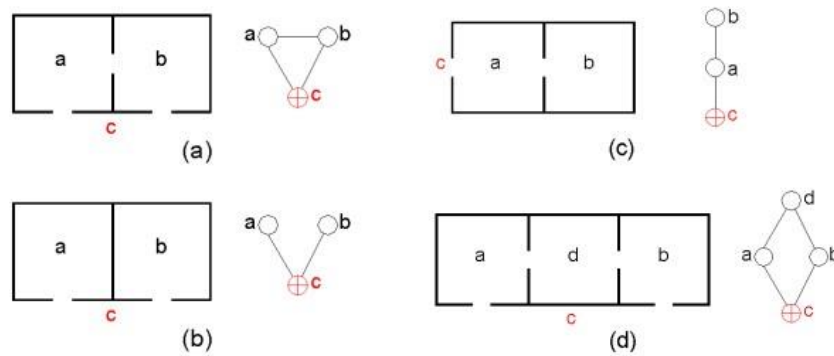


Figure 4.9: Four different spatial layouts and four different graphs (Hillier and Hanson, 1998, p.148)

4.2.2.5 Syntactic Measurements - The Relative Asymmetry Values (RA)

Within the system, the variability of the transition graphs depending on the depth is expressed in a mathematical method called “integration”. In other words, RA-Relative asymmetry “integration” creates a numerical expression of the form of the relationship graph drawn from that space. RA takes a value between 0 and 1 and it expresses the average integration value of all spaces in the graphic sequence (Hanson, 1998). Low values indicate that the space tends to be integrated with the system, while high values indicate that it tends to be segregated from the system. Hillier and Hanson describe the integration calculation with the following formula in their book “Social Logic of Space” (Hillier and Hanson, 1984).

The relative asymmetry (RA) or “integration value” of a space expresses whether that space is integrating or separating from the configuration it is in. The more integrated a space is, the closer it draws all other spaces in the system, and the more separate, it distances all other spaces from itself.

Here, the “MD” integration value refers to the average depth of all spaces from the investigated space and “k” is the total number of spaces in the graph (See table 4.8).

In order to calculate the average depth (md) of all spaces from the said space, a depth value is added to each space according to how far away it is from the starting space, and these values are summed and divided by one less than the number of spaces in the system (starting (root) space).

4.2.2.6 Syntactic Measurements - The Real Relative Asymmetry Values (RRA)

If a system is compared to another system with the same number of spaces, no problems would occur in terms of the "relative asymmetry" values. However, if there is a comparative analysis between systems of different sizes, there is an equation that will remove the effect of size on integration. briefly, in the comparison of spatial systems of different sizes, the effect of size on the integration value is eliminated by the applied transformation. RRA values take values not only between 0 and 1, but also above and below 1. Values considerably below 1 (0.4-0.6) indicate strong, and values close to or above 1 indicate segregated spaces (Hillier & Hanson, 1984; Dursun, 2002; Şıkoğlu & Arslan, 2015). To calculate the “Real Relative Asymmetry” values of space, Hillier and Hanson (1984) expressed this with a chart in their book “Social Logic of Space”. Hillier and Hanson (1984) prepared this very comprehensive chart for systems with a larger space. The Table D-values for systems of different sizes are given below (Table 4.10).

Table 4.10: D-Values for K Spaces, $RRA = \frac{RA}{D_k}$ (Hillier & Hanson, 1984, p. 112)

(k) no. of spaces	D-values
5	0.352
6	0.349
7	0.34
8	0.328
9	0.317
10	0.306
11	0.295
12	0.285
13	0.276
14	0.267

15	0.259
16	0.251
17	0.244
18	0.237
19	0.231
20	0.225
21	0.22
22	0.214
23	0.209
24	0.205
25	0.200

4.2.2.7 Calculating the Difference Factor (BDF)

The “Basic Differentiation Factor” (BDF) value is calculated in order to reveal how strong or weak the differentiation between the integration values of the spaces in the system is. A numerical value is reached by using the minimum, maximum and average integration values of the whole. In the formula given below, a, b, and c correspond to the maximum, minimum, and average RRA values, and t to their sum (Figure 4.10). To give the relative difference factor of the 'H' value, it is relative between In2 and In3. H* will take values between 0 (maximum difference) and 2 (minimum difference, i.e. values are equal). If the calculated value is close to 0, it indicates that the differentiation between the integration values of the spaces is strong in that space organization. If the calculated value approaches 1, it indicates that the configurational differentiation between spaces is weakened. When this value is 1, there is a whole consisting of spaces with equal integration values (Hanson, 1998, p. 30; Dursun, 2002, p. 29).

$$H = - \left[\frac{a}{t} \ln \left(\frac{a}{t} \right) \right] + \left[\frac{b}{t} \ln \left(\frac{b}{t} \right) \right] + \left[\frac{c}{t} \ln \left(\frac{c}{t} \right) \right]$$

$$H^* = \frac{H - \ln 2}{\ln 3 - \ln 2}$$

Max RRA = 2.348
 Mean RRA = 1.238
 Min RRA = 0.968

$$H = - \left[\frac{a}{t} \ln \left(\frac{a}{t} \right) \right] + \left[\frac{b}{t} \ln \left(\frac{b}{t} \right) \right] + \left[\frac{c}{t} \ln \left(\frac{c}{t} \right) \right]$$

$$H = - \left[\frac{2.348}{4.554} \ln \left(\frac{2.348}{4.554} \right) \right] + \left[\frac{1.238}{4.554} \ln \left(\frac{1.238}{4.554} \right) \right] + \left[\frac{0.968}{4.554} \ln \left(\frac{0.968}{4.554} \right) \right]$$

$$H = - \left[0.5156 \ln \left(0.5156 \right) \right] + \left[0.2718 \ln \left(0.2718 \right) \right] + \left[0.2126 \ln \left(0.2126 \right) \right]$$

$$H = - \left[-0.3415 \right] + \left[-0.3541 \right] + \left[-0.3292 \right] \quad H = 1.0248$$

$$H^* = \frac{H - \ln 2}{\ln 3 - \ln 2} \quad H^* = \frac{1.0248 - \ln 2}{\ln 3 - \ln 2} \quad H^* = \frac{0.3317}{0.4055} \quad H^* = 0.82$$

Figure 4.10: Calculating the difference factor (Hanson, 1998, p. 31).

4.2.3 Spatial Analysis Research in Rural-Vernacular Houses

Extremely rich cultural and social information and meanings are hidden in the spatial structure of the residence. The complex structure of the house, which is formed by the wealth of information it contains, has made it the focus of the space syntax theory (Dursun, 2002). Hanson's work "Decoding Homes and Houses" (1998) presents many examples of space syntax applications in the context of housing. In the configurational analyses of the examples discussed in the studies, the arrangement of the actions in it, the support of different social relations, the reflection of the inhabitants, their actions, relations, and habits on the spatial construction of the house, are examined in a multi-faceted manner, supported by sciences such as sociology, anthropology, and psychology (Hanson, 1998). Hanson (1998) mentions that space syntax analysis is

used more frequently in rural-vernacular housing research, where a large number of examples can be accessed. These studies are aimed at investigating the continuity in the invisible configurational features of a large number of analysed spatial patterns. Fictional features in a series of house plans, belonging to a culture or a region, can be investigated by spatial syntax, which is a numerical, statistical, and graphical method (Dursun, 2002).

4.2.4 Studies with Spatial Analysis Method and Results

The space syntax method has developed rapidly since the 80s and has been used in various research areas and design applications all over the world. It is widely used in the syntax of space in the fields of architecture, urban design, planning, transportation and interior design. In the last fifteen years, spatial syntax has also begun to be used in fields such as archaeology, information technology, urban and human geography, anthropology, landscape architecture and informatics. Numerous studies conducted with this method, which many researchers in the world have applied, have concretely supported the view that space organization has an important role in investigating the effects of culture and ethnic identity on the housing form.

Hillier and Hanson (1998), used the Space Syntax method to evaluate the adaptability of 19th-century British workers' housing to current use. The study, in which Hillier and Hanson compared two space codes in London row houses, is an important study in which the effects of these behavioural forms on space are questioned by making use of the space syntax. In this study, the spatial models of the small, narrow-fronted, two/three-storey typical row houses, called “unconverted houses” and used by the traditional working-class family, were designed by middle-class families of different occupational groups and cultural levels, such as academics, journalists, lawyers, who

later used these houses. It investigated what kind of changes he went through when he adopted himself (Hanson, 1998).

Dursun (2002) states that especially for such studies Hillier's work titled "Ideas Search in Things" (1987) is a guide. In this study, spatial analysis of 17 house samples from the Normandy region of France is presented. Hillier et al. (1987) sought answers to three questions in this study:

- 1st How can syntactic representation and measurements illuminate the relationship between spatial pattern and its use?
- 2nd To what extent can regional or other typological groups be investigated by such a spatial analysis?
- 3rd Is it possible to identify certain known traditional regional themes in at least one house and clarify these themes by syntactic analysis? It is stated that the 17 samples obtained appear quite heterogeneous at first glance.

Edgü and Ünlü (2003), in their study titled "The Relation of Spatial Index Data in Residences with Space Preferences", examined the spatial preferences of the residential users in apartment-type settlements in Istanbul and how compatible they are with their lifestyles.

According to Kırşan's and Çağdaş's (2004) explanation, it would be evitable to explain the adaptation and transformation in space organization by using the works which show the effect of cultural and ethnic identity on the house through using this method (Kırşan, Çağdaş, 2004). The study by Kırşan and Çağdaş (2004) named "Ethnic Identity and Domestic Space" is based on a comparative analysis of two villages in terms of organizing principles of space organizations in rural houses belonging to

Turkish and Greek communities. In the study, mainly spatial and spatial-functional constructs were specified. The results of the comparative study were carried out using the Space syntax method. In the conceptual study, it was established on the basis of the transition relations between the interior spaces and between the interior and exterior of the house, and the measurements were obtained from the depth values of the spaces in these graphs and the degree of their dependence on each other. As a result of the study, they argue that the socio-cultural differences that are thought to have softened as a result of living together for a long time, together with the conditions created by ethnic conflict, caused the diversification/transformation of the courtyard-integrated housing theme between the two ethnic groups. However, in the same study, it was revealed that these were never strong enough to completely change the theme or reveal radically different spatial themes. Thus, it was concluded that the spatial cultures of these ethnic groups are variations or different degrees of the same dominant theme (Kırşan, Çağdaş, 2004).

Nurhilal Şimşek (2013) in her study named “A Study of Examining Transformation of Mardin Vernacular Architecture By Space Syntax” examined the physical and functional change over selected Mardin traditional houses between 1989 and 2013. Within the scope of the study, the changed housing units and the reasons for this change and the differences in the spatial organization of the new units added were evaluated.

4.3 The Comparative Analysis of Change in the Rural-Vernacular Houses in Büyükkonuk Through Space Syntax Method

In all housing areas, a comparison of original and changed housing was made for each plan: Pertaining to each residence, the number of spaces, total depth, mean depth, total rings, the most integrated, the most segregated and the mean integration value was found.

The first of these is the comparison of the ranking of all spaces from the lowest numerical value to the highest according to the integration value ranking. In each house type, it has been revealed what the most integrated and the most segregated space is, the changed examples maintain their position in the space organization, whether their functions have changed or how they have changed (for units without hall see Tables 4.21, 4.22 and 4.23; for units with inner hall see Tables 4.42, 4.43 and 4.44; for units with outer hall see Tables 4.63, 4.64 and 4.65). In addition, each residence in the tables is grouped according to its location within the plot. (See Tables 4.4, 4.5 and 4.6).

Secondly; the basic differentiation factors of all the house's original and their changed states have been calculated. Basic differentiation factor (BDF) results have been analysed and the BDF results of the original plans of 10 samples from each basic type and the BDF results which belong to their changed states, were compared to each other (for Units Without Hall see Tables 4.24, 4.25; for Units with Inner Hall, see Tables 4.45, 4.46, and for Units with Outer Hall see Tables 4.66, 4.67). At the same time, the basic differentiation factors (BDF) averages of the original plans of 10 samples from each basic type and the BDF averages belonging to their changed states were compared to each other (BDF average) (See Tables 4.86 and 4.87).

As a result, it is determined which basic type is more homogeneous and weaker than the others (discrete space organization). It was determined which type showed stronger spatial structuring (integrated space organization) character. At the same time, the increase of the changed averages in each type compared to the original condition was examined. Accordingly, the houses with the highest increase in BDF value in each basic type group, compared to the original, were determined as examples where the original spatial organization changed to a great extent among the three basic types. Thus, for this study, it was examined how the existing space organization changed through all rural-vernacular samples determined according to the rate of change within each type.

Thirdly; in all original examples, it has been determined how the most integrated main spaces show connectivity features and which space types they turned into. It has been clarified to which original type the space types are predominantly transformed into in the changed houses, or which completely new types (Table 4.75) are formed. In addition, by examining which functions the spaces mostly contain, the types of spaces that determine the change in space organization and the change in rural housing through functional separation are examined.

The housing examples showing the greatest change in each house typology were examined in sequence (for units without hall see Table 4.20, for units with inner hall see Table 4.34, and for units with outer hall see Table 4.59). The tables of the dwellings include; original and changed plans, spatial transition graphs, spatial depth maps of the dwellings along with the integration value ranking of the spaces.

4.3.1 Comparison of Original and Changed Houses Units Without Hall - (UWH)

Within the scope of 10 rural vernacular ‘units without hall’ houses analysed in Büyükkonuk village; 2 families are Turkish Cypriot residents who immigrated from Southern (Paphos / Baf village) Cyprus to Büyükkonuk village during the events of 1974. The remaining 8 rural-vernacular residential users are families who came to Cyprus from the city of Adana (From, Kozan, 2xMansurlu, Ceyhan, Gürümze, and 3x Süphandere villages), Turkey after 1975 (See Appendix B: Inventory charts for Units Without Hall UWH-1). Below is the comparative analysis of the change in all house plans. (See Tables 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20).

In the housing spaces examined as a result of spatial transition graph analysis of all rural-vernacular housing samples, it is seen that for each rural-vernacular house, different results were obtained in the spatial analyses covering both plans. In all the changed plans, all the new interventions, the addition of the new space, all open transition spaces, the changed door, window places, stairs and new garden walls were added on the plans and indicated with a red line on the new plan drawings. Comparison of original and changed houses in the housing spaces examined as a result of spatial transition graph analysis of all rural-vernacular housing samples, and it is seen that for each rural-vernacular house, different results were obtained in the spatial analyses covering both plans.

Table 4.11: The comparative analysis of the change in house no.1 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)			
A1-Original plan organization		A1-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
Courtyard (0.1962) < backyard (0.7851) < street=room1=room2=room3 (1.1776) < WC (1.7665)		Living room (0.6727) < hall1 (0.7688) < terrace (0.8168) < kitchen (1.0091) < courtyard (1.1052) < hall2 (1.1532) < child room (1.2493) < bedroom=parent room (1.3454) < street1=backyard=street2 (1.6818) < bath/wc=wc (1.7298)	
Analysis:		Destroyed places / elements:	Added spaces / elements:
Number of spaces:	7	WC	T
Total depth:	3	Kitchen wall	Lr
Mean depth:	2	Garden wall	H
Total rings:	6		Br
The Most Integrated:	C		WC
The Most Segregated:	WC		B/WC
Average integration value:	1.0655		
			Analysis:
			Number of spaces:
			Total depth:
			Mean depth:
			Total rings:
			The Most Integrated:
			The Most Segregated:
			Average integration value:
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culsesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

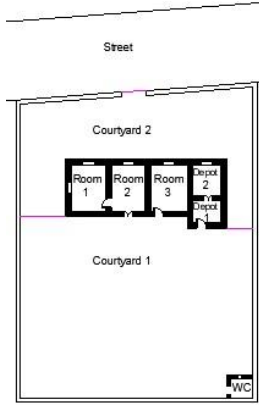
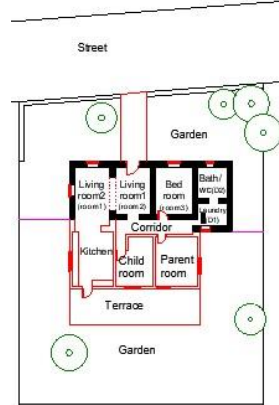
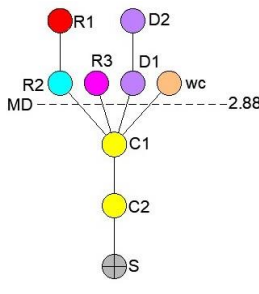
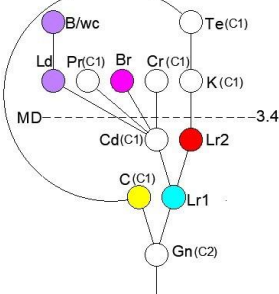
This residential user is a family that immigrated from Southern Cyprus to Büyükkonuk village. The original purpose of making and using this rural-vernacular house, where they lived as two people, was not to be used as a barley and wheat mill. Looking at the shape of the original plan, the residence consists of 3 living units, meaning three basic rooms, located in the middle of the plot, and each unit is directly connected to the courtyard. The courtyard is entered through a door from the street. It consists of 7 spaces in total, including the street belonging to the residence. As part of the changed plan, the number of spaces, including the street, doubled to 14.

Looking at the original plan transition graph, it is seen that it has very little branched transition graph. The maximum depth is 3, the maximum number of connections is 6 and the average depth (md) of all spaces is 2.0. The most integrated place in the whole house is the courtyard with a value of 0.1962, from the lowest (small) to the highest (big) value in the integration value order. The most segregated place (the highest value) is the toilet with a value of 1.7665. The average integration value of the house is 1.0655. Looking at the basic differentiation factor states that high values indicate a more homogenized configuration, that is, a weaker structuring in terms of relationships. The main difference factor between these three values is seen as 0.4096 (Table 4.24). This result shows that the original plan has a stronger structure and is more integrated.

Looking at the spatial analysis result of the changed house, the transition graph shows a less branched characteristic. The maximum depth is 6, and the maximum number of space connections has been doubled compared to the original and increased to 14. The average depth of all spaces belonging to the residence is 3.69. The most integrated place in the whole house is the living room with a value of 0.6727, the most divergent

place is the bathroom/wc and wc with a value of 1.7298. The average integration value of the house is 1.2836, and the building is more separated from its original state. The basic difference factor value has a value of 0.8377 (Table 4.25), which is higher than the original case, indicating that it is more homogeneous. The most integrated space, the living space, is connected to the exterior from two different places. The first one is accessed from the main entrance door of the residence to the living area, and the other one is entered into the residence from the intermediate and complementary kitchen. The main entrance to the residence is protected from the street by two entrances. The courtyard is accessed from both doors. The positions and depths of the 3 (room) spaces used as rooms in the original plan have also changed in the changed plan. The location of the spaces with the T1(space connection type) feature in the original plan and the same integration value has changed.

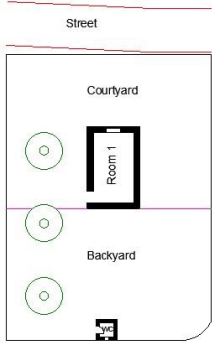
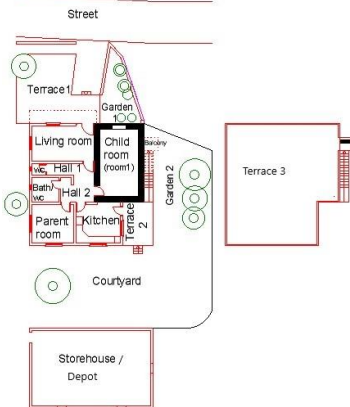
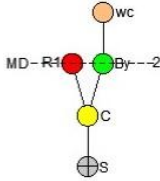
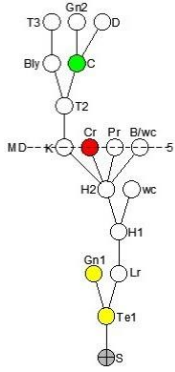
Table 4.12: The comparative analysis of the change in house no.2 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)				
A2-Original plan organization		A2-Changed plan organization		
				
Justified graph of original plan		Justified graph of changed plan		
				
Order of integration in original plan		Order of integration in changed plan		
<p>Courtyard1 (0.3383) < courtyard2=room2=depot1 (0.9018) < room3=wc (1.1273) < street=room1=depot2 (1.6910)</p>		<p>Living room1 (0.6048) < corridor (0.6598) < garden (0.8798) < living room2 (0.9898) < laundry (1.1547) < courtyard=parent room=bed room=child room (1.2647) < kitchen (1.3745) < street (1.4847) < terrace (1.6497) < bath/wc (1.7596)</p>		
Analysis:		Destroyed places / elements:	Analysis:	
Number of spaces:	9	WC	Number of spaces:	13
Total depth:	4	Room1 wall	Total depth:	5
Mean depth:	2.88	Garden wall	Mean depth:	3.41
Total rings:	8		Total rings:	13
The Most Integrated:	C		The Most Integrated:	Lr1
The Most Segregated:	S=R1=D2		The Most Segregated:	B/WC
Average integration value:	1.1524		Average integration value:	1.2013
Legend:				
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>				

An examination of the original plan reveals that it was built with a single-storey, masonry technique using stone material. The number of residential users consists of a couple. The house is located in a large courtyard and the house is not directly entered from the street. The residence is in a location that is separated from the street by a backyard and closed to the street. The original plan spatial transition graph shows a linear and less branched transition graph. The total number of spaces, including the outdoor area, is 9. The maximum depth of space is 4 and the average integration is 2.88. The most integrated place in the whole house is the courtyard with a value of 0.3383. The most segregated place is seen as the street, room 1 and warehouse 2 with a value of 1.6910.

Compared to the original plan example, a highly branched transition graph is seen in the spatial transition graph of the changed version. The total number of spaces in the plan is 13. Maximum depth is 5, average integration is 3,416. The most integrated place in the whole house is the living room with a value of 0.6048, and the most reserved place is the bathroom and toilet with a value of 1.7596. The entrance to the house is provided by passing through a small garden. The number of new spaces added to the Residence as indoor and outdoor spaces is 5.

Table 4.13: The comparative analysis of the change in house no.3 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)				N ▲	
A3- Original plan organization		A3- Changed ground and upper floor plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
Courtyard (0.4734) < backyard (0.9469) < street=room1 (1.8939) < wc (2.3674)		Hall2 (0.8199) < kitchen (0.9224) < hall1 (0.9907) < terrace 2(1.0932) < living room (1.2982) < child room=parent room=bath/wc (1.3324) < courtyard (1.4690) < wc (1.5032) < balcony (1.5373) < terrace1 (1.6740) < garden2=storehouse (1.9815) < terrace3 (2.0498) < street=garden1 (2.1865)			
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	5	WC	T1, T2, T3, Bly	Number of spaces:	17
Total depth:	3		G1, G2	Total depth:	8
Mean depth:	2		Lr	Mean depth:	5
Total rings:	4		WC	Total rings:	16
The Most Integrated:	C		H1, H2	The Most Integrated:	H2
The Most Segregated:	WC		K	The Most Segregated:	S=Gn1
Average integration value:	1.5151		Pr, D	Average integration value:	1.5112
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace, T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The original example of house number three which is a Unit Without Hall has a very simple and linear transition graph. It consists of a single rectangular unit. The total number of spaces belonging to the residence is 5, the maximum depth is 3, and the average integration value is 1.5151 (Table 4.13). The most integrated place in the whole house is the courtyard with a value of 0.4734, and the most segregated place is the toilet with a value of 2.3674. The residence is not separated from the street by any garden wall.

In the example of the changed plan, compared to the original plan, there is very little branching and it has a linear transition graph. The total number of spaces belonging to the residence has increased to a great extent and the total number of spaces has reached 17. The maximum number of depths in the graph is 8, and the average integration value is 1.5112. The most integrated place in the whole of the residence is the hall with a value of 0.8199, and the most segregated place is the street and garden1 with a value of 2.1865. The residence is separated from the street by a garden wall and the user of the residence is an immigrant family from Turkey. The number of new spaces added to the residence in line with the need is 15. The space, which was a single unit seen in the original plan, has been transformed into a children's bedroom. As a result of the new additions, the building has a completely modern appearance. The courtyard on the front in the original plan is used as a terrace. The roof of the house is used as a terrace. In the original plan, the toilet located in a corner of the garden, independent as a single unit, was demolished and a large storage area was built in its place.

Table 4.14: The comparative analysis of the change in house no.4 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)		N	
A4-Original plan organization		A4-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
<p>Courtyard1=courtyard2 (0.4350) < room2 (0.5800) < street=Cs=room 1(1.0151) < Kitchen (1.1601) < wc (1.3051)</p>		<p>Terrace2 (0.5196) < terrace1=living room1(0.5715) < hall=courtyard1 (0.7794) < street=living room2 (0.8313) < courtyard way=culdesac=child room (0.8833) < parent room1=kitchen1=bath/wc1=kitchen2 (0.9872 < depot=garden1=garden2 (1.0392) < parent room2=bath/wc2=wc (1.2470)</p>	
Analysis:		Destroyed places / elements:	Added spaces / elements:
Number of spaces:	8	Garden wall	T1, T2
Total depth:	3		G1, G2
Mean depth:	2		Lr2
Total rings:	10		Pr2
The Most Integrated:	C1=C2		H, B/WC,
The Most Segregated:	WC		Cr
Average integration value:	0.8701		K2
			Analysis:
			Number of spaces:
			Total depth:
			Mean depth:
			Total rings:
			The Most Integrated:
			The Most Segregated:
			Average integration value:
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

Looking at the original plan of this rural-vernacular house, the house is located in the plot parallel to the road and one side is at zero position with the garden wall. The house consists of 3 units, except for one, two spaces are directly connected to the front and back courtyards. The courtyard is entered from the street through two separate doors. Looking at the transition graph of the plan, it is seen that it has a very little branched transition graph. The maximum depth is 3, the maximum number of connections is 10 and the average depth of all rooms is 2. The most integrated place in the whole house is courtyard1 and courtyard2 with a value of 0.4350, and the most segregated place is the WC with a value of 1.3051. The average integration value of the house is 0.8701 and it shows an integrated structure with this value below 1. The main difference factor value was found to be 0.7852 (Table 4.24).

Looking at the changed spatial analysis result, the transition graph shows a highly branched characteristic. The maximum depth is 5, and the maximum number of connections has doubled compared to the original and increased to 23. The average depth of all spaces belonging to the residence is 2.89. Terrace2 is the most integrated place with a value of 0.5196 in the whole of the residence, and the most segregated place is the home room2, bathroom/wc and wc with a value of 1.2470. The average integration value of the house is 0.9171, and the building is in an integrated state as in the original plan. The basic difference factor value had a value of 0.8580 (Table 4.25). Despite the dramatic average of the changed plan shape organization space number, the BDF value has remained the same, the spatial setup shows similarity in terms of structure, and the most common type of the most homogeneous and transitive relations has been preserved. The Courtyard has been further customized and the spatial relationships of the original plan type have been preserved.

Table 4.15: The comparative analysis of the change in house no.5 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)			
A5-Original plan organization		A5-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
<p>Courtyard (0.1127) < garden (0.6764) < street=room1=room 2 =room3=room 4=wc (0.9018) < backyard (1.4655)</p>		<p>Terrace1 (0.3299) < courtyard (0.5499) < living room (0.6048) < garden (0.7698) < backyard (0.8248) < kitchen=child room=parent room=wc=bath (0.9348) < terrace2 (1.0448) < street (1.1547) < coop (1.3747)</p>	
Analysis:		Analysis:	
Destroyed places / elements:		Added spaces / elements:	
Number of spaces:	9	Garden wall	T1
Total depth:	3	wc	T2
Mean depth:	2		Cp
Total rings:	9		Bath
The Most Integrated:	C		wc
The Most Segregated:	By		
Average integration value:	0.8517		
Number of spaces:			13
Total depth:			4
Mean depth:			2.75
Total rings:			13
The Most Integrated:			T1
The Most Segregated:			Cp
Average integration value:			0.8713
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

The original plan transition graph of this residence shows that it has a branched transition graph. The total number of spaces is 9. The maximum depth is 3, the maximum number of connections is 9 and the average depth of all spaces is 2.00. The most integrated place in the whole house is the courtyard with a value of 0.1127, and the most segregated place is the backyard with a value of 1.4655. The order of integration within the spaces is shown above. The average integration value of the house is 0.8517. The main difference factor value was found to be 0.3006 (Table 4.24).

On the other hand, the changed plan transition graph shows that it has a slightly more branched transition graph. The total number of spaces is 13. The maximum depth is 4, the maximum number of connections is 13 and the average depth of all spaces is 2.75. The most integrated place in the whole house is the terrace1 with a value of 0.3299, and the most segregated place is the coop with a value of 1.3747. The average integration value of the house is 0.8513. The main difference factor value was found to be 0.6708 (Table 4.25).

Table 4.16: The comparative analysis of the change in house no.6 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)				N	
A6-Original plan organization			A6-Changed plan organization		
Justified graph of original plan			Justified graph of changed plan		
Order of integration in original plan			Order of integration in changed plan		
Courtyard1=Courtyard2 (0.3925) < room1 (0.5884) < room2 (1.1776) < street=garden= wc (1.3739)			Livingroom (0.7250) < courtyard= bedroom=kitchen (1.0151) < hall (1.3051) < street=garden (1.8852) < bath/wc (2.1752)		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	7	WC	K	Number of spaces:	8
Total depth:	3		H	Total depth:	5
Mean depth:	2.17		B/WC	Mean depth:	2.86
Total rings:	8			Total rings:	8
The Most Integrated:	C1=C2			The Most Integrated:	A=Kr
The Most Segregated:	WC			The Most Segregated:	Bh=WC
Average integration value:	0.9533			Average integration value:	1.3776
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The original example of house number six, units without hall example, has a near-linear transition graph. It consists of two indoor living spaces. The total number of spaces belonging to the house is 7, the maximum depth is 3, the maximum number of connections is 8, and the average depth of all spaces is 2.17. Courtyard1 and curtyard2 are the most integrated places with a value of 0.3925, and the most separate place is the toilet with a value of 1.3739. The average integration value throughout the residence is 1.9533. The main difference factor value of the house was found to be 0.7369 (Table 4.24). The house was not separated from the street by any garden walls.

Looking at the changed plan transition graph, it is seen that it has a linear transition graph. The total number of spaces is 8. The maximum depth is 5, the maximum number of connections is 13, and the average depth of all spaces is 2.86. The most integrated place in the whole of the residence is the living room with a value of 0.7250, and the most separate place is the bathroom and toilet with a value of 2.1752. The average integration value throughout the residence is 1.3776. The main difference factor value of the residence was found to be 0.7805 (Table 4.25).

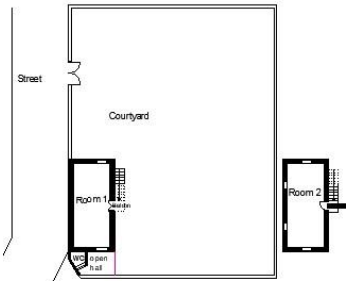
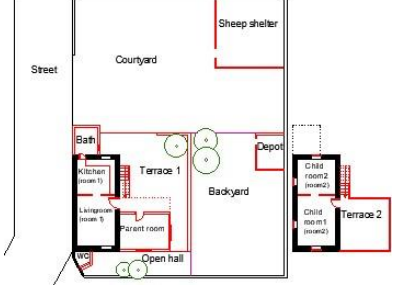
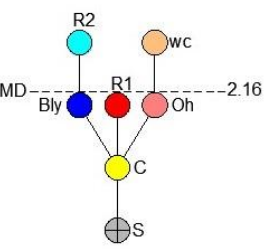
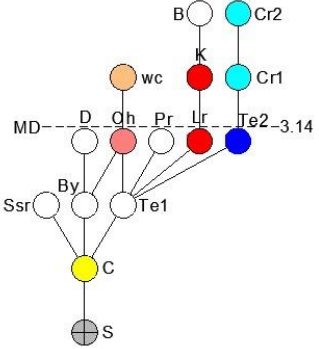
Table 4.17: The comparative analysis of the change in house no.7 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)			
A7-Original plan organization		A7-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
<p>Courtyard (0.2254) < street=room2 (0.7891) < room1=kitchen=wc=backyard2 (1.0146) < backyard1=room3 (1.5783)</p>		<p>Courtyard (0.5807) < terrace (0.6149) < corridor (0.7516) < street (0.8882) < kitchen (0.9224) < garden (0.9565) < backyard=parent room (1.0249) < hall (1.0590) < bedroom (1.0932) < terrace2 (1.1274) < child room=living room (1.2640) < backyard2 (1.4007) < bath (1.5373) < bath/wc (1.5715) < wc (1.9131)</p>	
Analysis:		Destroyed places / elements:	Added spaces / elements:
Number of spaces:	9	WC	K
Total depth:	3	R2	Lr
Mean depth:	1.88	R3	Cr
Total rings:	8		B, B/WC
The Most Integrated:	C		H
The Most Segregated:	By=R3		Cd
Average integration value:	1.0021		WC
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdresac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

The original example of residence number seven which is one of the examples of units without halls has a slightly branched transitional graph. The total number of spaces belonging to the house is 9, the maximum depth is 3, the maximum number of connections is 8, and the average depth of all spaces is 1.88. The most integrated place in the whole house is the courtyard with a value of 0.2254, and the most disjointed place is the backyard and room 3 with a value of 1.5783. The average integration value throughout the residence is 1.0021. The main difference factor value of the house was found to be 0.4954 (Table 4.24).

On the changed plan transition graph, it is seen that it has a linear and branched transition graph. The total number of spaces is 19. The maximum depth is 5, the maximum number of connections is 18, and the average depth of all spaces is 2.81. The most integrated place in the whole of the residence is the courtyard with a value of 0.5807, and the most separate place is the toilet with a value of 1.9131. The average integration value throughout the residence is 1.0021. The main difference factor value of the residence was found to be 0.7408 (Table 4.25).

Table 4.18: The comparative analysis of the change in house no.8 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)				N ▲	
A8- Original ground and upper floor plan organization		A8- Changed ground and upper floor plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
Courtyard (0.3925) < balcony=open hall (0.9814) < street=room1 (1.3739) < room2 = WC (1.9628)		Terrace1 (0.5098) < courtyard (0.7222) < open hall (0.8072) < living room=terrace2 (0.8921) < backyard (1.0196) < parent room (1.0621) < street=sheep shelter (1.2745) < wc=kitchen=child room1 (1.3595) < depot (1.5719) < bath=child room2 (1.9118)			
Analysis:		Destroyed places / elements:		Added spaces / elements:	
Number of spaces:	7	WC	B	Number of spaces:	15
Total depth:	3		T1, T2	Total depth:	5
Mean depth:	2.16		Pr	Mean depth:	3.14
Total rings:	6		Oh	Total rings:	15
The Most Integrated:	C		Ssr	The Most Integrated:	T1
The Most Segregated:	WC		WC	The Most Segregated:	Bh=Cr2
Average integration value:	1.2898			Average integration value:	1.1952
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

On the original plan of this house, which is in the category of the third sub-type of rural-vernacular houses without halls, it consists of two floors and each floor is a single unit. The house is in zero position with a garden wall in the plot. The courtyard is entered through a door from the street. The ground floor is directly connected to the courtyard and the second floor is connected to the courtyard by an intermediate space. Looking at the ground floor plan transition graph, it is seen that it has a very little branched transition graph. It consists of 7 spaces in total, including the street belonging to the residence. The maximum depth is 3, the maximum number of connections is 6 and the average depth (md) of all spaces is 2.16. In the order of integration value, from the lowest to the highest value, the most integrated place in the housing is the courtyard with a value of 0.3925. The most segregated place with the highest value is the toilet with a value of 1.9628. The average integration value of the house is 1.2898. The basic difference factor value has a value of 0.6111 (Table 4.24). This result shows that the original plan has a stronger structure. This value shows little variation in the changed plan.

On the spatial changed graph of the changed plan of the house, it is seen that it has a branched transition graph. The total number of spaces is 15, and the number of spaces has doubled compared to the original plan. The maximum depth is 5 and the average depth is 3.14. While the most integrated place in the whole of the house is the terrace1 with a value of 0.5098, the most segregated place is the bathroom and the children's room2, which is seen at a value of 1.9118. The baseline difference factor value had a value of 0.7050 (Table 4.25). Despite the dramatic average of the number of spaces in the changed plan organization, the BDF value did not show a great difference. Compared to the original plan, this plan is more homogeneous in terms of spatial relations. The average integration value of the house is 1.1952.

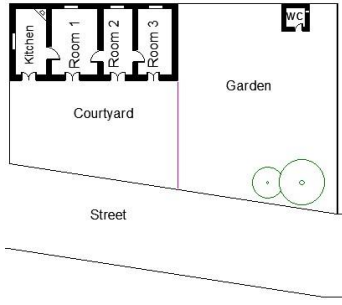
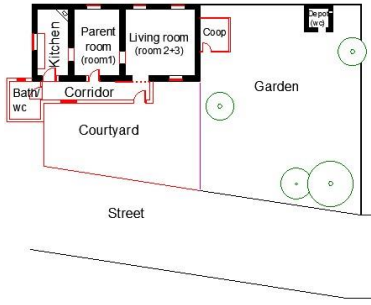
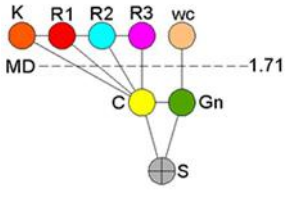
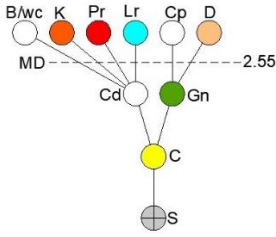
Table 4.19: The comparative analysis of the change in house no.9 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)			
A9-Original plan organization		A9-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
<p>Courtyard (0.1962) < garden (0.7851) < room2 = room3 (0.9814) < street=room1 (1.1776) < WC (1.7665)</p>		<p>Courtyard1 (0.1441) < open hall (0.4805) < kitchen=living room (0.5766) < garage=bedroom (0.6246) < street=garden (0.6727) < coop=wc=stable (0.7207) < parent room (0.9129) < bath/wc (1.0571) < depot (1.2013)</p>	
Analysis:		Destroyed places / elements:	Analysis:
Number of spaces:	7		B/WC
Total depth:	3		K
Mean depth:	2		Oh
Total rings:	7		G
The Most Integrated:	C		D
The Most Segregated:	WC		Cp
Average integration value:	1.0094		Ssr
		Added spaces / elements:	Analysis:
			Number of spaces:
			14
			Total depth:
			3
			Mean depth:
			2.1
			Total rings:
			16
			The Most Integrated:
			C
			The Most Segregated:
			D
			Average integration value:
			0.6933
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

The number of users is 4, a family with 2 children. The user is a family that immigrated from Adana, Turkey. Showing a simple spatial transition graph, this original residence consists of three space units. The courtyard is entered directly from the street. The total number of spaces is 7, the maximum depth is 3, the maximum number of connections is 7 and the average depth of all spaces is 2. The most integrated place in the whole of the residence is the courtyard with a value of 0.1962 and the most segregated place is the toilet with a value of 1.7665. The main difference factor value of the residence was found to be 0.4005 (Table 4.24).

The changed plan has a highly branched transition graph compared to the original plan. The total number of spaces is 14, the maximum depth is 3, the maximum number of connections is 16 and the average integration value is 2.1. The most integrated place in the whole of the residence is the courtyard with a value of 0.1441 and the most segregated place is the warehouse with a value of 1.2013. The main difference factor value of the residence was found to be 0.4259 (Table 4.25). The housing is not separated from the street by any garden wall.

Table 4.20: The comparative analysis of the change in house no.10 UWH

Type of rural-vernacular house: UNITS WITHOUT HALL (UWH)			
A10-Original plan organization		A10-Changed plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Courtyard (0.1450) < garden (0.5800) < street=room1=room2 (0.7250) < kitchen= room3 (0.8701) < wc (1.4501)		Courtyard=corridor (0.5454) < garden (0.9090) < street=bath/wc=kitchen=parent room=living room (1.2727) < coop=depot (1.6363)	
Analysis:		Destroyed places / elements:	Added spaces / elements:
Number of spaces:	8	Room2 wall	Cd:
Total depth:	2		B/WC
Mean depth:	1.71		Cp:
Total rings:	11		
The Most Integrated:	C		
The Most Segregated:	WC		
Average integration value:	0.7613		
Analysis:		Number of spaces:	10
		Total depth:	3
		Mean depth:	2.55
		Total rings:	9
		The Most Integrated:	C=Cd
		The Most Segregated:	Cp=D
		Average integration value:	1.1636
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

This original rural residence example consists of 3 rooms and 1 kitchen. The residential user is an immigrant family from Adana, Turkey. The graph has a fairly simple, linear, and extraordinarily little-branched transition graph. The total number of spaces belonging to the residence is 8, the maximum depth is 2, the maximum number of connections is 11 and the average integration value is 1.7. The most integrated place

in the whole house is the courtyard with a value of 0.1450, and the most segregated place is the toilet with a value of 1.4501. The main difference factor value of the residence was found to be 0.3507. The general setup of the house is quite simple. It consists of a kitchen and three different-sized rooms. WC is separate from the building in a corner of the garden. The housing is not separated from the street by any garden wall. The courtyard in the front is a place that hosts both circulation and living activities.

In the example of the changed plan, a branched transitional graph can be seen compared to the previous one. The total number of spaces belonging to the house is 10, the maximum number of depths is 3, the maximum number of connections is 9 and the average integration value is 2.55. The most integrated space in the whole of the housing is the courtyard and the corridor with a value of 0.5454, the most segregated place is the coop and depot with a value of 1.6363. The main difference factor value of the residence was found to be 0.7884 (Table 4.25).

4.3.1.1 Comparison of Original and Changed Houses in Terms of Order of Integration (UWH)

In the tables below, all residences are classified and numbered according to their location on the plot. The same method was applied for these examples and the other two types (Units with Inner Hall, and Units with Outer Hall) of residences (See Tables 4.4; 4.5; 4.6). The integration value of rural-vernacular houses 'Units Without Hall' is ranked from small to big. Spatial analyzes of rural-vernacular houses were made according to these values. The tables (Table 4.21 and Table 4.22) compare the original plans of the ten basic, plain rural housing types and their altered states. It is known that the lowest value represents the most integrated spaces and the highest value represents

the most segregated spaces, and the order is from integrated (frequently used) to segregated (rarely used).

Table 4.21: Order of integration in original plan UWH

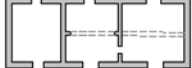
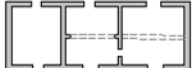
A1	 UNITS WITHOUT HALL (UWH)
1 st Group	1-Courtyard (0.1962) < backyard (0.7851) < street=room1=room2=roo3 (1.1776) < wc (1.7665)
	2-Courtyard1 (0.3383) < courtyard2=room2=depot1 (0.9018) < room3 = wc (1.1273) < street=room1=depot2 (1.6910)
	3-Courtyard (0.4734) < backyard (0.9469) < street=room1 (1.8939) < wc (2.3674)
2 nd Group	4-Courtyard1=courtyard2 (0.4350) < room2 (0.5800) < street=Cs=room 1(1.0151) < Kitchen (1.1601) < wc (1.3051)
	5-Courtyard (0.1127) < garden (0.6764) < street=room1=room2=room3=room4=wc (0.9018) < backyard (1.4655)
	6-Courtyard1=Courtyard2 (0.3925) < room1 (0.5884) < room2 (1.1776) < street=garden= wc (1.3739)
3 rd Group	7-Courtyard (0.2254) < street=room2 (0.7891) < room1= kitchen=wc=backyard2 (1.0146) < backyard1= (R6) room3 (1.5783)
	8-Courtyard (0.3925) < balcony=open hall (0.9814) < street=room1 (1.3739) < room2 = wc (1.9628)
	9-Courtyard (0.1962) < garden (0.7851) < (R5 ¹) room2=room3 (0.9814)< street=room1 (1.1776) < wc (1.7665)
10-Courtyard (0.1450) < garden (0.5800) < street=room1=room2 (0.7250) < kitchen=room3 (0.8701) < wc (1.4501)	

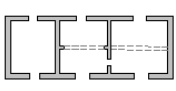
Table 4.22: Order of integration in changed plan UWH

A2	 UNITS WITHOUT HALL (UWH)
1 st Group	1-Living room (0.6727) < hall1 (0.7688) < terrace (0.8168) < kitchen (1.0091) < courtyard (1.1052) < hall2 (1.1532) < child room (1.2493) < bedroom=parent room (1.3454) < street1=backyard=street2 (1.6818) < bath/wc=wc (1.7298)
	2-Living room1 (0.6048) < corridor (0.6598) < garden (0.8798) < living room2 (0.9898) < laundry (1.1547) < courtyard=parent room=bed room=child room (1.2647) < kitchen (1.3745) < street (1.4847) < terrace (1.6497) < bath/wc (1.7596)
	3-Hall2 (0.8199) < kitchen (0.9224) < hall1 (0.9907) < terrace 2(1.0932) < living room (1.2982) < child room=parent room=bath/wc (1.3324) < courtyard (1.4690) < wc (1.5032) < balcony (1.5373) < terrace1 (1.6740) < garden2=storehouse (1.9815) < terrace3 (2.0498) < street=garden1 (2.1865)
2 nd Group	4-Terrace2 (0.5196) < terrace1=living room1(0.5715) < hall=courtyard1 (0.7794) < street=living room2 (0.8313) < courtyard way=culdesac=child room (0.8833) < parent room1=kitchen1=bath/wc=kitchen2 (0.9872 < depot=garden1=garden2 (1.0392) < parent room2=bath/wc=wc (1.2470)
	5-Terrace1 (0.3299) < courtyard (0.5499) < living room (0.6048) < garden (0.7698) < backyard (0.8248) < kitchen=child room=parent room=wc=bath (0.9348) < terrace2 (1.0448) < street (1.1547) < coop (1.3747)
	6-Livingroom (0.7250) < courtyard= bedroom=kitchen (1.0151) < hall (1.3051) < street=garden (1.8852) < bath/wc (2.1752)

3 rd Group	7- Courtyard (0.5807) < terrace (0.6149) < corridor (0.7516) < street (0.8882) < kitchen (0.9224) < garden (0.9565) < backyard=parent room (1.0249) < hall (1.0590) bedroom (1.0932) < terrace2 (1.1274) < child room=living room (1.2640) < backyard2 (1.4007) < bath (1.5373) < bath/wc (1.5715) < wc (1.9131)
	8- Terrace1 (0.5098) < courtyard (0.7222) < open hall (0.8072) < living room=terrace2 (0.8921) < backyard (1.0196) < parent room (1.0621) < street=stable (1.2745) < wc=kitchen=child room1 (1.3595) < depot (1.5719) < bath=child room2 (1.9118)
	9- Courtyard1 (0.1441) < open hall (0.4805) < kitchen=living room (0.5766) < garage=bedroom (0.6246) < street=garden (0.6727) < coop=wc=stable (0.7207) < parent room (0.9129) < bath/wc (1.0571) < depot (1.2013)
	10- Courtyard=corridor (0.5454) < garden (0.9090) < street=bath/wc=kitchen=parent room=living room (1.2727) < coop=depot (1.6363)

In line with the integration values of the spaces specified in Tables 4.21 and Table 4.22 above, the most integrated and the most divergent space for each residence are given in the table below (Table 4.23). According to this the most integrated space in all of the original examples of the ‘Units Without Hall’ type is the courtyard (10/10). The courtyard has the feature of being the main distributive space and the most integrated core space in all residences. The most segregated place is the toilet (7/10). In changed examples, the most integrated space is still the courtyard or terrace, that is, the courtyard (6/10) that has been covered and turned into a terrace; The most segregated space is the bathroom and toilet (6/10).

Table 4.23: Comparison of original and changed houses in terms of integration values

A1+A2	 SAMPLES OF UNITS WITHOUT HALL (WUH)			
House No:	Original housing examples A1		Changed housing examples A2	
	The Most Integrated	The Most Segregated	The Most Integrated	The Most Segregated
1	Courtyard	WC	Living room	Bath/WC=WC
2	Courtyard	Street=Room1=Depot	Living room	Bath/WC
3	Courtyard	WC	Hall 2	Street=Garden 1
4	Courtyard 1=Courtyard 2	WC	Terrace 2	Parent room 2=Bath/WC=WC
5	Courtyard	Backyard	Terrace 1	Coop
6	Courtyard	Street =Garden=WC	Living room	Bath/WC
7	Courtyard	Backyard 1=Room 3	Courtyard	WC
8	Courtyard	Room 2= WC	Terrace 1	Bath=Childroom 2
9	Courtyard	WC	Courtyard	Depot
10	Courtyard	WC	Courtyard=Corridor	Coop=Depot
General	Courtyard 10/10	WC 7/10	Courtyard or Terrace 6/10 Living room 3/10	Bath/WC, WC and bath 6/10

4.3.1.2 Comparison of Original and Changed Houses in Terms of Basic Differentiation Factor Values (BDF)

The main Basic Differentiation Factor (BDF) of the houses stated in Table 4.24 and Table 4.25 below has been determined. The main basic differentiation factor (BDF) values were determined for each residence within the space of the original and changed plans, and then basic differentiation factor (BDF) values were compared within the space of sub-types, both in the original plans and changed plans of the houses.

Table 4.24: Basic differentiation factor values of original houses Units Without Hall

A1- House no Original plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UWH)	7	3	6	1.0655	0.1962	1.7665	0.4096
2- (UWH)	9	4	8	1.1524	0.3382	1.6910	0.6143
3- (UWH)	5	3	4	1.5151	0.4734	2.3674	0.6086
4- (UWH)	8	3	10	0.8701	0.4350	1.3051	0.7852
5- (UWH)	9	3	9	0.8517	0.1127	1.4655	0.3006
6- (UWH)	7	3	8	0.9533	0.3925	1.3739	0.7369
7- (UWH)	9	3	8	1.0021	0.2254	1.5783	0.4954
8- (UWH)	7	3	6	1.2898	0.3925	1.9628	0.6111
9- (UWH)	7	3	7	1.0094	0.1962	1.7665	0.4005
10- (UWH)	8	2	11	0.7613	0.1450	1.4501	0.3507
Average	7.6	3	-	1.0471	0.2907	1.6727	0.5313

Table 4.25: Basic differentiation factor values of changed houses Units Without Hall

A2- House no Changed plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UWH)	14	6	14	1.2836	0.6727	1.7298	0.8377
2- (UWH)	13	5	13	1.2013	0.6048	1.7596	0.7961
3- (UWH)	17	8	16	1.5112	0.8199	2.1865	0.8239
4- (UWH)	20	5	23	0.9171	0.5196	1.2470	0.8580
5- (UWH)	13	4	13	0.8713	0.3299	1.3747	0.6708
6- (UWH)	8	5	8	1.3776	0.7250	2.1752	0.7805
7- (UWH)	17	5	18	1.1173	0.5807	1.9131	0.7408
8- (UWH)	15	5	15	1.1952	0.5098	1.9118	0.7050
9- (UWH)	14	3	17	0.6933	0.1441	1.2013	0.4259
10- (UWH)	10	3	9	1.1636	0.5454	1.6363	0.7884
Average	14.1	4.9	-	1.1332	0.5452	1.7135	0.7427

Comparison of original and changed houses according to their location on the land, among the examples of rural-vernacular houses without hall (UWH) showed that the houses numbered 1, 2 and 3 are the same type of houses (Table 4.26 and Table 4.27). They do not have the same number of spaces, but these three housing examples are open on all four sides in the middle of the plot. The residences have the position of places that lead directly to the outside. Compared to the original sample, the number of spaces in the house has changed and has nearly doubled. Since the basic difference values of the changed houses are higher, they have a more homogeneous structure. At the same time, as the number of places increases, the value of homogeneity is inevitable.

Table 4.26: Basic differentiation values from the subtype's original plans UWH



A) UWH (1 st gr. original plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UWH)	7	3	6	1.0655	0.1962	1.7665	0.4096
2- (UWH)	9	4	8	1.1524	0.3382	1.6910	0.6143
3- (UWH)	5	3	4	1.5151	0.4734	2.3674	0.6086
Average	7	3.3		1.2443	0.3359	1.9416	0.5442

Table 4.27: Basic differentiation values from the subtype's changed plans UWH

(A) Unit without hall (1 st gr. changed plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UWH)	14	6	14	1.2836	0.6727	1.7298	0.8377
2- (UWH)	13	5	13	1.2013	0.6048	1.7596	0.7961
3- (UWH)	17	8	16	1.5112	0.8199	2.1865	0.8239
Average	14.7	6.33		1.3320	0.6991	1.8920	0.8192

The houses numbered 4, 5, 6 and 7, which are among the examples of rural-vernacular units without halls, are the same alpine-type houses (Table 4.28 and 4.29). Since the base difference values of the changed houses are higher, they have a more homogeneous structure.

Table 4.28: Basic differentiation values from the subtype's original plans UWH



A) Units without hall (2 nd gr. original plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
4- (UWH)	8	3	10	0.8701	0.4350	1.3051	0.7852
5- (UWH)	9	3	9	0.8517	0.1127	1.4655	0.3006
6- (UWH)	7	3	8	0.9533	0.3925	1.3739	0.7369
7- (UWH)	9	3	8	1.0021	0.2254	1.5783	0.4954
Average	8.25	3		0.9193	0.2914	1.4307	0.5795

Table 4.29: Basic differentiation values from the subtype's changed plans UWH

A) Units without hall (2 nd gr. changed plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
4- (UWH)	20	5	23	0.9171	0.5196	1.2470	0.8580
5- (UWH)	13	4	13	0.8713	0.3299	1.3747	0.6708
6- (UWH)	8	5	8	1.3776	0.7250	2.1752	0.7805
7- (UWH)	17	5	18	1.1173	0.5807	1.9131	0.7408
Average	14.5	4.75		1.0771	0.5388	1.6775	0.7625

Among the examples of rural-vernacular houses without hall (UWH), the houses numbered 8, 9 and 10 are the same type of houses (Table 4.30 and 4.31). In housing comparisons, it is seen that the number of spaces has increased in the changed plans. The increasing number of spaces increased the basic difference value and increased the homogeneity rate. In all types, homogenization is observed as almost proportional to the increase in the number of spaces.

Table 4.30: Basic differentiation values from the subtype's original plans UWH



A) Units without hall (3 rd gr. Original plans)	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
8- (UWH)	7	3	6	1.2898	0.3925	1.9628	0.6111
9- (UWH)	7	3	7	1.0094	0.1962	1.7665	0.4005
10- (UWH)	8	2	11	0.7613	0.1450	1.4501	0.3507
Average	7.3	3		1.0202	0.2446	1.7265	0.4541

Table 4.31: Basic differentiation values from the subtype's changed plans UWH

A) Units without hall (3 rd gr. Changed plans)	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
8- (UWH)	15	5	15	1.1952	0.5098	1.9118	0.7050
9- (UWH)	14	3	17	0.6933	0.1441	1.2013	0.4259
10- (UWH)	10	3	9	1.1636	0.5454	1.6363	0.7884
Average	13	3.7		1.0174	0.3998	1.5831	0.6398

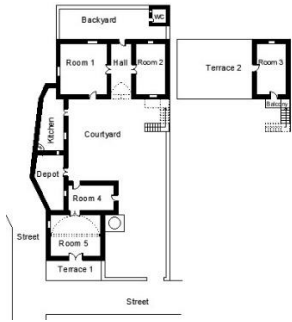
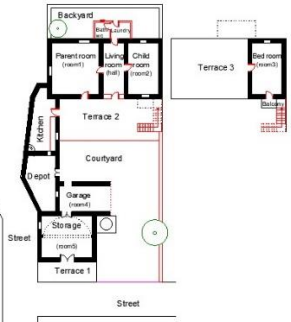
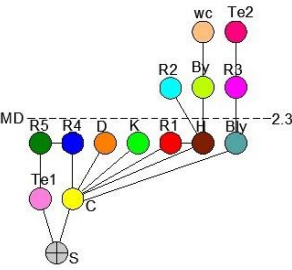
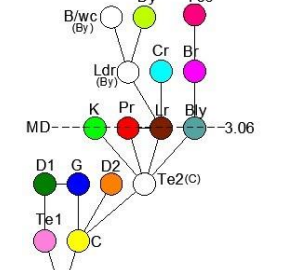
4.3.2 Comparison of Original and Changed Houses Units With Inner Hall - (UIH)

Within the scope of 10 rural-vernacular “units with inner hall” analyzed in Büyükkonuk village, 3 residential users immigrated from South (Paphos / Baf village) Cyprus to Büyükkonuk village during 1974 and 1 residential user was a Turkish Cypriot family living in Büyükkonuk village before 1974. The remaining 6 rural-vernacular residential users that have “Units with Inner Hall” are families who came to Cyprus from the city of Adana (From, 3xSüphantere, 2xMansurlu, and Ceyhan villages) in Turkey after 1975 (See Appendix C: Inventory charts for Units with Inner Hall UIH-2). The comparative analysis order made in the sample of the rural-

vernacular units without a hall was made according to the same analysis order for the units with an inner hall (See Tables 4.32, 4.33, 4.34, 4.35, 4.36, 4.37, 4.38, 4.39, 4.40, 4.41).

Here, as in all the changed plans, all the new interventions, the addition of the new space, all open transition spaces, the changed door, window places, stairs and new garden walls were added on the plans and indicated with a red line on the new plan drawings. Comparison of original and changed houses in the housing spaces examined as a result of spatial transition graph analysis of all rural-vernacular housing samples showed that for each rural-vernacular house, different results were obtained in the spatial analyses covering both plans.

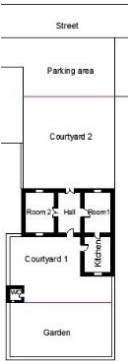
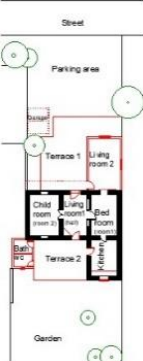
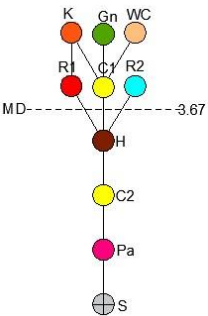
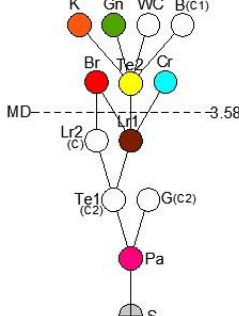
Table 4.32: The comparative analysis of the change in house no.1 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)				N	
B1-Original ground and upper floor plan organization		B1-Changed ground and upper floor plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
<p>Courtyard (0.3824) < hall (0.6373) < room1=balcony (0.7647) < street=room4 (0.8072) < depot=kitchen (0.9347) < bacyard (1.1046) < room2 (1.1896) < terrace1=room5=room3 (1.2321) < wc (1.6569) < terrace2 (1.7844)</p>		<p>Terrace2 (0.5466) < courtyard (0.7174) < living room (0.7516) < parent room (0.8883) < balcony (0.9224) < kitchen (1.0591) < street=garage=laundry (1.1274) < depot2 (1.2299) < child room (1.2641) < bedroom (1.3666) < terrace2=depot1 (1.5374) < bath/wc=bacyard (1.6399) < terrace3 (1.8790)</p>			
Analysis:		Destroyed places / elements:		Analysis:	
Number of spaces:	15	Stairs	B/WC	Number of spaces:	17
Total depth:	4	Room4 wall	Ldr	Total depth:	5
Mean depth:	2.36		Te2	Mean depth:	3.06
Total rings:	16		Stairs	Total rings:	18
The Most Integrated:	C			The Most Integrated:	T2
The Most Segregated:	T2			The Most Segregated:	T3
Average integration value:	1.0310			Average integration value:	1.1978
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

The example of the original house with an inner sofa number one has a branched transitional graphic. The total number of spaces belonging to the house is 15, the maximum depth is 4, the maximum number of connections is 16, and the average depth of all spaces is 2.36. The most integrated place in the whole of the residence is the courtyard with a value of 0.3824, and the most segregated place is the terrace2 with a value of 1.7844. The order of integration within the spaces is as in Table 4.32 above. The average integration value throughout the residence is 1.0310. The main difference factor value of the house was found to be 0.6200 (Table 4.45).

On the transition graph of the changed version, it is seen that it has a less branched and linear transition graph. The total number of spaces is 17. The maximum depth is 5, the maximum number of connections is 18, and the average depth of all spaces is 3.06. Terrace2 is the most integrated space with a value of 0.5466, and the most segregated space is terras3 with a value of 1.8790. The average integration value for the house is 1.1978. The main difference factor value of the residence was found to be 0.7369 (Table 4.46).

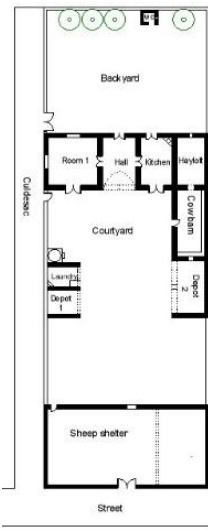
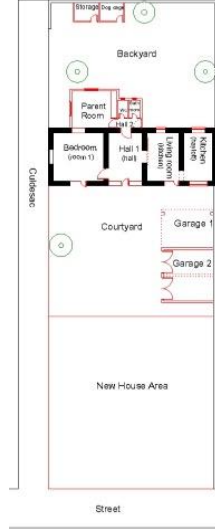
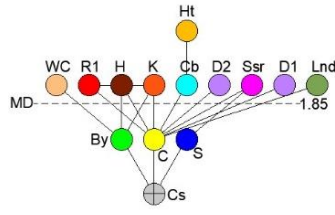
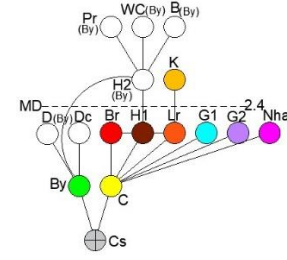
Table 4.33: The comparative analysis of the change in house no.2 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)				N ▲	
B2-Original plan organization			B2-Changed plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
Room2 (0.5455) < curtyard1 (0.7273) < courtyard2 (0.9091) < room1(1.0909) < rom3=kitchen (1.2727) < garden=wc (1.4545) < street (2.1818)			Living room1 (0.5499) < terrace1 (0.7149) < terrace2 (0.8249) < bedroom (0.9348) < parking area=living room2 (1.0998) < child room (1.1548) < garden=bath=wc (1.4297) < kitchen (1.5397) < street=garage (1.7047)		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	10	WC	T1	Number of spaces:	13
Total depth:	5	Garden wall	T2	Total depth:	5
Mean depth:	3.67		Lr	Mean depth:	3.58
Total rings:	10		B	Total rings:	13
The Most Integrated:	R2		WC	The Most Integrated:	Lr
The Most Segregated:	S			The Most Segregated:	S=G
Average integration value:	1.2364			Average integration value:	1.2013
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The example of the original house units with inner hall number two has a linear transition graph. The total number of spaces belonging to the house is 10, the maximum depth is 5, the maximum number of connections is 10, and the average depth of all spaces is 3.67. The most integrated place in the whole house is room 2 with a value of 0.5455, and the most segregated place is the street space with a value of 2.1818. The order of integration within the spaces is as in Table 4.32 above. The average integration value for the house is 1.2364. The main difference factor value of the house was found to be 0.6703 (Table 4.45).

Looking at the changed plan transition graph with the changed interior sofa, it is seen that it has a transition graph that maintains its linearity. The total number of spaces is 13. The maximum depth is 5, the maximum number of connections is 13, and the average depth of all spaces is 3.58. The most integrated place in the whole of the house is the living room with a value of 0.5499, and the most segregated place is the street and garage with a value of 1.7047. The average integration value throughout the residence is 1.2013. The main difference factor value of the residence was found to be 0.7776 (Table 4.46).

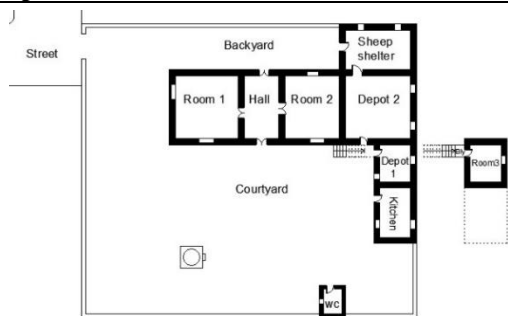
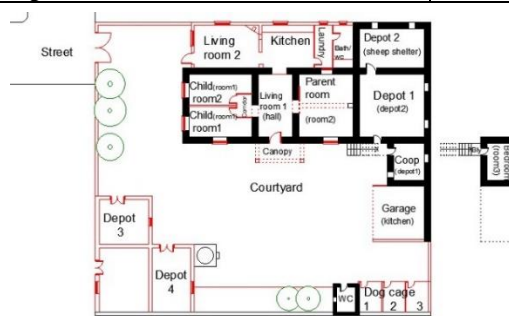
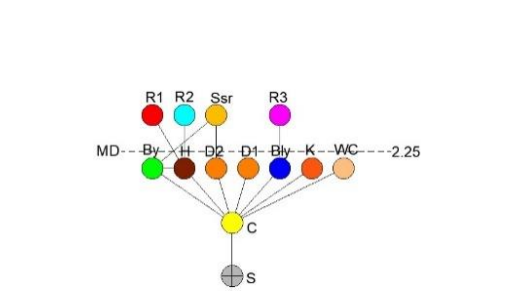
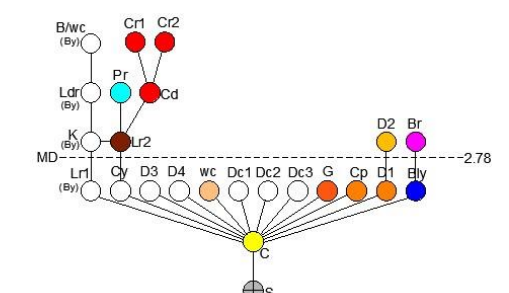
Table 4.34: The comparative analysis of the change in house no.3 UIH

Type of Rural-Vernacular House: UNITS WITH INNER HALL (UIH)				N	
B3-Original plan organization		B3-Changed plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
<p>Courtyard (0.2403) < cul-de-sac=hall (0.5286) < kitchen (0.5766) < room1(0.6727) < cow barn=sheep shelter (0.7208) < backyard (0.7688) < depot1=depot2 (0.8169) < street (1.0091) < hayloft (1.2974) < wc (1.3455)</p>		<p>Courtyard=Hall1 (0.4932) < hall2 (0.5311) < cul-de-sac (0.6449) < backyard (0.6829) < living room (0.7587) < bedroom (0.8346) < garage1=garage2=new house area (1.0243) < parent room=wc=bath (1.0622) < depot=dog cage (1.2140) < kitchen (1.2899)</p>			
Analysis:		Destroyed places / elements:		Added spaces / elements:	
Analysis:		Destroyed places / elements:		Analysis:	
Number of spaces:	14	Ldr	Pr	Number of spaces:	16
Total depth:	3	D1	B	Total depth:	4
Mean depth:	1.85	D2	G1,G2	Mean depth:	2.4
Total rings:	18	Cb	WC	Total rings:	18
The Most Integrated:	C	Ssr	H2	The Most Integrated:	C=H1
The Most Segregated:	WC	WC	D	The Most Segregated:	K
Average integration value:	0,7757		Dc	Average integration value:	0,901
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

The example of the original house with inner sofa number three has a branched transition graphic. The total number of spaces belonging to the house is 14, the maximum depth is 3, the maximum number of connections is 18, and the average depth of all spaces is 1.85. The most integrated place in the whole house is the courtyard with a value of 0.2403, and the most segregated place is the toilet with a value of 1.3455. The order of integration within the spaces is as in Table 4.33 above. The average integration value for the house is 0.7757. The main difference factor value of the house was found to be 0.5566 (Table 4.45).

The changed plan transition graph with the changed interior sofa preserves its branched transition graphic feature as in the original plan. The total number of spaces belonging to the residence is 16. The maximum depth is 4, the maximum number of connections is 18, and the average depth of all spaces is 2.4. Space relations have changed, but the number of space connections has remained the same. The most integrated place in the whole house is the courtyard and the hall1 with a value of 0.4932, and the most segregated place is the kitchen with a value of 1.2899. The average integration value throughout the residence is 0.901. The main difference factor value of the residence was found to be 0.8303 (Table 4.46).

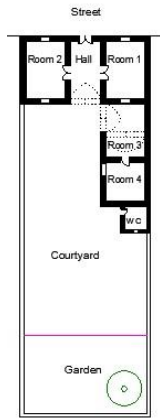
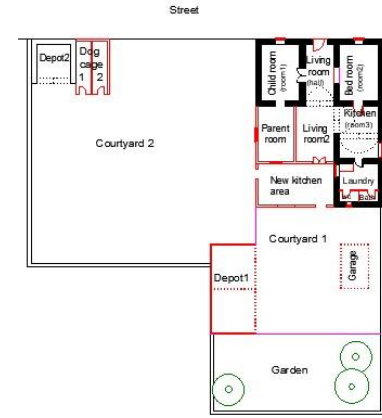
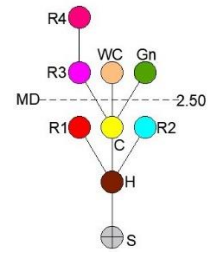
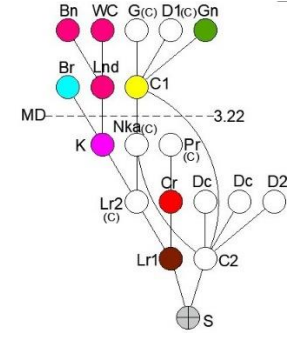
Table 4.35: The comparative analysis of the change in house no.4 UIH

Type of vernacular house: UNITS WITH INNER HALL (UIH)			
B4- Original ground and upper floor plan organization		B4-Changed ground and upper floor plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Courtyard (0.2200) < hall (0.4949) < backyard (0.5499) < depot2=balcony (0.7149) < kitchen=wc (0.8249) < stable (1.0448) < rom1=room2 (1.0998) < room3 (1.3198)		Courtyard (0.3670) < canopy (0.5408) < livingroom1 (0.5795) < living room2 (0.6760) < kitchen (0.7147) < depot3=balcony (0.7533) < street=depot1=depot2=wc=doc cage1=dog cage2=dog cage3=garage= coop=(0.7919) < corridor (1.0237) < laundry=parentroom (1.1010) < depot4=bedroom (1.1783) < child room1=child room2 (1.4487) < bath/wc (1.5259)	
Analysis:		Destroyed places / elements:	Added spaces / elements:
Number of spaces:	13	K	Lr2
Total depth:	3		K
Mean depth:	2.25		B/WC
Total rings:	14		Ldr
The Most Integrated:	C		D3, D4
The Most Segregated:	R3		G
Average integration value:	0.8122		
Legend:		Analysis:	
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage		Number of spaces: 24	
		Total depth: 5	
		Mean depth: 2.78	
		Total rings: 24	
		The Most Integrated: C	
		The Most Segregated: Br/wc	
		Average integration value: 0.8966	

The example of the original house with an inner sofa number four has a branched transition graph. The total number of spaces belonging to the house is 13, the maximum depth is 3, the maximum number of connections is 14, and the average depth of all spaces is 2.25. The most integrated place in the whole house is the courtyard with a value of 0.2200, and the most disjointed place is room 3 with a value of 1.3198. The order of integration within the spaces is as in Table 4.34 above. The average integration value throughout the residence is 0.8122. The main difference factor value of the house was found to be 0.5425 (Table 4.45).

The plan transition graph with the changed interior sofa shows the feature of a branched transition graph in a wide way. The total number of spaces belonging to the residence is 24. The maximum depth is 5, the maximum number of connections is 24, and the average depth of all spaces is 2.78. The number of space connections has doubled. The most integrated place in the whole house is the courtyard with a value of 0.3670, and the most segregated place is the bathroom and toilet with a value of 1.5259. The average integration value for the house is 0.8966. The main difference factor value of the residence was found to be 0.6624 (Table 4.46).

Table 4.36: The comparative analysis of the change in house no.5 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)				N	
B5-Original plan organization		B5-Changed plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
<p>Courtyard (0.4509) < hall (0.5637) < room3 (1.0146) < wc=garden (1.2401) < street=room1=room2 (1.3528) < room4 (1.8038)</p>		<p>Living room2=new kitchen are (0.6791) < courtyard2 (0.7357) < courtyard1(0.8489) < street=living room1 (0.8772) < kitchen (0.9338) < gace1=dog cage2=depot2 (1.2168) < child room=laundry (1.3017) < garage=depot1=garden (1.3299) < bedroom (1.4148) < parent room=bath=wc (1.7827)</p>			
Analysis:		Destroyed places / elements:	Added spaces/ elements:	Analysis:	
Number of spaces:	9	WC	D1	Number of spaces:	19
Total depth:	4		G	Total depth:	5
Mean depth:	2.50		Pr	Mean depth:	3.22
Total rings:	8		Lr	Total rings:	20
The Most Integrated:	C		Ldr	The Most Integrated:	Lr=Nka
The Most Segregated:	R4		B, WC	The Most Segregated:	Pr=Br=wc
Average integration value:	1.1524		Dc1, Dc2	Average integration value:	1.1914
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

This example of a rural-vernacular house with an inner hall number five has a branched transition graphic. The total number of spaces belonging to the house is 9, the maximum depth is 4, the maximum number of connections is 8, and the average depth value of all spaces is 2.50. The most integrated place in the whole house is the courtyard with a value of 0.4509, and the most segregated place is room 4 with a value of 1.8038. The order of integration within the spaces is as in Table 4.35 above. The average integration value throughout the residence is 1.1524. The main difference factor value of the house was found to be 0.6851 (Table 4.45).

The changed plan transition graph with the changed interior sofa has the characteristic of a branched and linear transition graph. The total number of spaces belonging to the residence is 19. The maximum depth is 5, the maximum number of connections is 20, and the average depth of all spaces is 3.22. The number of space connections has doubled. The most integrated place in the whole of the residence is the living room2 and the newly built kitchen with a value of 0.6791. The most segregated place of the house is the parent room, bathroom and toilet with a value of 1.7827. The average integration value for the house is 1.1914. The main difference factor value of the residence was found to be 0.8266 (Table 4.46).

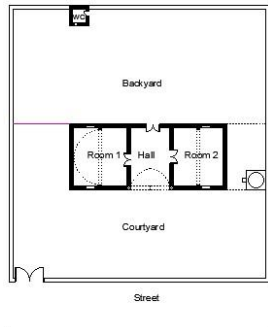
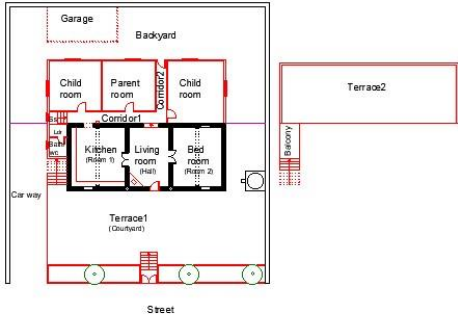
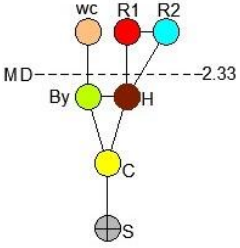
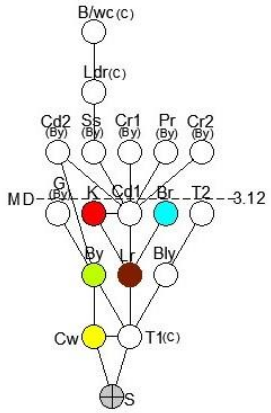
Table 4.37: The comparative analysis of the change in house no.6 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)			
B6-Original plan organization		A6-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
<p>Courtyard (0.2200) < hall (0.4399) < open space1 (0.6599) < room4=shop=parking area=wc=room3=open space2 (0.8249) < street1(0.8798) < street2 (0.9898) < room1=room2 (1.0448) < room1 (1.0448)</p>		<p>Terrace1 (0.5977) < courtyard1 (0.7015) < living room1 (0.8054) < terrace2 (0.8574) < kitchen1=courtyard2 (1.1172) < street1=bath=wc (1.1692) < parking area (1.1699) < kitchen2 (1.2211) < living room2=bedroom (1.2731) < living room3 (1.3250) < street2=depot=bedroom2 (1.5849) < bedroom3=bath/wc (1.6888) < open space (2.0525)</p>	
Analysis:		Destroyed places / elements:	Added spaces/ elements:
Number of spaces:	13	WC	K
Total depth:	3		B/WC
Mean depth:	2.33		T1, T2
Total rings:	13		D
The Most Integrated:	C		WC
The Most Segregated:	R1		Br
Average integration value:	0.7868		B
Analysis:		Analysis:	
Number of spaces:	20		
Total depth:	5		
Mean depth:	3.37		
Total rings:	21		
The Most Integrated:	Te1		
The Most Segregated:	Os		
Average integration value:	1.2575		
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

This rural-vernacular house example, number 6, with an inner hall, has a branched transition graph. The total number of spaces belonging to the house is 13, the maximum depth is 3, the maximum number of connections is 13, and the average depth value of all spaces is 2.33. The most integrated place in the whole house is the courtyard with a value of 0.2200, and the most disjointed place is the room 1 with a value of 1.0448. The order of integration within the spaces is as in Table 4.36 above. The average integration value for the house is 0.7868. The main difference factor value of the house was found to be 0.6348 (Table 4.45).

On the plan transition graph with the changed interior sofa, a branched and linear transition graph can be seen. The total number of spaces belonging to the residence is 20. The maximum depth is 5, the maximum number of connections is 21, and the average depth of all spaces is 3.37. The number of space and space connections has increased. The most integrated place in the whole of the residence is the terrace1 with a value of 0.5977. The most segregated space of the residence is the semi-open space with a value of 2.0525, which is connected to the street2. The average integration value throughout the residence is 1.2575. The main difference factor value of the residence was found to be 0.7319 (Table 4.46).

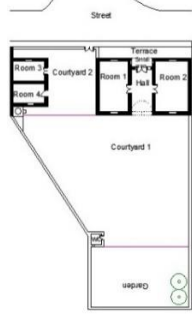
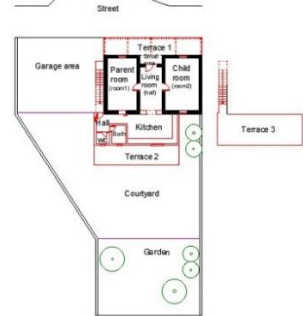
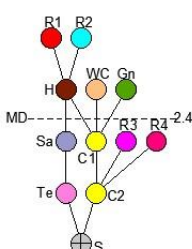
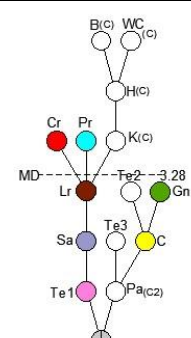
Table 4.38: The comparative analysis of the change in house no.7 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)				N	
B7-Original plan organization		B7-Changed plan organization			
					
Justified graph of original plan		Justified graph of changed plan			
					
Order of integration in original plan		Order of integration in changed plan			
Hall (0.3926) < courtyard=backyard (0.5888) < room1=room2 (1.3740) < street (1.5702) < wc (1.5702)		Corridor1 (0.5269) < living room (0.5579) < terrace1(0.6509) < corridor2 (0.7128) < backyard (0.7748) < kitchen (0.8058) < small space (0.8988) < car way=childroom1=parent room=child room2 (1.0228) < bedroom (1.0538) < balcony (1.0848) < street (1.1157) < garage (1.2707) < laundry (1.3327) < terrace2 (1.5806) < bath/wc (1.8286)			
Analysis:		Destroyed places / elements:		Added spaces / elements:	
Number of spaces:		7	WC	Te1, Te2	Number of spaces:
Total depth:		3	Garden wall	Bly, G	Total depth:
Mean depth:		2.33		Cd1, Cd2	Mean depth:
Total rings:		7		Cr1, Cr2	Total rings:
The Most Integrated:		H		Pr	The Most Integrated:
The Most Segregated:		WC		Ss, Ldr	The Most Segregated:
Average integration value:		1.0655		B/WC	Average integration value:
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

This rural-vernacular house example, which has an inner hall and is numbered seven, has a less branched transition graphic. The total number of spaces in this house, which has a typical example of an interior sofa, is 7, the maximum depth is 3, the maximum number of connections is 7, and the average depth value of all spaces is 2.33. The most integrated place in the whole house is the hall with a value of 0.3926, and the most segregated place is the toilet with a value of 1.5702. The order of integration within the spaces is as in Table 4.37 above. The average integration value for the house is 1.0655. The main difference factor value of the house was found to be 0.6900 (Table 4.45). There are wide openings both in front and behind the residence. The four sides of the building are closed with high walls and the courtyard is entered through a wide door from the street.

On the other hand, the plan transition graph with the changed interior sofa shows a less branched and linear transition graph. The total number of spaces belonging to the residence is 18. The maximum depth is 6, the maximum number of connections is 21, and the average depth of all spaces is 3.12. The number of space and space connections has increased. The most integrated place in the whole of the residence is the corridor1 space with a value of 0.5269. The most segregated place of the house is the bathroom and toilet area with a value of 1.8286. The average integration value throughout the residence is 1.0159. The main difference factor value of the residence was found to be 0.7159 (Table 4.46).

Table 4.39: The comparative analysis of the change in house no.8 UIH

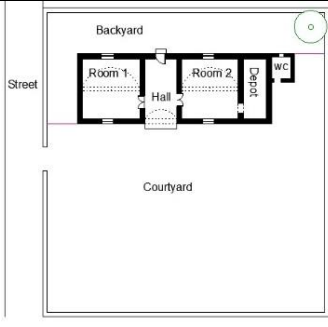
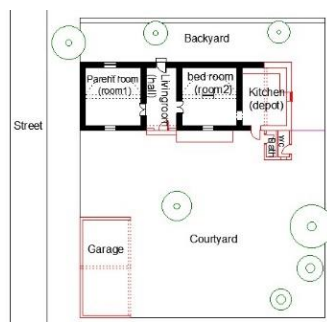
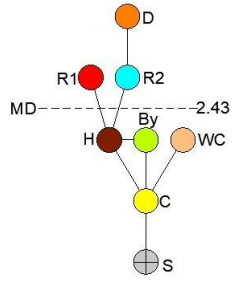
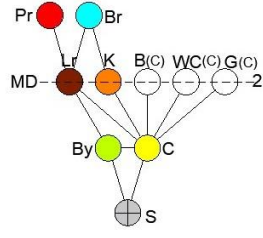
Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)			
B8-Original plan organization		B8-Changed plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Courtyard1 (0.5105) < courtyard2=hall (0.6382) < street=small area (1.0211) < terrace=wc=garden (1.1488) < room3=room4=room1=room2 (1.2764)		Kitchen (0.5948) < garage area (0.6373) < living room (0.8072) < hall (0.9772) < street=courtyard (1.0196) < small area=terrace3 (1.1896) < terrace1(1.2321) < child room=parent room (1.3595) < bathroom=wc (1.5295) < terrace2=garden (1.5720)	
Analysis:		Destroyed places/elements:	Added spaces / elements:
Number of spaces:	12	R3	T1
Total depth:	4	R4	T2
Mean depth:	2.42	WC	T3
Total rings:	12		K
The Most Integrated:	C1		WC
The Most Segregated:	R3=R4= R1=R2		B
Average integration value:	1.0318		H
Analysis:		Number of spaces:	15
		Total depth:	6
		Mean depth:	3.28
		Total rings:	15
		The Most Integrated:	K
		The Most Segregated:	Te2=Gn
		Average integration value:	1.1726
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

In the example of the eighth residence, the original plan and spatial transition graph have a less branched transition. The total number of spaces in the whole house is 12,

the maximum depth is 4, the maximum number of connections is 12 and the average integration value is 2.42. The most integrated place in the house is the courtyard with a value of 0.5105, and the most reserved places are room 3, room 4, room 1 and room 2 with a value of 1.2764. The general setup of the house is quite simple. In this residence, there are two ways to enter the courtyard from the street; first, from the street to the terrace, and from there to the courtyard with the entrance hall; the other is the courtyard door that opens from the street to the courtyard. The main entrance of the house opens directly to the street. Only the courtyard door on the side of the building was closed with high walls. Two rooms (Room 3, and Room 4) in the courtyard were used as auxiliary rooms. The toilet was located in a corner of the courtyard away from the residential area.

The spatial transition graph on the changed plan has a more linear transition graph than the original example. Compared to the original example, this plan shape is more compact. The total number of spaces in the whole house is 15, the maximum depth is 6, the maximum number of connections is 15 and the average integration value is 3.28. The most integrated place in the whole of the residence is the kitchen with a value of 0.5948, the most segregated place is the terrace² and the garden with a value of 1.5720. The newly added spaces to the building are a semi-open terrace in the front, the kitchen, bathroom and toilet spaces and the upper part are built in the form of a flat roof towards the back. This upper floor is accessed from the garage area and this space is used as a terrace. Rooms 3 and 4 seen in the original plan have been demolished and are used as garage spaces today. In addition, the high garden wall in the present garage area and the toilet area in the courtyard, which were separate from the building, have been removed. It is the example of a rural house that shows the least change among the rural-vernacular houses with inner sofas.

Table 4.40: The comparative analysis of the change in house no.9 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)			
B9-Original plan organization		B9-Changed plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Hall (0.5801) < courtyard (0.5801) < room2 (1.1601) < street (1.4501) < backyard=wc=room1 (1.4502) < depot (2.0302)		Courtyard (0.1818) < living room (0.4545) < backyard (0.5455) < kitchen (0.7273) < street (0.8182) < bath=wc=garage (0.9091) < bedroom (1.0000) < parent room (1.1818)	
Analysis:		Destroyed places / elements:	
Number of spaces: 8		WC	
Total depth: 4		D	
Mean depth: 2.43		B	
Total rings: 8		WC	
The Most Integrated: H			
The Most Segregated: D			
Average integration value: 1.2689			
Analysis:		Added spaces:	
Number of spaces: 10		K	
Total depth: 3		G	
Mean depth: 2		B	
Total rings: 12		WC	
The Most Integrated: C			
The Most Segregated: Pr			
Average integration value: 0.7636			
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

This example of rural-vernacular housing, numbered nine, has little branching and at the same time has a linear transition graph. The total number of spaces of this house, which has a typical example of an interior sofa, is 8, the maximum depth is 4, the maximum number of connections is 8, and the average depth value of all spaces is 2.43. The most integrated place in the whole house is the hall with a value of 0.5801, and the most segregated place is the warehouse with a value of 2.0302. The order of integration within the spaces is as in Table 4.39 above. The average integration value for the house is 1.2689. The main difference factor value of the house was found to be 0.7282 (Table 4.45). There are wide openings in the south-facing direction of the house. The four sides of the house are closed with high walls and the courtyard is entered through a door from the street.

Looking at the housing plan transition graph with the changed units with inner hall, the branching has a slightly increased transition graph. The total number of spaces belonging to the residence is 10. The maximum depth is 3, the maximum number of connections is 12, and the average depth of all spaces is 2. The number of spaces increased by only two and the number of space connections increased by four. The most integrated place in the whole house is the courtyard with a value of 0.1818. The most segregated place of the house is the parent space with a value of 1.1818. The average integration value for the house is 0.7636. The main difference factor value of the residence was found to be 0.5216 (Table 4.46).

Table 4.41: The comparative analysis of the change in house no.10 UIH

Type of rural-vernacular house: UNITS WITH INNER HALL (UIH)				N	
B10-Original plan organization		B10-Changed plan organization			
Justified graph of original plan		Justified graph of changed plan			
Order of integration in original plan		Order of integration in changed plan			
<p>Hall (0.5106) < courtyard (0.5744) < shop=room1=backyard (0.7020) terrace2 (0.7659) <terrace1 (0.9573) << street1=room2 (1.1488) < kitchen=wc (1.2126) < street2 (1.3403)</p>		<p>Living room (0.8346) < terrace2 (0.9105) < terrace3 (0.9864) < terrace2 (1.1002) < street1 (1.2519) < kitchen=bedroom1=courtyard (1.3657) < depot1 (1.4037) < bath/wc (1.4416) < depot3 (1.5175) < depot2 (1.7830) < street2 (1.8210) < wc (1.8969) < bedroom2=backyard (2.3142)</p>			
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	12	WC	Br	Number of spaces:	16
Total depth:	5		WC	Total depth:	5
Mean depth:	2.81		D	Mean depth:	3.2
Total rings:	15		T3	Total rings:	18
The Most Integrated:	H		D1	The Most Integrated:	Lr
The Most Segregated:	S2		D2	The Most Segregated:	Br2=By
Average integration value:	0.9289			Average integration value:	1.4796
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdresac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

This rural-vernacular housing sample numbered ten has a less branched transition graph. The total number of spaces of the house is 12, the maximum depth is 5, the maximum number of connections is 15, and the average depth value of all spaces is 2.81. The most integrated place in the whole house is the hall with a value of 0.5106, and the most segregated place is the street2 with a value of 1.3403. The order of integration within the spaces is as in Table 4.40 above. The average integration value throughout the residence is 0.9289. The main difference factor value of the house was found to be 0.8279 (Table 4.45). There are wide openings in the southwest-facing direction of the house. The three sides of the house are closed with walls and the courtyard is entered through a large door from the street.

The housing plan transition graph with the changed interior sofa has a linear transition graph of branching. The total number of spaces belonging to the residence is 16. The maximum depth is 5, the maximum number of connections is 18, and the average depth of all spaces is 3.2. The number of spaces increased by four spaces and the number of space connections increased by three. The most integrated place in the whole house is the living room with a value of 0.8346. The most heterogeneous space for the residence is the bedroom2 and the backyard space with a value of 2.3142. The average integration value for the house is 1.4796. The main difference factor value of the residence was found to be 0.8064 (Table 4.46).

4.3.2.1 Comparison of Original and Changed Houses in Terms of Order of Integration (UIH)

In the table below, spatial analyses of rural-vernacular house units with inner halls are given according to the calculated integration value ranking. In the tables (Table 4.42 and 4.43), the original plans of the rural house types with ten units with inner halls and

their changed situations are compared. It is known that the lowest value represents the most integrated spaces and the highest value represents the most heterogeneous spaces, and the order is from integrated (frequently used) to segregated (rarely used).

Table 4.42: Order of integration in original plan UIH

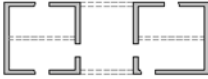

B1	 UNITS WITH INNER HALL (UIH)
1 st Group	1- Courtyard (0.3824) < hall (0.6373) < room1=balcony (0.7647) < street=room4 (0.8072) < depot=kitchen (0.9347) < backyard (1.1046) < room2 (1.1896) < terrace1=room5=room3 (1.2321) < wc (1.6569) < terrace2 (1.7844)
	2- Hall (0.5455) < curtyard1 (0.7273) < courtyard2 (0.9091) < room1(1.0909) < rom3=kitchen (1.2727) < garden=wc (1.4545) < street (2.1818)
	3- Courtyard (0.2403) < cul-de-sac=hall (0.5286) < kitchen (0.5766) < room1(0.6727) < cow barn=sheep selter (0.7208) < backyard (0.7688) < depot1=depot2 (0.8169) < street (1.0091) < hayloft (1.2974) < wc (1.3455)
	4- Courtyard (0.2200) < hall (0.4949) < backyard (0.5499) < depot2=balcony (0.7149) < kitchen=wc (0.8249) < sheep selter (1.0448) < rom1=room2 (1.0998) < room3 (1.3198)
2 nd Group	5- Courtyard (0.4509) < hall (0.5637) < room3 (1.0146) < wc=garden (1.2401) < street=room1=room2 (1.3528) < room4 (1.8038)
	6- Courtyard (0.2200) < hall (0.4399) < open space1 (0.6599) < room4=shop=parking area =wc=room3=open space2 (0.8249) < street1(0.8798) < street2 (0.9898) < room1=room2 (1.0448) < room1 (1.0448)
3 rd Group	7- Hall (0.3926) < courtyard=backyard (0.5888) < room1=room2 (1.3740) < street (1.5702) < wc (1.5702)
	8- Courtyard1 (0.5105) < courtyard2=hall (0.6382) < street= small area (1.0211) < terrace=wc=garden (1.1488) < room3=room4=room1=room2 (1.2764)
	9- Hall (0.5801) < courtyard (0.5801) < room2 (1.1601) < street (1.4501) < backyard=wc=room1 (1.4502) < depot (2.0302)
	10- Hall (0.5106) < courtyard (0.5744) < shop=room1=backyard (0.7020) terrace2 (0.7659) < terrace1 (0.9573) < street1=room2 (1.1488) < kitchen=wc (1.2126) < street2 (1.3403)

Table 4.43: Order of integration in changed plan UIH

B2	 UNITS WITH INNER HALL (UIH)
1 st Group	1- Terrace2 (0.5466) < courtyard (0.7174) < living room (0.7516) < parent room (0.8883) < balcony (0.9224) < kitchen (1.0591) < street=garage=laundry (1.1274) < depot2 (1.2299) < child room (1.2641) < bedroom (1.3666) < terrace2=depot1 (1.5374) < bath/wc=bacyard (1.6399) < terrace3 (1.8790)
	2- Living room1 < (0.5499) < terrace1 (0.7149) < terrace2 (0.8249) < bedroom (0.9348) < parking area=living room2 (1.0998) < child room (1.1548) < garden=bath=wc (1.4297) < kitchen (1.5397) < street=garage (1.7047)
	3- Courtyard=Hall1 (0.4932) < hall2 (0.5311) < cul-de-sac (0.6449) < backyard (0.6829) < living room (0.7587) < bedroom (0.8346) < garage1=garage2=new house area (1.0243) < parent room=wc=bath (1.0622) < depot=dog cage (1.2140) < kitchen (1.2899)
	4- Courtyard (0.3670) < canopy (0.5408) < livingroom1 (0.5795) < living room2 (0.6760) < kitchen (0.7147) < depot3=balcony (0.7533) < street=depot1=depot2=wc=doc cage1=dog cage2=dog cage3=garage= coop=(0.7919) < corridor (1.0237) < laundry=parentroom (1.1010) < depot4=bedroom (1.1783) < child room1=child room2 (1.4487) < bath/wc (1.5259)

2 nd Group	5- Living room2=new kitchen are (0.6791) < courtyard2 (0.7357) < courtyard1(0.8489) < street=living room1 (0.8772) < kitchen (0.9338) < dog gace1=dog cage2=depot2 (1.2168) < child room=laundry (1.3017) < garage=depot1=garden (1.3299) < bedroom (1.4148) < parent room=bath=wc (1.7827)
	6- Terrace1 (0.5977) < courtyard1 (0.7015) < living room1 (0.8054) < terrace2 (0.8574) < kitchen1=courtyard2 (1.1172) < street1=bath=wc (1.1692) < parking area (1.1699) < kitchen2 (1.2211) < living room2=bedroom (1.2731) < living room3 (1.3250) < street2=depot=bedroom2 (1.5849) < bedroom3=bath/wc (1.6888) < open space (2.0525)
3 rd Group	7- Corridor1 (0.5269) < living room (0.5579) < terrace1(0.6509) < corridor2 (0.7128) < backyard (0.7748) < kitchen (0.8058) < small space (0.8988) < car way=childroom1=parent room=child room2 (1.0228) < bedroom (1.0538) < balcony (1.0848) < street (1.1157) < garage (1.2707) < laundry (1.3327) < terrace2 (1.5806) < bath/wc (1.8286)
	8- Kitchen (0.5948) < garage area (0.6373) < living room (0.8072) < hall (0.9772) < street=courtyard (1.0196) < entrance area=terrace3 (1.1896) < terrace1(1.2321) < child room=parent room (1.3595) < bathroom=wc (1.5295) < terrace2=garden (1.5720)
	9- Courtyard (0.1818) < living room (0.4545) < backyard (0.5455) < kitchen (0.7273) < street (0.8182) < bath=wc=garage (0.9091) < bedroom (1.0000) < parent room (1.1818)
	10- Living room (0.8346) < terrace2 (0.9105) < terrace3 (0.9864) < terrace2 (1.1002) < street1 (1.2519) < kitchen=bedroom1=courtyard (1.3657) < depot1 (1.4037) < bath/wc (1.4416) < depot3 (1.5175) < depot2 (1.7830) < street2 (1.8210) < wc (1.8969) < bedroom2=backyard (2.3142)

In line with the integration values of the spaces identified in Tables 4.42 and Table 4.43 above, the most integrated, namely the distributor space, is the courtyard (6/10) and the interior sofa (4/10). The most segregated space is mostly the room (4/10). In the changed examples, the integrated space role of the sofa continues in the living spaces transformed from the interior sofa. Therefore, in addition to the courtyard as the most integrated space, terrace spaces, which are obtained by covering a part of the courtyard and which are living spaces, also emerged. It is seen that the room maintains its position as a separate space and the toilets are of the same value (Table 4.44).

Table 4.44: Comparison of original and changed houses in terms of integration values

House No:	Original housing examples B1		Changed housing examples B2	
	The Most Integrated	The Most Segregated	The Most Integrated	The Most Segregated
1	Courtyard	Terrace 2	Terrace 2	Terrace 3
2	Hall (interior sofa)	Street (backyard/WC)	Living room1	Street=Garage(kitchen)
3	Courtyard	WC	Courtyard=Hall	Kitchen
4	Courtyard	Room 3	Courtyard	Bath/WC
5	Courtyard	Room 4	Living room 2=Newkitchen	Parent room=Bath=WC

6	Courtyard	Room 1	Terrace 1	Open space (without wall)
7	Hall (interior sofa)	WC	Corridor 1	Bath/WC
8	Courtyard 1	Room 2	Kitchen	Terrace 2=Garden
9	Holl (interior sofa)	Depot	Courtyard	Parent room
10	Hall (interior sofa)	Street 2	Living room	Living room=Backyard
General	Courtyard 6/10 Hall (interior sofa) 4/10	Room 4/10 WC 2/10	Courtyard or terrace 5/10 Living room 3/10	Bath/WC, WC and bath 4/10 Parent room 2/10

4.3.2.2 Comparison of Original and Changed Houses in Terms of Basic Differentiation Factor Values (BDF)

The main Basic Differentiation Factor (BDF) of the houses ‘units with inner halls’ has been given in Table 4.45 and Table 4.46 below. First, the main basic differentiation factor (BDF) values were determined for each residence within the space of the original and changed plans, and then basic differentiation factor (BDF) values were compared within the space of sub-types, both in the original plans and changed plans of the houses.

Table 4.45: Basic differentiation factor values of original houses units with inner hall

B1-House no original plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UIH)	15	4	16	1.0310	0.3824	1.7844	0.6200
2- (UIH)	10	5	10	1.2364	0.5455	2.1818	0.6703
3- (UIH)	14	3	18	0.7757	0.2403	1.3455	0.5566
4- (UIH)	13	3	14	0.8122	0.2200	1.3198	0.5425
5- (UIH)	9	4	8	1.1524	0.4509	1.8038	0.6851
6- (UIH)	13	3	13	0.7868	0.2200	1.0448	0.6348
7- (UIH)	7	3	7	1.0655	0.3926	1.5702	0.6900
8- (UIH)	12	4	12	1.0318	0.5105	1.2764	0.8459
9- (UIH)	8	4	8	1.2689	0.5801	2.0302	0.7282
10- (UIH)	12	5	15	0.9289	0.5106	1.3403	0.8279

Average	11.3	3.8	-	1.0090	0.4053	1.5697	0.6801
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Table 4.46: Basic differentiation factor values of changed houses units with inner hall

B2-House no changed plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UIH)	17	5	18	1.1978	0.5466	1.8790	0.7369
2- (UIH)	13	5	14	1.2013	0.5499	1.7047	0.7776
3- (UIH)	16	4	18	0.8991	0.4932	1.2899	0.8303
4- (UIH)	24	5	24	0.8966	0.3670	1.5259	0.6624
5- (UIH)	19	5	20	1.1914	0.6791	1.7827	0.8266
6- (UIH)	20	5	21	1.2575	0.5977	2.0525	0.7319
7- (UIH)	18	6	21	1.0159	0.5269	1.8286	0.7157
8- (UIH)	15	6	15	1.1726	0.5948	1.5720	0.8296
9- (UIH)	10	3	12	0.7636	0.1818	1.1818	0.5216
10- (UIH)	16	5	18	1.4796	0.8346	2.3142	0.8064
Average	16.8	4.9	-	1.1076	0.5372	1.7131	0.7439

Among the examples of rural houses with inner sofas (Table 4.47, Table 4.48), the houses numbered 1, 2, 3 and 4 are the same type of houses. These examples of houses in the sub-type do not have the same number of spaces, but they are based on the land boundary of both sides of the houses in terms of their location in the plot.

Table 4.47: Basic differentiation values from the subtype's original plans UIH



B- Units with inner hall (1 st gr. original plans)	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
1- (UIH)	15	4	16	1.0310	0.3824	1.7844	0.6200
2- (UIH)	10	5	10	1.2364	0.5455	2.1818	0.6703
3- (UIH)	14	3	18	0.7757	0.2403	1.3455	0.5566
4- (UIH)	13	3	14	0.8122	0.2200	1.3198	0.5425
Average	13	3.75	14.5	0.9638	0.3471	1.6579	0.5974

Table 4.48: Basic differentiation values from the subtype's changed plans UIH

B- Units with inner hall (1 st gr. changed plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UIH)	17	5	18	1.1978	0.5466	1.8790	0.7369
2- (UIH)	13	5	14	1.2013	0.5499	1.7047	0.7776
3- (UIH)	16	4	18	0.8991	0.4932	1.2899	0.8303
4- (UIH)	24	5	24	0.8966	0.3670	1.5259	0.6624
Average	17.5	4.75	18.5	1.0487	0.4892	1.5999	0.7518

In the examples of rural-vernacular houses units with inner halls (Table 4.49, Table 4.50), the houses numbered 5 and 6 are the same type of houses. These examples, which have sub-type housing features, do not have the same number of spaces. The residences show the same characteristics only in terms of their location within the land.

In both examples, there is a plot border on both sides of the residence.

Table 4.49: Basic differentiation values from the subtype's original plans UIH



B- Units with inner hall (2 nd gr. original plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
5- (UIH)	9	4	8	1.1524	0.4509	1.8038	0.6851
6- (UIH)	13	3	13	0.7868	0.2200	1.0448	0.6348
Average	11	3.5	10.5	0.9696	0.3355	1.4243	0.6599

Table 4.50: Basic differentiation values from the subtype's changed plans UIH

B- Units with inner hall (2 nd gr. changed plans) 	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
5- (UIH)	19	5	20	1.1914	0.6791	1.7827	0.8266
6- (UIH)	20	5	21	1.2575	0.5977	2.0525	0.7319
Average	19.5	5	20.5	1.2245	0.6384	1.9176	0.7793

In the examples of rural-vernacular houses with inner sofas above, the houses numbered 7, 8, 9 and 10 are of the same type (Table 4.51, Table 4.52). These examples, which have sub-type housing features, do not have the same number of spaces. The

residences show the same characteristics only in terms of their location within the plot. In all four examples, the front and rear facades of the houses are open and adjacent to the land boundary on one side.

Table 4.51: Basic differentiation values from the subtype's original plans UIH



B- Units with inner hall (3 rd gr. original plans)	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
7- (UIH)	7	3	7	1.0655	0.3926	1.5702	0.6900
8- (UIH)	12	4	12	1.0318	0.5105	1.2764	0.8459
9- (UIH)	8	4	8	1.2689	0.5801	2.0302	0.7282
10- (UIH)	12	5	15	0.9289	0.5106	1.3403	0.8279
Average	9.75	4	10.5	1.0738	0.4985	1.5543	0.773

Table 4.52: Basic differentiation values from the subtype's changed plans UIH

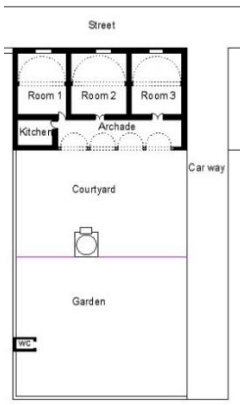
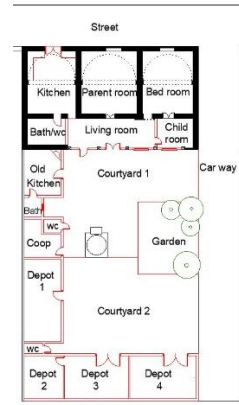
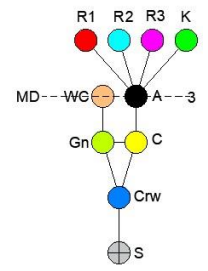
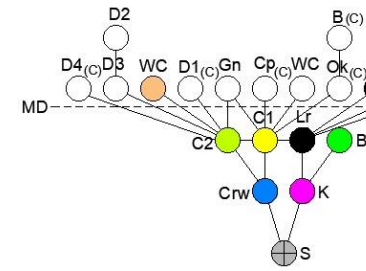
B- Units with inner hall (3 rd gr. changed plans)	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
7- (UIH)	18	6	21	1.0159	0.5269	1.8286	0.7157
8- (UIH)	15	6	15	1.1726	0.5948	1.5720	0.8296
9- (UIH)	10	3	12	0.7636	0.1818	1.1818	0.5216
10- (UIH)	16	5	18	1.4796	0.8346	2.3142	0.8064
Average	14.75	5	16.5	1.1079	0.5345	1.7242	0.7183

4.3.3 Comparison of Original and Changed Houses Units With Outer Hall - (UOH)

Within the scope of 10 “units with outer halls” rural-vernacular houses examined in Büyükkonuk village, 2 rural-vernacular users are Turkish Cypriot families living in Büyükkonuk village before 1974. The 3 rural-vernacular house users are the families who immigrated to Büyükkonuk village from Southern (Paphos / Baf village) Cyprus after 1974. 5 rural-vernacular home users are from families who immigrated from Adana (From, 4xMansurlu, and Süphandere villages), Turkey to Cyprus after 1975 and became Turkish Cypriot citizens (See Appendix D: Inventory charts for Units with Outer Hall UOH-3). Below is the comparative analysis of the change in all house plans (See Tables 4.53, 4.54, 4.55, 4.56, 4.57, 4.58, 4.59, 4.60, 4.61, 4.62).

As in all the other changed plans, all the new interventions, the addition of the new space, all open transition spaces, the changed door, window places, stairs and new garden walls were added on the plans and indicated with a red line on the new plan drawings. Comparison of original and changed houses in the housing spaces examined as a result of spatial transition graph analysis of all rural-vernacular housing samples, and it is seen that each rural-vernacular house presented different results in the spatial analyses covering both plans.

Table 4.53: The comparative analysis of the change in house no.1 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C1-Original plan organization			C1-Changed plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
Arcade=courtyard (0.5455) < car park=garden (0.9091) < room1=room2=room3=kitchen (1.2727) < street=wc (1.6364)			Courtyard2 (0.3637) < courtyard1 (0.4936) < living room1 (0.5456) < car park (0.5716) < garden (0.6755) < old kitchen (0.7794) < street=coop=wc (0.8314) < kitchen (0.8834) < depot3 (0.9093) < depot4=wc (0.9613) < child room=bedroom (0.9873) < parent room (1.0133) < bath (1.2471) < bath/wc (1.3510) < depot2 (1.3770)		
Analysis:		Destroyed places / elements:	Added spaces:	Analysis:	
Number of spaces:	10	WC	Lr	Number of spaces:	20
Total depth:	4		Cr	Total depth:	4
Mean depth:	3		Ok	Mean depth:	2.68
Total rings:	10		D1, D2, D3, D4	Total rings:	23
The Most Integrated:	A=C		B, WC	The Most Integrated:	C1
The Most Segregated:	S=WC		Cp	The Most Segregated:	D2
Average integration value:	1.1273		WC	Average integration value:	0.8782
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culsac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The house sample, which is number 1 within the units with outer hall rural-vernacular houses, has fewer branches and also has a linear transition graph. The total number of spaces of this house, which has a typical creeping example, is 10, the maximum depth is 4, the maximum number of connections is 10, and the average depth value of all spaces is 3. The most integrated space in the whole house is the arcade and courtyard spaces with a value of 0.5455. The most disjointed space belonging to the residence is the street and toilet space with a value of 1.6364. The order of integration within the spaces is as in Table 4.52 above. The average integration value for the house is 1.1273. The main difference factor value of the house was found to be 0.7867 (Table 4.66). There are wide openings in the south-facing direction of the house. The two sides of the house are built with high walls and the inner courtyard is entered from the side street.

The changed plan transition graph of the house with a stretch shows that it has a very branching transition graph. The total number of spaces belonging to the residence is 20. The maximum depth is 4, the maximum number of connections is 23, and the average depth of all spaces is 2.68. The number of spaces doubled, increasing the number of space connections. The most integrated place in the whole house is courtyard 2 with a value of 0.3637. The most segregated place of the house is warehouse 2, with a value of 1.3770. The average integration value throughout the residence is 0.8782. The main difference factor value of the residence was found to be 0.7041 (Table 4.67).


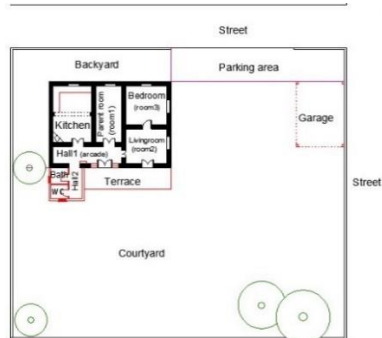
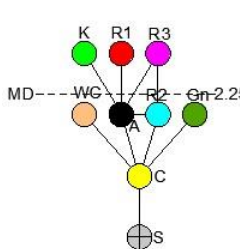
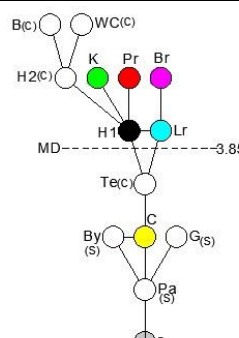
Table 4.54: The comparative analysis of the change in house no.2 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)			
C2-Original plan organization		C2-Changed plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
Arcade (0.4509) < courtyard (0.5637) < balcony (1.1274) < wc=room1=room2=room3 (1.2401) < street (1.3528) < room4 (1.9165)		Arcade (0.5637) < bedroom=kitchen (0.9019) < courtyard=bath/wc (1.1274) < livingroom (1.2401) < street=depot (1.9165) < parent room (2.0293)	
Analysis:		Destroyed places / elements:	Analysis:
Number of spaces:	9	R4	K
Total depth:	3	Bly	B/WC
Mean depth:	2.5		
Total rings:	8		
The Most Integrated:	A		
The Most Segregated:	R4		
Average integration value:	1.1524		
Legend:			
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>			

When the original plan of this two-floor rural-vernacular house is examined, it is seen that it has a less branched transition graphic. The total number of spaces for the residence is 9, the maximum depth is 3, and the average integration is 2.5. The most integrated space in the whole house is the arcade (porch), which is the arched area with a value of 0.4509. The most segregated place is room 4 with a value of 1.9165. Since room 4 is located on the upper floor, it is seen as the most reserved place in the entire residence. Although the residence has a small courtyard; the fact that the courtyard is the most integrated space shows the importance of using this area. The residence, which is surrounded by a road on four sides, is surrounded by high walls on both sides of the street. Unlike the original examples of other rural housing plans, the WC was not kept separate from the building.

In the example of the changed plan, the spatial transition graph has a linear rather than a branched transition graph. The total number of spaces belonging to the residence is 9, the average integration value is 3.13. The most integrated space in the whole house is the porch with a value of 0.5637 and the most segregated space is the master bedroom with a value of 2.0292. The user has completely removed room 4 on the upper floor. In this house with three arches, in addition to the semi-open area on the right side of the porch section, another arch was closed and the kitchen area was built. The bathroom and toilet space were created on the left side of the arch part, which is half-closed on one side. The water tank and the stone bread oven in the courtyard were demolished by their new users.

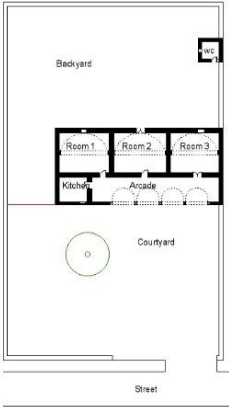

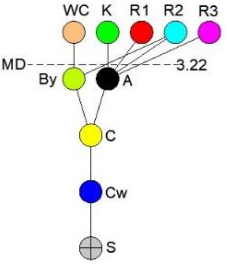
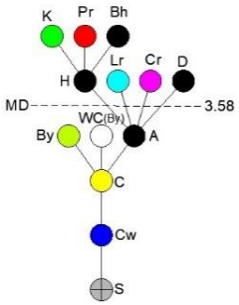
Table 4.55: The comparative analysis of the change in house no.3 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)			
C3-Original plan organization		C3-Changed plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Arcade=courtyard (0.3382) < room2 (0.5637) < room3 (1.0146) < street=wc=Garden=kitchen=room1 (1.1274)		Terrace=hall1 (0.6727) < courtyard=livingroom (0.8649) < hall2 (1.0572) < car parking (1.2013) < kitchen=parentroom (1.2494) < backyard (1.2974) < bedroom (1.4416) < bath=wc (1.6338) < street=garage (1.7779)	
Analysis:		Destroyed places / elements:	
Number of spaces:	9	WC	
Total depth:	3		
Mean depth:	2.25		
Total rings:	10		
The Most Integrated:	A		
The Most Segregated:	S=WC=K=Gn=R1		
Average integration value:	0.8768		
Added spaces / elements:		Analysis:	
		T	Number of spaces:
		H	Total depth:
		B	Mean depth:
		WC	Total rings:
			The Most Integrated:
			The Most Segregated:
			Average integration value:
			14
			6
			3.85
			15
			Te=H1
			S=G
			1.2425
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdесac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

This house sample, which is number 3 within the units with outer hall rural-vernacular houses, has a less branched transition graph. The total number of spaces belonging to the house is 9, the maximum depth is 3, the maximum number of connections is 10, and the average depth value of all spaces is 2.25. The most integrated space in the whole house is the arcade and courtyard spaces with a value of 0.3382. The most segregated space belonging to the residence is the street, toilet, garden, kitchen and room1 spaces with a value of 1.1274. The order of integration within the spaces is as in Table 4.54 above. The average integration value for the house is 0.8768. The main difference factor value of the house was found to be 0.7549 (Table 4.66). There are wide openings in the south-facing direction of the house. The four sides of the courtyard are covered with walls.

The changed plan transition graph of this overhanging house has a more linear transition graph than branching. The total number of spaces belonging to the residence is 14. The maximum depth is 6, the maximum number of connections is 15, and the average depth of all spaces is 3.85. There is an increase in the number of spaces and the number of space connections has increased. The most integrated space in the whole of the residence is the terrace and hall1 with a value of 0.6727. The most segregated place of the house is the street and the garage, with a value of 1.7779. The average integration value throughout the residence is 1.2425. The main difference factor value of the residence was found to be 0.8276 (Table 4.67).

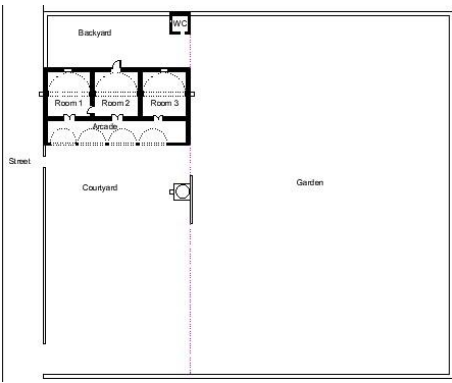
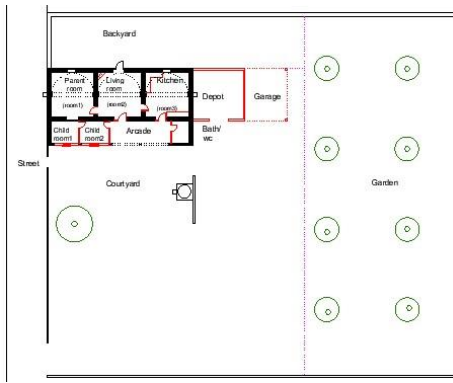
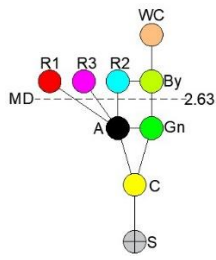
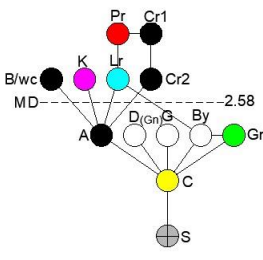
Table 4.56: The comparative analysis of the change in house no.4 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C4-Original plan organization			C4-Changed plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
Arcade=courtyard (0.5455) < backyard=room2 (0.9091) < Car way (1.0909) < kitchen=room1=room3 (1.2727) < wc (1.6364) < street (1.8182)			Arcade (0.4399) < courtyard (0.6049) < hall (0.7149) < livingroom (0.9348) < child room=depot (1.0448) < Car way=backyard (1.0998) < wc (1.2098) < kitchen=parent room=bath (1.3198) < street (1.7047)		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	10	WC	D	Number of spaces:	13
Total depth:	4		B	Total depth:	5
Mean depth:	3.22		H	Mean depth:	3.58
Total rings:	10		WC	Total rings:	13
The Most Integrated:	A=C			The Most Integrated:	A
The Most Segregated:	S			The Most Segregated:	S
Average integration value:	1.1273			Average integration value:	1.0660
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The spatial transition graph seen in this original rural housing example shows a linear and branched transition graph. The total number of spaces of the house, which has a four-arched porch, is 10, the maximum depth is 4, and the average number of integration spaces is 3.22. The most integrated space in the whole of the residence is the arched space with a value of 0.5455, and the most segregated space is the street area with a value of 1.8182. The residence is separated from the street by a large courtyard. It is also separated from the street by high walls. Looking at the location of the house on the plot, it is seen that it is in the middle and resting on the right garden wall. Thus, the forecourt and the backyard are equally located in front and behind the building. The doors of all rooms open to the porch section. The existing kitchen is located in the left corner of the space, following the porch space. Separated from the building, a toilet was built in a corner of the backyard.

Its changed plan shows that it has a more branched transition graph than the original plan. The total number of spaces belonging to the house is 13, the total number of newly added indoor spaces is 3, the maximum depth is 4, and the average integration value is 3.58. Likewise, the average integration value increased to 3 in the original plan sample. The most integrated space in the whole is the porch with a value of 0.4399, and the most reserved space is the street with a value of 1.7047. 3 new spaces have been added to the building. The bathroom and WC were built on the left side of the half-open porch.

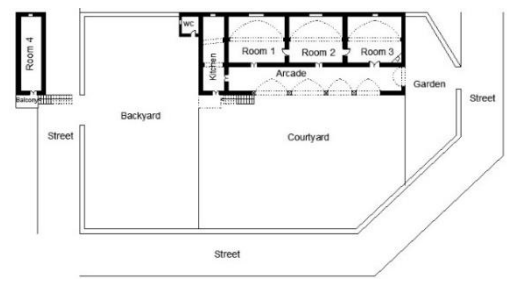
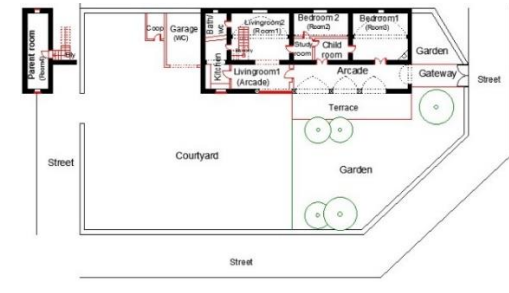
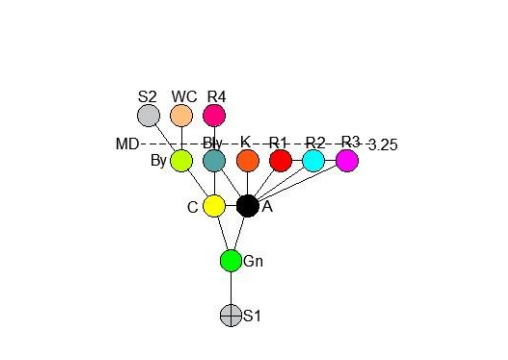
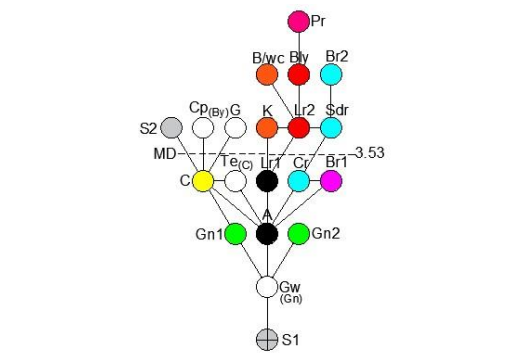
Table 4.57: The comparative analysis of the change in house no.5 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C5-Original plan organization			C5-Changed plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
Arcade (0.5637) < courtyard (0.6764) < room2 (0.7892) < garden=backyard (0.9019) < room1=room3 (1.3528) < street (1.4656) < WC (1.6911)			Arcade (0.3849) < courtyard (0.4399) < livingroom=child room2 (0.8249) < backyard=garden=bath/wc=kitchen (0.9898) < street=dept=garage (1.0448) < parent room=child room1 (1.2648)		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	9	WC	Cr1	Number of spaces:	13
Total depth:	4		Cr2	Total depth:	4
Mean depth:	2.63		B/WC	Mean depth:	2.58
Total rings:	9		D	Total rings:	15
The Most Integrated:	A		G	The Most Integrated:	A
The Most Segregated:	WC			The Most Segregated:	Pr=Cr1
Average integration value:	1.0773			Average integration value:	0.9306
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2,. A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culsesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

In the original plan, the transition graph has a less branched layout. The total number of spaces for the residence is 9, the maximum depth is 4, and the average integration value is 3. The most integrated place in the whole house is the courtyard with a value of 0.5800 and the most segregated place is the toilet with a value of 2.17052. This example of rural housing, which is owned by a Turkish Cypriot family since before 1974, is built in a very large area. The residence is separated from the street by high walls. The general setup of the residence has a very simple and useful layout. The doors of all rooms open to the hall called the porch. This section is in a position to contain both circulation and daily life actions. The toilet is located in the back garden separated from the building.

According to the changed plan, it has a highly branched transition graph. In this rural housing example, which has changed with the addition of new spaces, the total number of spaces is 13, the maximum depth is 4, and the average integration value is 2.58. The most integrated space in the residence is the porch with a value of 0.3849, and the most segregated space is the parent room and child room1 with a value of 1.2648. All of the high courtyard walls separating the house from the street were demolished and a new brick wall was built instead. The number of newly added spaces to the residence is 5. Due to the large number of the family, a part of the porch, which was in the semi-open position, was closed and two bedrooms were made. In addition, a section on the right of the porch is closed for the bathroom and toilet. In this rural residence, which has a large courtyard, the courtyard space is divided into two and a large fig garden is formed on the east-facing side.

Table 4.58: The comparative analysis of the change in house no.6 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C6-Original ground and upper floor plan organization			C6-Changed ground and upper floor plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
<p>Arcade (0.3849) < courtyard (0.4399) < garden=balcony (0.6599) < backyard (0.8249) < room2 (0.8798) < room1=room3 (0.9348) < kitchen (0.9898) < street1=room4 (1.2648) < street2=wc (1.4297)</p>			<p>Arcade (0.4677) < livingroom1 (0.6235) < courtyard (0.7015) < child room (0.7275) < gateway=livingroom2 (0.7794) < terrace (0.8054) < study room (0.8574) < bedroom1=kitchen (0.9353) < garden1 (1.0133) < street2=coop=garage (1.1692) < balcony (1.1951) < street1=garden2=bath/wc (1.2471) < bedroom2 (1.3250) < parent room (1.6628)</p>		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	13			WC	G
Total depth:	4		Cp	Total depth:	6
Mean depth:	3.25		Te	Mean depth:	3.53
Total rings:	16			Total rings:	24
The Most Integrated:	A			The Most Integrated:	A
The Most Segregated:	S=WC			The Most Segregated:	Pr
Average integration value:	0.9306			Average integration value:	1.0029
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Sdr: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

The original plan of this unit with outer halls of rural-vernacular residence has a branched transition graph. The total number of spaces belonging to the house is 13, the maximum depth is 4, the maximum number of space connections is 16, and the average depth value of all spaces is 3.25. The most integrated space in the whole house is the arcade space with a value of 0.3849. The most segregated space belonging to the residence is the street² and toilet spaces with a value of 1.4297. The order of integration within the spaces is as in Table 4.57 above. The average integration value for the house is 0.9306. The main difference factor value of the house was found to be 0.7125 (Table 4.66). There are wide openings on the south and west-facing sides of the house. The courtyard is surrounded by high walls.

The changed plan transition graph of this overhanging house is branched and linear. The total number of spaces belonging to the residence is 20. The maximum depth is 6, the maximum number of space connections is 24, and the average depth of all spaces is 3.53. The number of space and the number of space connections has increased. The most integrated space in the whole house is the arcade space with a value of 0.4677. The most segregated place of the house is the parent room with a value of 1.6628. The average integration value throughout the residence is 1.0027. The main difference factor value of the residence was found to be 0.7194 (Table 4.67).

Table 4.59: The comparative analysis of the change in house no.7 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C7-Original plan organization			C7-Changed plan organization		
Justified graph of original plan			Justified graph of changed plan		
Order of integration in original plan			Order of integration in changed plan		
Courtyard (0.4521) < arcade (0.5275) < backyard (0.7536) < room2 (0.8289) < kitchen=room3 (0.9796) < street (1.1304) < room1=room4 (1.2057) < wc (1.4318) < depot (1.6578)			Livingroom (0.6599) < terrace1=kitchen (0.8249) < child room (0.8798) < parent room=terrace2 (1.0448) < courtyard=depot1 (1.3198) < bath/wc (1.4298) < wc=backyard (1.6497) < street=depot2 (1.9247)		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	11	Room(R4)	B/wc	Number of spaces:	13
Total depth:	3	1 Arch	WC	Total depth:	6
Mean depth:	2.5		T1	Mean depth:	3.92
Total rings:	12		T2	Total rings:	15
The Most Integrated:	C			The Most Integrated:	Lr
The Most Segregated:	D			The Most Segregated:	S=D2
Average integration value:	1.0139			Average integration value:	1.2690
Legend:					
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage					

The original plan example has a branched spatial transition graph. The total number of spaces belonging to the residence is 11, the maximum depth is 3, the maximum number of space connections is 12 and the average integration value is 2.5. The most integrated place in the whole of the residence is the courtyard with a value of 0.4521 and the most segregated place is the depot with a value of 1.6578. The general setup of the residence has a more complex structure compared to other original examples with porches. The house is quite large and surrounded by high walls on all four sides.

The spatial transition graph in the changed plan example shows a less branched transition graph than the original plan. The total number of spaces is 13, the maximum depth is 6, the maximum number of space connections is 15 and the average integration value is 3.92. The most integrated space in the whole of the residence is the living room with a value of 0.6599, and the most segregated space is the street and depot 2 with a value of 1.9247. In the other examples of houses with porches, whether in the original plan or in the change plan, the most integrated space is the porch. The reason for the most integrated living room in the altered plan of this porch example is due to the fact that the porch part is completely closed and used as a seating area. The number of new spaces included in the residence is 2. One arch of the residence, out of three, was destroyed.

When the values of the housing examples units with outer hall are compared, it is house example number 7 that changed the most (Table 4.59). The difference of 0.0826 between the two BDF values is quite small compared to the differences between the original and changed BDF values of the other two typologies (unit without hall: 0.4377 and unit with inner hall: 0.2737). Therefore, it can be said that the typology that has undergone the least change or resisted the most change is the units without hall housing

typology. As can be seen in Table 4.58, the outer hall space T24 is transformed from a semi-open space into a completely different closed space with a different character, type NT2. The outer hall, which had the most spatial connection in the original plan, also had taken on the role of a distributive space. The living room, which is the most integrated space in the changing example, is the changed version of the outer hall. On the other hand, one of the 2 rooms (room 4) was completely demolished and the other (room 1), T17 space type in the original state, was transformed into T7 and became a kitchen space. Alternative paths of reaching the space and connections have been formed with the transformation of the original space type T17 (room 1) into a T7 type space, that had alternative access points and no connection in the original plan. The original space type T18, which has an outer hall connection was turned into T7 and became a children's room. The T6 space type, which was used as a storage area in the original dwelling, has been preserved in spatial and functional features. Likewise, the kitchen, which was a T5 space type in the original dwelling, was preserved as a space type but changed in function and became storage. In the changed example, in the order of integration value, it is seen that the distributive and integrated spaces increase; in a hierarchical order, gaining more and more privacy; in this way, it has been revealed that segregated spaces are further separated and privacy is strengthened.

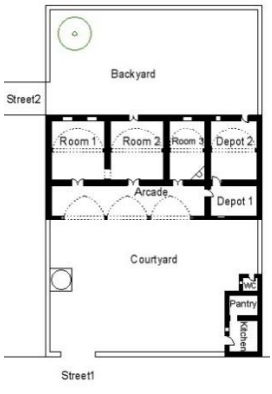
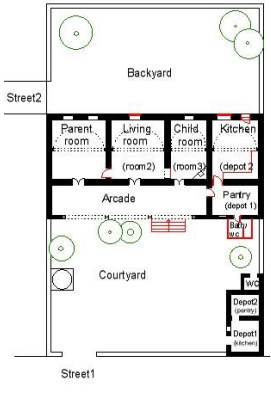
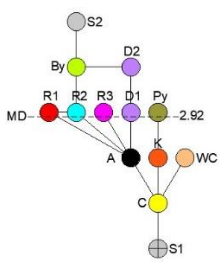
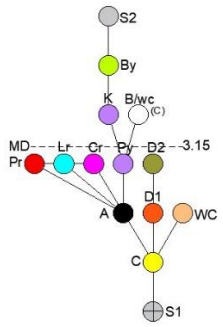
Table 4.60: The comparative analysis of the change in house no.8 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)			
C8-Original ground and upper floor plan organization		C8-Changed ground and upper floor plan organization	
Justified graph of original plan		Justified graph of changed plan	
Order of integration in original plan		Order of integration in changed plan	
Arcade (0.4468) < courtyard (0.7020) < room2 (0.8297) < kitchen=room1=room3=room4 (1.0850) < balcony (1.2126) < street=bacyard (1.3403) < room5 (1.8508) < wc (1.9785)		Courtyard (0.3794) < terrace (0.4173) < arcade (0.6449) < small area (0.7587) < balcony (0.8346) < street=garden=parent room=livingroom (0.9105) < kitchen=bath/wc=garage=depot (0.9484) < backyard (1.2140) < chil room (1.3657) < wc (1.7451)	
Analysis:		Analysis:	
Destroyed places / elements:		Added spaces / elements:	
Number of spaces:	12	T	Number of spaces:
Total depth:	5	B/WC	Total depth:
Mean depth:	2.91	Bly	Mean depth:
Total rings:	11		Total rings:
The Most Integrated:	A		The Most Integrated:
The Most Segregated:	WC		The Most Segregated:
Average integration value:	1.1701		Average integration value:
			0.9247
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5... , Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace, T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdresac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

The original plan of this units with outer hall rural-vernacular residence has a branched transition graphic. The total number of spaces belonging to the house is 12, the maximum depth is 5, the maximum number of space connections is 11, and the average depth value of all spaces is 2.91. The most integrated space in the whole house is the arcade space with a value of 0.4468. The most segregated place of the house is the toilet area with a value of 1.9785. The order of integration within the spaces is as in Table 4.59 above. The average integration value for the house is 1.1701. The main difference factor value of the house was found to be 0.6414 (Table 4.66). There are wide openings in the south-facing direction of the house. The courtyard is surrounded by walls at eye level.

The changed plan transition graph of this penthouse has a branched transition graph. The total number of spaces belonging to the residence is 16. The maximum depth is 4, the maximum number of space connections is 16, and the average depth of all spaces is 2.6. The number of spaces and the number of space connections have increased. The most integrated place in the whole house is the courtyard with a value of 0.3794. The most segregated place of the house is the toilet area with a value of 1.7451. The average integration value throughout the residence is 0.9247. The main difference factor value of the residence was found to be 0.6101 (Table 4.67).

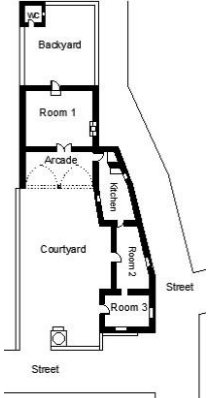
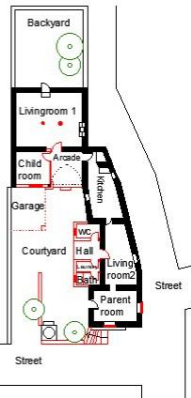
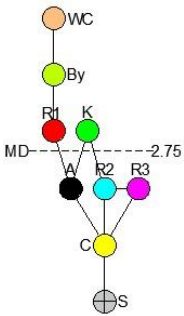
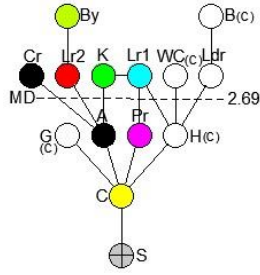
Table 4.61: The comparative analysis of the change in house no.9 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)			
C9-Original plan organization		C9-Changed plan organization	
			
Justified graph of original plan		Justified graph of changed plan	
			
Order of integration in original plan		Order of integration in changed plan	
Arcade (0.4949) < courtyard (0.6599) < room2 (0.7699) < depot1 (0.8798) < room1 (0.9348) < room3=backyard (1.0998) < kitchen (1.1548) < depot2 (1.2098) < street1=wc (1.2648) < street2 (1.7047) < pantry (1.7597)		Arcade (0.5766) < courtyard=pantry (0.7688) < parent room=livingroom=child room (1.0572) < kitchen (1.1533) < depot1 (1.2494) < street1=wc=bath/wc (1.3455) < backyard (1.6338) < depot2 (1.8260) < street2 (2.2104)	
Analysis:		Destroyed places / elements:	
Number of spaces:	13	B/WC	
Total depth:	5	Stairs	
Mean depth:	2.92	Number of spaces:	
Total rings:	14	Total depth:	
The Most Integrated:	A	Mean depth:	
The Most Segregated:	Py	Total rings:	
Average integration value:	1.0998	The Most Integrated:	
		The Most Segregated:	
		Average integration value:	
Legend:			
S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage			

In the original plan of this example, it can be seen that it has a branched transition graph. The total number of spaces belonging to the residence is 13, the maximum depth is 5, the maximum number of space connections is 14 and the average integration value is 2.92. The most integrated place in the whole house is the arcade with a value of 0.4949, and the most segregated place is the cellar with a value of 1.7597. In this rural house example, the courtyard is divided into two parts: the forecourt and the backyard. The house is separated from the street by a large courtyard. In this original rural residence example, the kitchen and toilet are located in a separate courtyard from the building. The side of the house facing the road is enclosed by a high wall.

In this changed rural-vernacular housing example, the plan shows a more branched transition graph than the original plan. The total number of spaces included in the residence is 14, the maximum depth is 6, the maximum number of space connections is 15 and the average integration value is 3.15. The number of newly added spaces to the residence is only one space, the bathroom and toilet area. The most integrated space in the whole house is the porch with a value of 0.5766, and the most segregated space is the street² space with a value of 2.2104. Rather than adding new spaces to this rural residence, the renovation process and space relations are at the forefront. A staircase was built to reach the arched section or in other words the porch area. The kitchen section, which was present in the original housing example, has not been demolished and is currently used as a storage area.

Table 4.62: The comparative analysis of the change in house no.10 UOH

Type of rural-vernacular house: UNITS WITH OUTER HALL (UOH)				N	
C10-Original plan organization			C10-Changed plan organization		
					
Justified graph of original plan			Justified graph of changed plan		
					
Order of integration in original plan			Order of integration in changed plan		
<p>Arcade (0.6764) < courtyard (0.7892) < room1 (1.0146) < kitchen (1.1274) < room4 (1.2401) < room3 (1.3528) < street=backyard (1.5783) < wc (2.3675)</p>			<p>Courtyard (0.4805) < arcade=hall (0.6247) < livingroom2 (0.8169) < kitchen (0.8649) < parent room (0.9130) < street=garage (1.0572) < livingroom=laundry (1.1052) < childroom=wc (1.2013) < backyard=bath (1.6818)</p>		
Analysis:		Destroyed places / elements:	Added spaces / elements:	Analysis:	
Number of spaces:	9			Cr	Number of spaces:
Total depth:	5	WC	G	Total depth:	4
Mean depth:	2.75		WC	Mean depth:	2.69
Total rings:	10		H	Total rings:	15
The Most Integrated:	A		Ldr	The Most Integrated:	C
The Most Segregated:	WC		B	The Most Segregated:	By=B
Average integration value:	1.3027		Stairs	Average integration value:	1.0297
Legend:					
<p>S: Street, S1,S2: Street1,2., C: Courtyard, C1, C2., A: Arcade (Sundurma), R: Room, R1, R2, R3, R4, R5..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Py: Pantry, Cd: Corridor, Cd1, Cd2, H: Hall, Str: Study room, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, Ok: Old Kitchen, O/wc: Old wc, Sh: Storehouse, D: Depot, Ldr: Laundry, Te: Terrace,T1, T2, T3., Bly: Balcony, Cy: Canopy, Nka: New kitchen area, Nha: New house area, Sp: Shop, Op: Open space, Oh: Open hall, G: Garage, G1, G2, Pa: Parking area, Ss: Service space, Crw: Car way, Gw: Gateway, Cs: Culdesac, Sc: Staircase, Sa: Small area, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Cb: Cow barn, Ht: Hayloft, Dc: Dog cage</p>					

The original plan of this rural-vernacular residence “units with outer hall” example, namely house 10, has a less branched and linear transition graph. The total number of spaces belonging to the house is 9, the maximum depth is 5, the maximum number of space connections is 10, and the average depth value of all spaces is 2.75. The most integrated space in the whole house is the arcade space with a value of 0.6764. The most segregated place of the house is the toilet area with a value of 2.3675. The order of integration within the spaces is as in Table 4.61 above. The average integration value throughout the residence is 1.3027. The main difference factor value of the house was found to be 0.7112 (Table 4.66). The courtyard is surrounded by walls at eye level.

Examining the changed plan transition graph of this unit with the outer hall example shows it has a branched transition graph. The total number of spaces belonging to the residence is 14. The maximum depth is 4, the maximum number of spaces connections is 15, and the average depth of all spaces is 2.69. The number of space and the number of space connections have increased. The most integrated place in the whole house is the courtyard with a value of 0.4805. The most segregated place of the house is the backyard and the bathroom, with a value of 1.6818. The average integration value throughout the residence is 1.0297. The main difference factor value of the residence was found to be 0.7263 (Table 4.67).

4.3.3.1 Comparison of Original and Changed Houses in Terms of Order of Integration

In the table below, spatial analyses of the lofted rural-vernacular houses are made according to the calculated integration value ranking. Table 4.63 and Table 4.64 show the original plans of ten basic porous rural housing types and their changed states are compared. It is known that the lowest value represents the most integrated spaces and

the highest value represents the most heterogeneous spaces, and the order is from integrated (frequently used) to heterogeneous (rarely used).

Table 4.63: Order of integration in original plan UOH

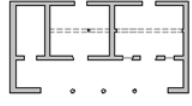

C1		UNITS WITH OUTER HALL (UOH)
1st Group	1-Arcade=courtyard (0.5455) < car park=garden (0.9091) < room1=room2=room3=kitchen (1.2727) < street=wc (1.6364)	
	2-Arcade (0.4509) < courtyard (0.5637) < balcony (1.1274) < wc=room1=room2=room3 (1.2401) < street (1.3528) < room4 (1.9165)	
	3-Arcade=courtyard (0.3382) < room2 (0.5637) < room3 (1.0146) < street=wc=bacyard=kitchen=room1 (1.1274)	
2nd Group	4-Arcade=courtyard (0.5455) < backyard=room2 (0.9091) < gateway (1.0909) < kitchen=room1=room3 (1.2727) < wc (1.6364) < street (1.8182)	
	5-Arcade (0.5637) < courtyard (0.6764) < room2 (0.7892) < garden=backyard (0.9019) < room1=room3 (1.3528) < street (1.4656) < wc (1.6911)	
	6-Arcade (0.3849) < courtyard (0.4399) < garden=balcony (0.6599) < backyard (0.8249) < room2 (0.8798) < room1=room3 (0.9348) < kitchen (0.9898) < street1=room4 (1.2648) < street2=wc (1.4297)	
	7-Courtyard (0.4521) < arcade (0.5275) < backyard (0.7536) < room2 (0.8289) < kitchen=room3 (0.9796) < street (1.1304) < room1=room4 (1.2057) < wc (1.4318) < depot (1.6578)	
3rd Group	8-Arcade (0.4468) < courtyard (0.7020) < room2 (0.8297) < kitchen=room1=room3=room4 (1.0850) < balcony (1.2126) < street=bacyard (1.3403) < room5 (1.8508) < wc (1.9785)	
	9-Arcade (0.4949) < courtyard (0.6599) < room2 (0.7699) < depot1 (0.8798) < room1 (0.9348) < room3(1.0998) < backyard (1.0998) < kitchen (1.1548) < depot2 (1.2098) < street1=wc (1.2648) < street2 (1.7047) < pantry (1.7597)	
	10-Arcade (0.6764) < courtyard (0.7892) < room1 (1.0146) < kitchen (1.1274) < room4 (1.2401) < room3 (1.3528) < street=backyard (1.5783) < wc (2.3675)	

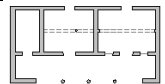
Table 4.64: Order of integration in changed plan UOH

C2		UNITS WITH OUTER HALL (UOH)
1st Group	1-Courtyard2 (0.3637) < courtyard1 (0.4936) < living room1 (0.5456) < car park (0.5716) < garden (0.6755) < old kitchen (0.7794) < street=coop=wc (0.8314) < kitchen (0.8834) < depot3 (0.9093) < depot4=wc (0.9613) < child room=bedroom (0.9873) < parent room (1.0133) < bath (1.2471) < bath/wc (1.3510) < depot2 (1.3770)	
	2-Arcade (0.5637) < bedroom=kitchen (0.9019) < courtyard=bath/wc (1.1274) < livingroom (1.2401) < street=depot (1.9165) < parent room (2.0293)	
	3-Terrace=hall1 (0.6727) < courtyard=livingroom (0.8649) < hall2 (1.0572) < car parking (1.2013) < kitchen=parentroom (1.2494) < backyard (1.2974) < bedroom (1.4416) < bath=wc (1.6338) < street=garage (1.7779)	
2nd Group	4-Arcade (0.4399) < courtyard (0.6049) < hall (0.7149) < livingroom (0.9348) < child room=depot (1.0448) < entrance area=backyard (1.0998) < wc (1.2098) < kitchen=parent room=bath (1.3198) < street (1.7047)	
	5-Arcade (0.3849) < courtyard (0.4399) < livingroom=child room2 (0.8249) < backyard=garden=bath/wc=kitchen (0.9898) < street=dept=garage (1.0448) < parent room=child room1 (1.2648)	
	6-Arcade (0.4677) < livingroom1 (0.6235) < courtyard (0.7015) < child room (0.7275) < entrance area=livingroom2 (0.7794) < terrace (0.8054) < study room (0.8574) <	

	bedroom1=kitchen (0.9353) < garden1 (1.0133) < streer2=coop=garaqe (1.1692) < balcony (1.1951) < street1=garden2=bath/wc (1.2471) < bedroom2 (1.3250) < parent room (1.6628)
	7- Livingroom (0.6599) < terrace1=kitchen (0.8249) < child room (0.8798) < parent room=terrace2 (1.0448) < courtyard=depot1 (1.3198) < bath/wc (1.4298) < wc=backyard (1.6497) < street=depot2 (1.9247)
3rd Group	8- Courtyard (0.3794) < terrace (0.4173) < arcade (0.6449) < small area (0.7587) < balcony (0.8346) < street=garden=parent room=livingroom (0.9105) < kitchen=bath/wc=garaqe=depot (0.9484) < backyard (1.2140) < chil room (1.3657) < wc (1.7451)
	9- Arcade (0.5766) < courtyard=pantry (0.7688) < parent room=livingroom=child room (1.0572) < kitchen (1.1533) < depot1 (1.2494) < street1=wc=bath/wc (1.3455) < backyard (1.6338) < depot2 (1.8260) < street2 (2.2104)
	10- Courtyard (0.4805) < arcade=hall (0.6247) < livingroom2 (0.8169) < kitchen (0.8649) < parent room (0.9130) < street=garaqe (1.0572) < livingroom=laundry (1.1052) < childroom=wc (1.2013) < backyard=bath (1.6818)

As can be seen in Table 4.65 below, in the original examples of units with outer hall, the most integrated space is the arcade (Südüürme) (9/10) and the most segregated space is the toilet (7/10). Semi-open space arcade (südüürme) has undertaken the task of distributing space in 9 residences. In this type, the arcade (Südüürme) space is more integrated than the courtyard space because the number of spatial connections in the arcade area is greater than in the courtyard. In addition, the arcade is the transition space between the courtyard and the closed spaces. In changed examples, the most integrated space is the arcade (Südüürme) which preserves its semi-open space feature and is turned into a hall or living room after being closed in a few examples (7/10). The most segregated space is the parent's room 4/10. The arcade (Südüürme) space continued its feature as a meeting-dispersal space where daily activities take place.

Table 4.65: Comparison of original and changed houses in terms of integration values

C1+C2	 SAMPLES OF UNITS WITH OUTER HALL (UOH)			
	House No:	Original housing examples C1		Changed housing examples C2
	The Most Integrated	The Most Segregated	The Most Integrated	The Most Segregated
1	Arcade=Courtyard	Street=WC	Courtyard	Depot 2
2	Arcade	Room 4	Arcade	Parent room
3	Arcade=Courtyard	Street=WC=Backyard=Kitchen=Room 1	Terrace=Hall 1 (Arcade)	Street=Garaqe (bath/WC)
4	Arcade=Courtyard	Street (WC)	Arcade	Street (kitchen/parent room/ bath)

5	Arcade	WC	Arcade	Parent room=Child room 1
6	Arcade	Street 2= WC	Arcade	Parent room
7	Courtyard	Depot	Living room (Arcade)	Street=Depot 2
8	Arcade	WC	Courtyard	WC
9	Arcade	Pantry	Arcade	Street 2 (depot 2)
10	Arcade	WC	Courtyard	Backyard=Bath
General	Arcade 9/10 Courtyard 4/10	WC 7/10	Arcade 7/10 Courtyard 3/10	Parent room 4/10 Depot 3/10

4.3.3.2 Comparison of Original and Changed Houses in Terms of Basic Differentiation Factor Values

The main Basic Differentiation Factor (BDF) of the houses units with outer hall stated in Table 4.66 and Table 4.67 below have been determined. After the main basic differentiation factor (BDF) values were determined for each residence within the space of the original and changed plans, basic differentiation factor (BDF) values were compared within the space of sub-types, both in the original plans and changed plans of the houses.

Table 4.66: Basic differentiation factor values of original houses units with outer hall

C-House no original plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UOH1)	10	4	10	1.1273	0.5455	1.6364	0.7867
2- (UOH1)	9	3	8	1.1524	0.4509	1.9165	0.6577
3- (UOH1)	9	3	10	0.8768	0.3382	1.1274	0.7549
4- (UOH2)	10	4	10	1.1273	0.5455	1.8182	0.7443
5- (UOH2)	9	4	9	1.0773	0.5637	1.6911	0.7813
6- (UOH2)	13	4	16	0.9306	0.3849	1.4297	0.7125
7- (UOH2)	11	3	12	1.0139	0.4521	1.6578	0.7105
8- (UOH3)	12	5	11	1.1701	0.4468	1.9785	0.6414
9- (UOH3)	13	5	14	1.0998	0.4949	1.7597	0.7231
10- (UOH3)	9	5	10	1.3027	0.6764	2.3675	0.7112
Average	10.5	4	-	1.0878	0.4899	1.7383	0.7224

Table 4.67: Basic differentiation factor values of changed houses units with outer hall

C-House no changed plans	No. of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UOH1)	20	4	23	0.8782	0.3637	1.3770	0.7041
2- (UOH1)	9	5	9	1.3027	0.5637	2.0293	0.7216
3- (UOH1)	14	6	15	1.2425	0.6727	1.7779	0.8276
4- (UOH2)	13	5	13	1.0660	0.4399	1.7047	0.6940
5- (UOH2)	13	4	15	0.9306	0.3849	1.2648	0.7598
6- (UOH2)	20	6	24	1.0029	0.4677	1.6628	0.7194
7- (UOH2)	13	6	15	1.2690	0.6599	1.9247	0.7931
8- (UOH3)	16	4	16	0.9247	0.3794	1.7451	0.6101
9- (WOH3)	14	6	15	1.2494	0.5766	2.2104	0.6848
10- (WOH3)	14	4	15	1.0297	0.4805	1.6818	0.7263
Average	14.6	5	-	1.0896	0.4989	1.7379	0.7241

In the examples of rural-vernacular houses units with outer hall below (Table 4.68 and Table 4.69), the houses numbered 1, 2 and 3 are of the same type. Among these examples, which have sub-type housing characteristics within the scope of their location within the plot, only the number of spaces in the original plans of the houses numbered 2 and 3 is the same. In the changed plans, the number of places after the change of house number 2 is still the same. The common feature of this sub-type of houses is that the houses are adjacent to the land boundary on three sides. The south-facing aspects of the houses are courtyards.

Table 4.68: Basic differentiation values from the subtype's original plans UOH



C- Units with outer hall (1 st gr. original plans)	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
							
1- (UOH)	10	4	10	1.1273	0.5455	1.6364	0.7867
2- (UOH)	9	3	8	1.1524	0.4509	1.9165	0.6577
3- (UOH)	9	3	10	0.8768	0.3382	1.1274	0.7549
Average	9.3	3.3	9.3	1.0522	0.4449	1.5601	0.7331

Table 4.69: Basic differentiation values from the subtype's changed plans UOH

C- Units with outer hall (1 st gr. change plans) 	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1- (UOH)	20	4	23	0.8782	0.3637	1.3770	0.7041
2- (UOH)	9	5	9	1.3027	0.5637	2.0293	0.7216
3- (UOH)	14	6	15	1.2425	0.6727	1.7779	0.8276
Average	14.3	5	15.7	1.1411	0.5334	1.7281	0.7511

In the examples of rural-vernacular houses units with outer hall below (Table 4.70 and Table 4.71), houses 4, 5, 6 and 7 are the same sub-type houses. These examples, which have sub-type housing features, do not have the same number of spaces. The residences show the same characteristics only in terms of their location within the plot. In all four examples, the front and rear facades of the houses are open and they are adjacent to the land border on one side.

Table 4.70: Basic differentiation values from the subtype's original plans UOH



C- Units with outer hall (2 nd gr. original plans) 	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
4- (UOH)	10	4	10	1.1273	0.5455	1.8182	0.7443
5- (UOH)	9	4	9	1.0773	0.5637	1.6911	0.7813
6- (UOH)	13	4	16	0.9306	0.3849	1.4297	0.7125
7- (UOH)	11	3	12	1.0139	0.4521	1.6578	0.7105
Average	10.75	3.75	11.75	1.0373	0.4866	1.6492	0.7372

Table 4.71: Basic differentiation values from the subtype's changed plans UOH

C- Units with outer hall (2 nd gr. changed plans) 	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
4- (UOH)	13	5	13	1.0660	0.4399	1.7047	0.6940
5- (UOH)	13	4	15	0.9306	0.3849	1.2648	0.7598
6- (UOH)	20	6	23	1.0029	0.4677	1.6628	0.7194
7- (UOH)	13	6	15	1.2690	0.6599	1.9247	0.7931
Average	14.75	5.25	16.5	1.0671	0.4881	1.6393	0.7416

In the examples of rural-vernacular houses units with outer hall below (Table 4.72 and Table 4.73), the houses numbered 8, 9 and 10 are of the same type. Within the scope of these examples, which have sub-type housing characteristics based on their location within the plot, the number of spaces is not the same. The number of spaces have

increased across the changed plans. The common feature of these sub-type houses is that the courtyard and backyard facades of the houses are open and they are adjacent to the land border from both sides.

Table 4.72: Basic differentiation values from the subtype's original plans UOH

C- Units with outer hall (3 rd gr. original plans)	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
8- (UOH)	12	5	11	1.1701	0.4468	1.9785	0.6414
9- (UOH)	13	5	14	1.0998	0.4949	1.7597	0.7231
10- (UOH)	9	5	10	1.3027	0.6764	2.3675	0.7112
Average	11.3	5	11.7	1.1909	0.5394	2.0352	0.6919






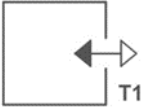
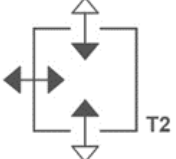
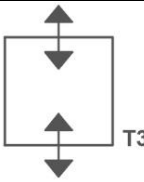
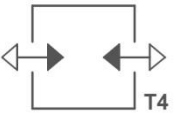
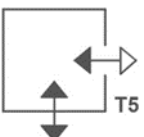
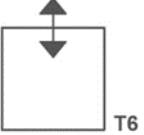
Table 4.73: Basic differentiation values from the subtype's changed plans UOH

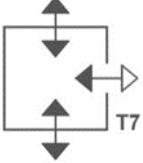
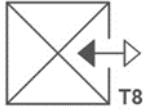

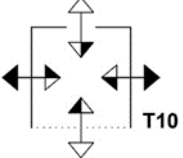
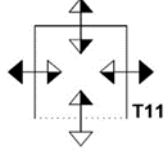
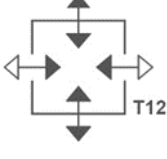
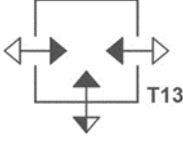

C- Units with outer hall (3 rd gr. changed plans)	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
8- (WOH3)	16	4	16	0.9247	0.3794	1.7451	0.6101
9- (WOH3)	14	6	15	1.2494	0.5766	2.2104	0.6848
10- (WOH3)	14	4	15	1.0297	0.4805	1.6818	0.7263
Average	14.7	4.7	15.3	1.0679	0.4788	1.8791	0.6737

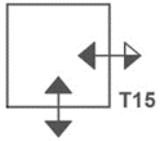
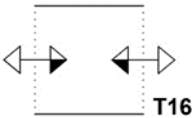
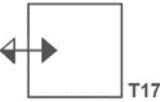
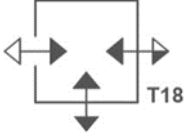
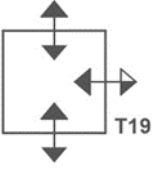
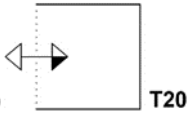
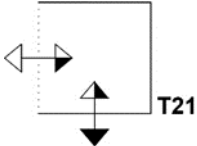
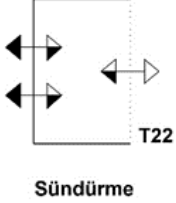
4.3.4 Change of Space Connection Types

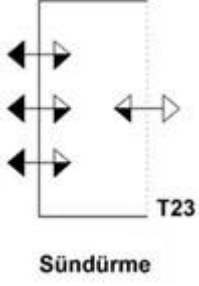
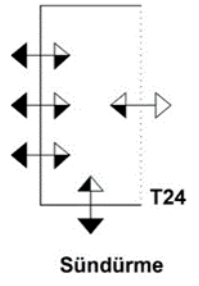
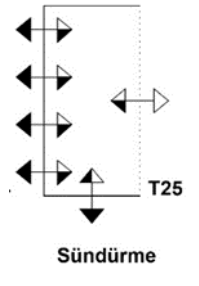
In the field of study, all original plans housing types of Büyükkonuk Village, orientation connection diagrams of closed, semi-closed, and open spaces can be seen below. In terms of the location of the spaces and the space connection relations between the space, a total of 25 space formation types are seen (Table 4.74). As can be seen in the table below, spatial relations and spatial transformations of all rural houses are seen within the scope of the original plan. While the number of connections between the places increased in some examples, it decreased in others. In this situation, the number of space connections increased or decreased in line with the spatial relations within the scope of the changed plan, which had more or less connection in comparison to the original plan. In some examples, it is seen that the original space types not only preserved the number of spatial connections but also increased them.

Table 4.74: Unique space types in rural-vernacular housing: classification of the space in terms of its relations with the surrounding spaces

All units types: Samples of all units' original space and types (All rural-vernacular houses)				
C:closed space, S:semi-open/semi-closed, c:connection with closed space, s:connection with semi-open space, o:connection with open space				
Space connection types				
				
Closed / Open (courtyard)	Closed / Closed	Closed / Semi-closed	Semi-closed / Open (courtyard)	Semi-closed / Semi-closed
Space	Typology	Spatial connection relations of all spaces		
	T1:Co	The space is directly related to the courtyard. It has no connection with any other interior. The type of housing that is commonly seen is an example of a Units Without Hall. The type of space has changed.		
	T2:Cco ²	The space is directly related to the courtyard on two sides and has a single indoor connection. It is seen in the plans of the units without a hall. The type of space has changed.		
	T3:Cc ²	The space is completely unrelated to the outside and the two indoor interior spaces are connected. It is seen in the plan of the units without hall. The type of space has not changed.		
	T4:Co ²	The space is directly connected to the courtyard in two directions. It is seen in the plans of the units without a hall. The type of space has changed.		
	T5:Cco	The space is related to the outdoor courtyard and an indoor space is connected. It is seen in the house plans of Units Without Hall and Units with Inner Hall. The type of space has changed.		
	T6:Cc	The space is connected by a single interior space. It is seen in the house plans units without hall and units with inner hall. It has changed in some plans, as well as retaining the type of space.		

	T7:Cc ² o	The space is directly related to the courtyard and is connected to an indoor space. It is seen in the plan of the units without hall. The type of space has changed.
 <p><i>Hanay</i></p>	T8:Cs	The space is located on the upper floor (Hanay) and is connected to the only outdoor space. It is seen in the house plans units without hall and units with inner hall. The type of space has changed.
 <p><i>Hanay</i></p>	T9:Cso	The space is located on the upper floor (Hanay) and the two outdoor spaces are connected. Space type is seen in house plan type units with inner hall. The type of space has changed.
	T10:Sc ² o ²	The front and back of the space are directly related to the open space and the two indoor spaces are connected. It is only seen in the house plan units with inner hall. The type of space has changed.
	T11:Sc ² os	The front of the space is a semi-open space, the back of the open space is related to the courtyard, and the two indoor spaces are connected. It is only seen in the house plan units with inner hall. The type of space has changed.
	T12:Cc ² o ²	The space is connected to the two outdoor spaces, but the two are connected to the interior. The space is seen in the house plan of Units with Inner hall. While it has preserved the type of space, it has changed in some plan examples.
	T13:Cso ²	While the space is related to two open spaces, a semi-open space is connected. The space is seen in the house plan units with inner hall. The type of space has changed.
	T14:Cso	The space is directly related to the courtyard and is connected to a semi-open space. The space type is seen in the house plan Units with Inner Hall and Units with Outer Hall. As the space type has been preserved in both housing examples, it is also seen

		that some of the house Units with Outer Hall have changed in plan.
	T15:Ccs	The space is connected by a semi-open space and a closed interior. The space is seen in the house plan units with outer hall. It is also seen that the type of space preserves its characteristics and changes due to its connections.
	T16:Sso	The type of space is linked to a semi-open space and an open (street) space. It is seen in the house plan units with inner hall. The type of space has not changed.
	T17:Cs	The space is connected by a single semi-open space. It is seen in the house plan units with inner hall. The type of space has changed.
	T18:Ccso	The space is directly related to the back courtyard, and a closed interior space and a semi-open space are connected. It is seen in the house plan units with outer hall. The type of space has changed.
	T19:Cc ² s	While the space is related to two interior spaces, a semi-open space is connected. It is seen in the house plan units with outer hall. The type of space has changed.
	T20:So	The space is a semi-open space and is directly connected to the courtyard. It is seen in the house plan units with inner hall. The type of space has changed.
	T21:Sco	The space is directly related to the courtyard and is connected to an indoor space. It is seen in the house plan units with inner hall. The type of space has changed.
	T22:Sc ² o	The space is connected to two indoor spaces and the semi-open space is connected to the courtyard. It is seen in the house plan units with outer hall. The type of space has changed.

	T23:Sc ³ o	The space is connected to three indoor spaces and the semi-open space is connected to the courtyard. It is seen in the house plan units with outer hall. While the type of space has been preserved, it has changed in some plans.
	T24:Sc ⁴ o	The space is connected to four indoor spaces and the semi-open space is connected to the courtyard. It is seen in the house plan units with outer hall. The type of space has changed.
	T25:Sc ⁵ o	The space is connected to five indoor spaces and the semi-open space is connected to the courtyard. It is seen in the house plan units with outer hall. The type of space has changed.

The result of the analysis of the location of the spaces and the space connection relations between the spaces, investigating the change of space connection types, 13 new space types were determined with the change in the number of connection numbers, types or space types (Table 4.75). In this context, a total of 38 space types have been identified in all original and changed housing samples.

Depending on the comparisons made from three different perspectives that support each other, BDF values show a significant increase in varying houses. As a result of the increase in the BDF value of the changed spaces in all the houses, depending on the increasing number of space connections, it is seen that the spatial setup of the houses has changed and turned into a weak and homogeneous structure as well as being

segregated. Naturally, new space types with a high number of connections also support this. However, it is observed that most of these connections are indoor-connected and the open or semi-open space connection decreases in new spaces. In the changed houses, new spaces with dense interior connections are formed, and the number of integrated spaces has increased. Starting from the most integrated space near the entrance, it is seen that heterogeneity, that is, privacy, is strengthened thanks to the transition spaces arranged in a hierarchical order. Parallel to this, the flexible use of spaces gives way to the use of spaces with specialized functions that strengthen privacy.

Table 4.75: New space types emerging in changed rural-vernacular housing

Spatial connection diagrams				
Connection typologies				
NT1:Cco, NT2:Cc3o, NT3:Cc2o, NT4:Cc2, NT5:Sco2, NT6:Cc2oso, NT7:Cc3so, NT8:Cc3, NT9:Sso, NT10:Cc5, NT11:Cc4 o, NT12:Sc5oso, NT13:Sc3oso				
Connection types				
 Closed / Open (courtyard)	 Closed / Closed	 Closed-semi / Closed	 Semi-closed / Open	 Semi-closed / Semi-closed
C:closed space, S:semi-open/semi-closed, c:connection with closed space, s:connection with semi-open space, o:connection with open space				

The total number of spaces and the change in the number of space types were determined in the original and change housing examples. In this context, despite the addition of new spaces to the original houses, the increase in the total number of spaces seems to be minor since at the same time some original spaces that are adjacent to each other are combined to form a single space (Table 4.76).

Table 4.76: Change of space types in Büyükkonuk Village rural-vernacular housing

	Housing type	1-Units Without Hall (UWH)	2-Units with Inner Hall (UIH)	3-Units with Outer Hall (UOH)
ORIGINAL HOUSING	Total number of spaces (street+courtyard+garden)	76	113	105
	Total number of spaces (except street)	65	100	93
	Total number of space types	39	69	65
	Number of space types	10 (15xT1, 3xT2, T3, T4, 10xT5, 4xT6, 2xT7, T8, T17, 2xT21)	18 (18xT1, T2, T3, 2xT4, 7xT5, 7xT6, T8, T9, 6xT10, T11, 3xT12, T13, 2xT14, T15, 2xT16, 11xT17, 3xT20, T21)	14 (8xT1, 3xT5, 4xT6, T7, 2xT8, 4xT14, 9xT15, 20xT17, 3xT18, T1, T22, 2xT23, 6xT24, T25)
CHANGED HOUSING	Total number of spaces (street+courtyard+garden)	141	168	146
	Total number of spaces (except street)	129	156	133
	Total number of space types	46 (3 space is destroyed)	61 (13 space is destroyed)	70 (6 space is destroyed)
	Original space types and new space types as a result of spatial change	11 available type (3xT1, 2xT2, 4xT3, 2xT5, 17xT6, 2x7, T14, 3xT15, T16, 6xT17, T21)	11 available type (8xT1, 4xT3, 11xT5, 16xT6, 2xT7, T8, 4xT12, T14, T16, T19, 3xT20)	12 available type (3xT1, 4xT3, 5xT5, 14xT6, 4xT7, T8, 2xT14, 11xT15, 6xT17, 4xT19, 3xT23, 2xT24)
		4 new type (NT1, NT2, NT4, NT5)	5 new type (5xNT2, NT5, NT7, NT8, NT9)	8 new type (NT2, NT6, 2xNT8, NT9, NT10, 2xNT11, NT12, NT13)
	Changed type of space	32+4 (new type)=36	36+9 (new type)=45	38+10 (new type)=48
	Space that preserves its original type	10	16	22
	Space that changed from its original	32	36	38
The number of spaces changed into new types	4	9	10	

On the other hand, of the identified space types which of the 25 original space types have changed are summarized spatial and numerically below. Field types that retain their uniqueness and change are shown in the following tables (Tables: 4.77, 4.78, and 4.79). The colours show the same spatial meaning in all housing examples. The unchanging spaces shown with violet colour; represent the changed spaces shown in

yellow and the new spaces shown in green colour. Some demolished space types are shown with the letter 'D', and red colour (See Tables: 4.77, 4.78, 4.79). Spaces with open or semi-open space connections are the most frequently changing types and have turned into examples with closed-open space and closed half-open space connections (T1 and T17).

In the original 'Units Without Hall' housing examples, closed-type spaces directly connected to the open space, such as the courtyard and backyard (T1, T2, T4, T5, T7), have transformed into spaces connected to the added closed spaces (T6), or to semi-open spaces (T14, T17) in changed houses. They have also increased their connections with the other adjacent closed spaces (T2 to NT2; T5 to T7). On the other hand, the spaces (T6, T8, T17), which are closed spaces that have a one-way connection to closed, open and semi-open spaces continued to establish that one-way connection in some of the changed dwellings. T21, which is a semi-open space, seen in the original units without hall housing typology, maintains its semi-open space feature in changed plans and it is seen to be connected with the open space from one or two directions.

The semi-open 'Units with Inner Hall' space seen in original units with inner hall housing that is usually a distributor space have turned into a closed space that is generally used as the living room in the changed dwellings. In terms of connections, this semi-open space type that is directly connected with the open space from one or two directions creates a connection with the closed spaces (T10, T11); preserved its relationship with the existing open and closed spaces by being transformed into a closed space in the changed housing (T12); or created a connection with both existing and added closed spaces (NT2). In addition, in the original examples of units with inner hall housing, the type of space (T1) that is connected to the open spaces such as

the courtyard and the backyard from one direction still maintains its feature as a single connection.

In the original examples of 'Units with Outer Hall' housing, the outer hall space (T22, T23, T24, T25), a semi-open space that creates a connection directly between the open space and the closed spaces has been transformed mostly into a closed space (NT2, NT11), the whole space is enclosed in 3 of the changed dwellings and half of the space in 5 of them. These space types maintain the distributive space feature that connects both the existing spaces and the enclosed spaces that have been added to the courtyard. Those spaces that have been turned into closed spaces are mostly used as living rooms. In the 2 dwellings where the outer hall area was not enclosed and in 5 dwellings where half of the mentioned semi-open outer hall space (T22, T23, T24, T25) was enclosed, the hall preserved its semi-open feature; it maintains the distributor space feature connecting the closed spaces with the courtyard (T23, T24, NT12, NT13). For this reason, the units with outer hall housing continue to be the housing typology that preserves its originality the most and adapts best to its changed state.

4.4 The Change of Basic Functions in Spatial Organisation

According to the space syntax used in the study, the most important thing is to reveal the spatial fictions that are not seen and talked about at first glance, related to the background of the residential spaces and the way these spaces come together. Across the rural-vernacular housing types selected in the study, all the spaces in the space pattern are shown in order from the most integrated to the least integrated. Thus, the spatial relations of which spaces are more densely and less frequently used spaces were specified.

In this direction, under this title, it is aimed to reveal the relationship between the spatial pattern and uses, or in other words, the functions of the spaces, their functional harmony, and other spaces. According to Tong (2001); While examining the new functional adaptability of a building, it is necessary to first consider the systems that make up the building. The environmental system that needs to be addressed first, is the methods applied to vary according to the user culture profiles (Tong, 2001).

For this analysis below (Table 4.80), one house plan from each of the rural-vernacular house types was selected. These selected house plans show the house plans that vary the most. Here, indoor, and outdoor multi-purpose spaces (courtyard, kitchen, living room) where daily life, cooking, and guest reception functions are selected. It is also very important to investigate how strong or dominant the spaces are in this sample.

Another important reason for choosing these three spaces is the most integrated space in the original plans is the courtyard space. This shows that the courtyard is one of the heavily used spaces. This is important for spaces with intense daily functionality. Secondly, the chosen kitchen space is stated in the plans by transferring it to the

original plans by the residents. The living room, which was chosen as the third, is considered a multi-purpose indoor space and a place that serves as guest reception. Since there was a fireplace in some places in the original plans, it is understood that that place was used for cooking and daily living. However, in the rooms without a fireplace in the original plans, the widest, largest room (R) was assumed to be the living room. The reason for this is the users are not the original owners of the house; is that he does not know which place is used as a living room. In line with this information, in the research below, the average depth integration value ranking of the activities taken by the selected spaces both within the scope of the original plans and within the scope of the changed plans was examined. The table below includes both the mean depth and the average integration value (Table 4.80). In the analysis, there are 4.81, 4.82, and 4.83 tables in which the plans and graphics are indicated in detail.

Table 4.80: The order of integration of the courtyard, kitchen, and living room functions.

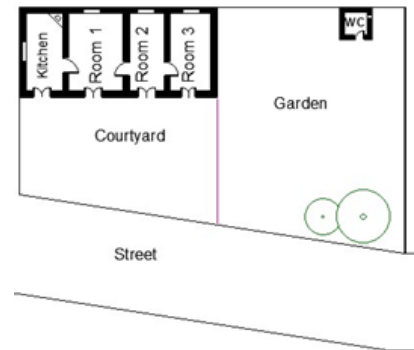
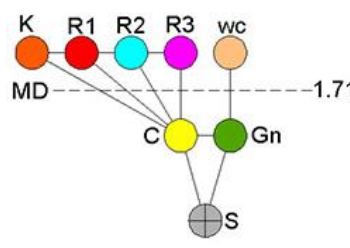
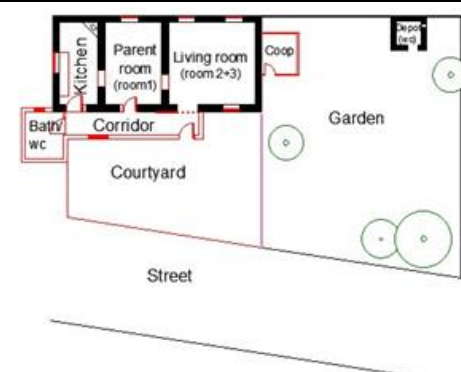
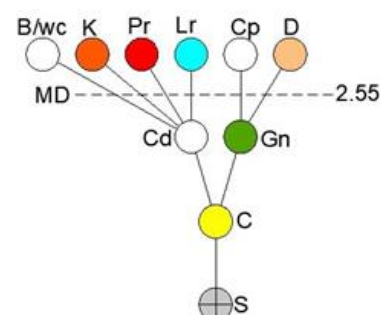
House plan types	Number of spaces	Mean dept. (MD)	Average integration value (AIV)	Courtyard Graphics depth		Kitchen (cooking)		Living (receiving)		Order of integration
				GD	IV	GD	IV	GD	IV	
Values of houses				GD	IV	GD	IV	GD	IV	
OP / UWH	8	1.71	0.76	1.00	0.15	2.00	0.87	2.00	0.73	C<Lr<mean<K
CP / UWH	10	2.55	1.16	1.00	0.55	3.00	1.27	3.00	1.27	C<mean<K=Lr
OP / UIH	14	1.85	0.78	1.00	0.24	2.00	0.58	2.00	0.67	C<K<Lr<mean
CP / UIH	16	2.4	0.90	1.00	0.49	3.00	1.29	2.00	0.76	C<Lr<mean<K
OP / UOH	11	2.5	1.01	1.00	0.45	2.00	0.98	3.00	1.21	C<K<mean<Lr
CP / UOH	13	3.92	1.27	1.00	1.32	4.00	0.82	3.00	0.66	Lr<K<mean<C
Note. OP= Original plan; CP= Changed plan; GD= Graphics depth; MD = Mean depth; IV= Integration value										

For the original and changed plans above (Table 4.80) for each type of house shows the example; the number of spaces; mean depth; mean integration; the integration value for each of the spaces assigned to the vital domestic functions of the kitchen – K (cooking), living – Lr (multi-functional living and receiving guests in closed-space), and courtyard – C (multi-functional living in open-space), and their integration order, from the most integrated to the least integrated.

In line with these explanations, the analysis illustrated that the order of integration values for the spaces the courtyard (C), the kitchen (K), and the living room (Lr) showed a range of differences in Table 4.80, using the symbol "<" means "more integrated."


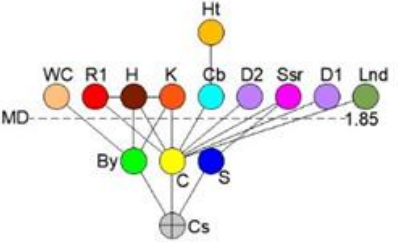

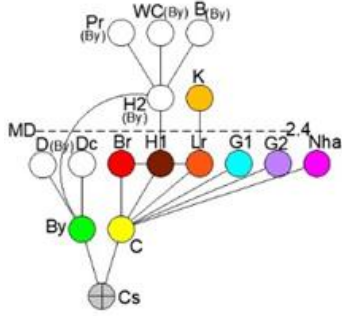
In the first example, the order of integration was $C < Lr < \text{mean} < K$ in Units Without Hall (UWH) in the original plan, where the courtyard was the most integrated, the living room was integrated, and the kitchen was segregated. The order of the integration value in the changed plan was $C < \text{mean} < K = Lr$, where the courtyard was the most integrated, and the living room and the kitchen had equal value as segregated. The sample house plan with the corresponding justified graphs and the integration values are illustrated below (Table 4.81).

Table 4.81: Spatial and functional differences in the units without hall house (UWH)

UNITS WITHOUT HALL - UWH	N	House number: 10
<p>Original plan organization</p> 	<p>Justified graph of original plan</p> 	
<p>Courtyard < Living room (R1) < mean depth < Kitchen (C) 0.15 < (Lr) 0.73 < (AIV) 0.76 < (K) 0.87</p>		
<p>Changed plan organization</p> 	<p>Justified graph of changed plan</p> 	
<p>Courtyard < mean depth < Kitchen = Living room (C) 0.55 < (AIV) 1.16 < (K) + (Lr) = 1.27</p>		
<p>S: Street, C: Courtyard, R: Room, R1, R2, R3,..., Lr: Living room, Pr: Parent room, K: Kitchen, Cd: Corridor, B/wc: Bathroom/wc, D: Depot, Cp: Coop, Gn: Garden, wc: Toilet</p>		

In the second example, the order of integration was $C < K < Lr < \text{mean}$ in the Units with Inner Hall (UIH) in the original plan, where the courtyard was the most integrated, and the living room and the kitchen were integrated. The order of the integration value of the changed plan was $C < Lr < \text{mean} < K$, where the courtyard was the most integrated, the living room was integrated and the kitchen was segregated. The sample house plan with the corresponding justified graphs and the integration values are illustrated below (Table 4.82).

Table 4.82: Spatial and functional differences in the units with inner hall house

UNITS WITH INNER HALL - UIH	N	House number: 3
Original plan organization		Justified graph of original plan
		
<p style="text-align: center;">Courtyard < Kitchen < Living room (R1) < mean depth (C) 0.24 < (K) 0.58 < (Lr) 0.67 < (AIV) 0.78</p>		
Changed plan organization		Justified graph of changed plan
		
<p style="text-align: center;">Courtyard < Living room < mean depth < Kitchen (C) 0.49 < (Lr) 0.76 (AIV) 0.90 < (K) 1.29</p>		
<p>S: Street, S1, S2., C: Courtyard, R: Room, R1, R2, R3,..., Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, Cd: Corridor, Cd1, Cd2, H: Hall, H1, H2, By: Backyard, B: Bathroom, B/wc: Bathroom/wc, D: Depot, Ldr: Laundry, Cy: Canopy, Nha: New house area, Crw: Car way, Gw: Gateway, Cs: Culdesac, Cp: Coop, Gn: Garden, Ssr: Sheep shelter, Dc: Dog cage, Cb: Cow barn, Ht: Hayloft</p>		

In the third example, the order of integration was $C < K < \text{mean} < Lr$ in Units with Outer Hall (UOH) in the original plan, where the courtyard was the most integrated,

the kitchen was integrated and the living room was segregated. The order of the integration value of the changed plan was as $Lr < K < \text{mean} < C$, where the living room was the most integrated, the kitchen was integrated and the courtyard was segregated. The sample house plan with the corresponding justified graphs and the integration values are illustrated below (Table 4.83).

Table 4.83: Spatial and functional differences in the units with outer hall house

UNITS WITH OUTER HALL - UOH		House number: 7	
Original plan organization		Justified graph of original plan	
<p style="text-align: center;">Courtyard < Kitchen < mean depth < Living room (R1) (C) 0.45 < (K) 0.98 < (AIV) 1.01 < (Lr) 1.20</p>			
Changed plan organization		Justified graph of changed plan	
<p style="text-align: center;">Living room < Kitchen < mean depth < Courtyard (Lr) 0.66 < (K) 0.82 < (AIV) 1.26 < (C) 1.32</p>			
<p>S: Street, C: Courtyard, A: Arcade, R: Room, R1, R2, R3, R4, Lr: Living room, Br: Bedroom, Pr: Parent room, Cr: Child room, K: Kitchen, By: Backyard, B/wc: Bathroom/wc, D: Depot, D1, D2, wc: Toilet</p>			

It is stated how much difference and similarity there is between spatial functionality and function in all three housing examples analysed above. In all three rural-vernacular

housing samples, the most integrated space within the scope of the original plan in the main spaces related to daily life is the courtyard. The courtyard is the common living space of the houses within the framework of the numerical values where all three (3) samples are the lowest within the scope of the original plan.

According to the data in Tables 4.81, 4.82, and 4.83, the number of transportation steps in the graph of the multi-functional spaces (courtyard, kitchen, and living room) is expressed according to each space in each residence. The number of places exceeded means the number of transportation steps (Tong, 2001, p.32). Accordingly, in Table 4.81; in the original plan; The number of steps to reach the courtyard is one (1), and the number of steps to reach the kitchen and living room is two (2). Although the number of steps in the kitchen and living room is the same, the living room is integrated, and the kitchen is segregated. The kitchen is more segregated than the other two spaces (courtyard and living room). This shows that the kitchen is used more controlled. The reason for this is that the connection of the kitchen is less than the other two places.

According to the changed plan analysis data of the house, the number of steps to reach the courtyard was one (1), and the number of steps to reach the kitchen and living room was three (3). Within the scope of the changed plan, it is seen that the courtyard is integrated and the kitchen and living room are equally disjointed. In this analysis, where we examine the functional, functions of the spaces and the relationship between other spaces, the addition of a new space did not increase the number of courtyard access steps. On the other hand, with the addition of a new space, the number of steps for the kitchen and living room has increased; And this situation made the 2 spaces (kitchen and living room) more controlled than the courtyard.

Accordingly, in Table 4.82; in the original plan; The number of steps to reach the courtyard is one (1), and the number of steps to reach the kitchen and living room is two (2). The courtyard is the most heavily used multi-purpose space. In addition, the number of transportation steps in the kitchen and living room is the same. Compared to the courtyard, they are second-order integrated spaces. According to the changed plan analysis data of the house, the number of access steps for the courtyard was one (1), the number of steps for the living room was two (2), and the number of steps for the kitchen was three (3). In the changed plan, the courtyard and the living room are integrated, and the kitchen is a separate, more controlled space compared to these two spaces (courtyard, living room).

In Table 4.83; in the original plan; The number of steps to reach the courtyard is one (1), the number of steps to reach the kitchen is two (2), and the number of steps to the living room is three (3). While the courtyard is the most integrated space, the space that follows it is the kitchen. The living room is the most diverse space. On the other hand, according to the changed plan analysis data of the house, the number of steps to reach the courtyard was one (1), the number of steps to reach the living room was two (2), and the number of steps to the kitchen was three (3). In the changed plan, the courtyard has become a separate space compared to the other two spaces in terms of density and use. In this analysis, in which we examined the functions of the spaces and the relationship between them and other spaces, it was seen that the semi-open space (Südüürme) was completely closed; it has been observed that the number of connections of the courtyard to other spaces has decreased. Therefore, the courtyard is used less functionally in this example. The reason for this is that the ties with other places have weakened and remain functionally weak. The direct connection of the

courtyard with the semi-open spaces and the direct connection of the spaces to the courtyard shows that the courtyard is more functionally integrated.

4.5 Discussion on the Findings

As the fourth chapter is the analysis and discussion section, the result of the analysis is presented in detail. Analysis and detections made on the original and changed plans of 30 local houses examined in Büyükkonuk Village shed light on the study; comparative findings are taken to support each other. Rural-vernacular houses are shaped in line with the needs of the physical and socio-cultural environment and according to socio-economic factors; inevitably, it is undergoing an accelerated change. The change inherent in this rural vernacular is classified as changes that occur in the long-term constant and slow, or changes that occur in the short-term rapid and sudden (Rapoport, 2005). Therefore, as the clarification of the slow/sudden and rapid/constant change process was not easy to achieve within the limitation of the research, they have been unified and taken into account together in the application process of the methodology. The diagram below bringing all dimensions of the changes in rural vernacular houses intends to clarify the application of methodology and analysis process (Figure 4.11).

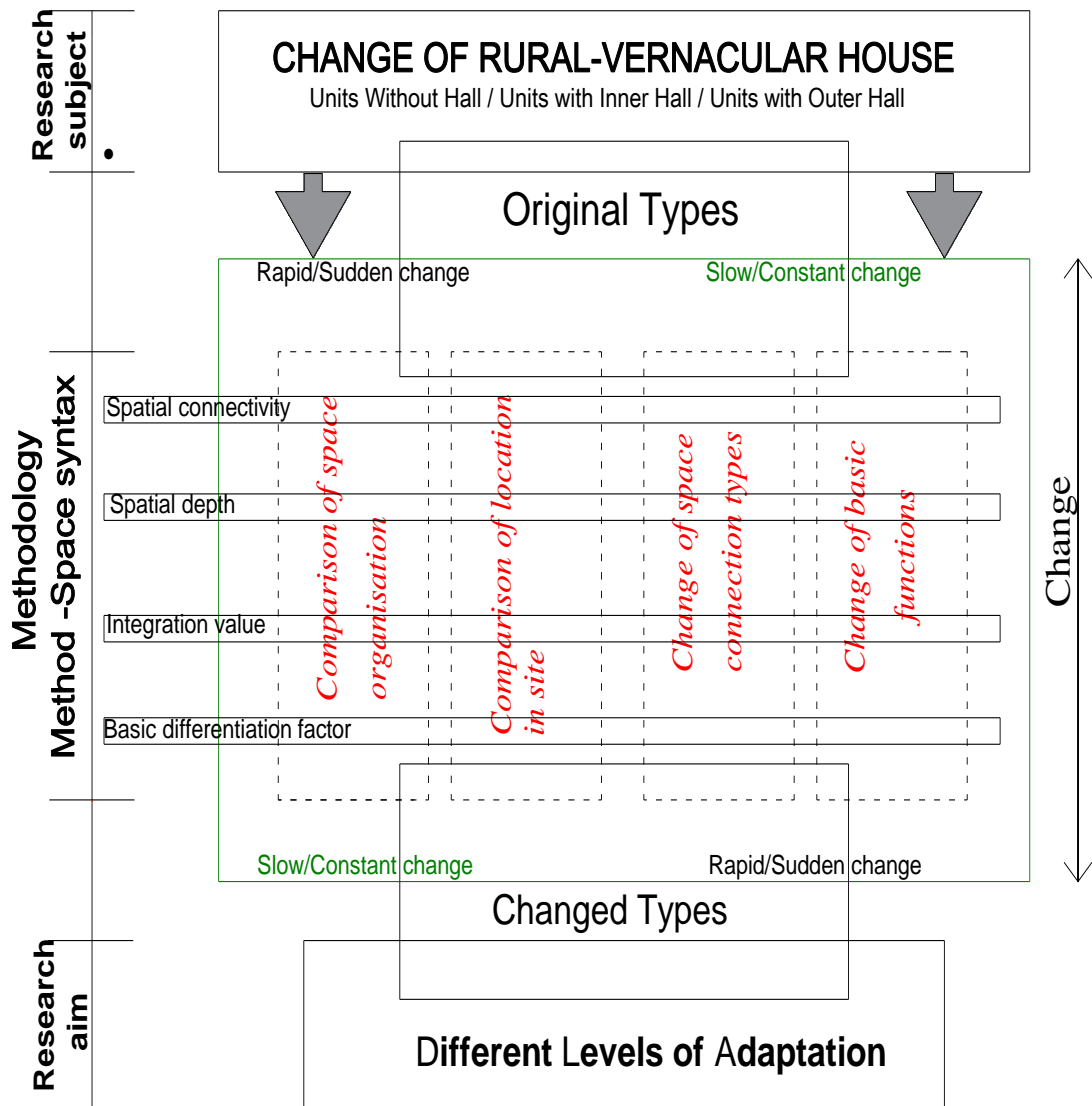


Figure 4.11: Documentation of the changes in rural vernacular housing and application of the space syntax method (Designed by the author)

As a result of the analyses, it can be seen in the table below which spaces are integrated and which spaces are segregated within the scope of 3 basic rural-vernacular houses, both in the original plans and in the changed plans. It is seen that the spaces that give their name to the type (without hall, with inner hall, with outer hall) in rural-vernacular residences are the most integrated spaces of all types, within the scope of the original plan.

According to this, in all of the original examples of the “Units Without Hall” rural housing type, the most integrated space appears as the courtyard (10/10). The courtyard has the quality of being the main distributing space and the most integrated core space in all houses. The most segregated space was the toilet area (7/10). In the altered examples, while the most integrated place is the courtyard or terrace, that is, a courtyard which has been turned into a terrace by being covered (6/10), the most segregated spaces, were identified as the bathroom and toilet areas (6/10), (Table 4.84).

In most of the original examples of the rural housing “Units with Inner Hall” type, the most integrated is the distribution area, which is the courtyard (6/10) and the inner hall (4/10). The most segregated space is mostly the room (4/10). In the altered examples, it can be seen that living spaces transformed from the inner hall continue to play the role of the integrated space of the hall. Therefore, in addition to the courtyard as the most integrated space (5/10), it is seen that terrace spaces which are used as living spaces, attained by covering a part of the courtyard, have emerged. It is seen that the parent room (2/10) and the bathroom / toilets (4/10) have the same value and maintain their position as the most segregated spaces (Table 4.84).

In the original examples of the rural housing “Units with Outer Hall” type, the most integrated space, is mostly the arcade (9/10) and the most segregated space is the toilet (7/10). The arcade (südüürme) area, which is a semi-open space in the original plan, served as a distribution space in 9 of the houses. In this type, the arcade space is more integrated than the courtyard space because the spatial connections of the hall space are more in number than the courtyard. In addition, the hall is a transitional place between the courtyard and the closed spaces. In the changed examples, the most integrated space is the arcade (7/10) which maintains its semi-open spatial feature, and,

in some examples, it can be seen that this space has been closed and transformed into a hall or a living room. The most segregated space is the parents' bedroom (4/10) and at the same time depot space 3/10 (Table 4.84).

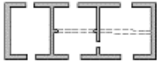
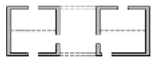
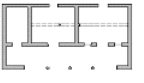
Table 4.84: The most integrated and the most segregated spaces according to the original and changed plans

Rural-vernacular housing	Original plan type			Changed plan type		
	A1	B1	C1	A2	B2	C2
Spaces	Units without hall	Units with inner hall	Units with outer hall	Units without hall	Units with inner hall	Units with outer hall
The most integrated	10/10 Courtyard	6/10 Courtyard 4/10 Hall (İç sofa)	9/10 Arcade (Südüürme) 4/10 Courtyard	6/10 Courtyard, 3/10 Living room	5/10 Courtyard or terrace 3/10 Living room	7/10 Arcade (Südüürme) 3/10 Courtyard
The most segregated	7/10 Toilet	4/10 Room	7/10 Toilet	6/10 Bathroom/ Toilet	4/10 Bathroom/ Toilet 2/10 Parent room	4/10 Parent room 3/10 Depot

In order to digitise the degree of difference between the integration values of the spaces or functions, the basic differentiation factor values of the original and changed examples of the three basic typologies were compared (Table 4.85). This digitization reveals how strong or weak the spatial structure in each of the three typologies is. The number of connections of the changed spaces and the excess of the connection of that space with other spaces is seen as significant in the basic differentiation factor (BDF) values of the housing with changed spaces. In other words, in the case of an increase in the number of spaces, the basic difference factor (BDF) value shows a higher value compared to the original house and shows that the structure of the changed house is

weak and homogeneous. At the same time, there is not a great difference between the basic difference factor (BDF) values of the original dwellings and the changed dwellings when all the spaces are not changed. Although there are some changes seen in the spatial organisation, there is not a major difference in the original spatial structure of the housing.

Table 4.85: Comparison of all original and changed houses in terms of basic differentiation factor (BDF) values

Housing No:	A- Units Without Hall UWH 		B- Units With Inner Hall UIH 		C- Units With Outer Hall UOH 	
	A1+A2 (BDF)		B1+B2 (BDF)		C1+C2 (BDF)	
	Original	Changed	Original	Changed	Original	Changed
1	0,4096	0,8377	0,6200	0,7369	0,7867	0,7041
2	0,6143	0,7961	0,6703	0,7776	0,6577	0,7216
3	0,6086	0,8239	0,5566	0,8303	0,7549	0,8276
4	0,7852	0,8580	0,5425	0,6624	0,7443	0,6940
5	0,3006	0,6708	0,6851	0,8266	0,7813	0,7598
6	0,7369	0,7805	0,6348	0,7319	0,7125	0,7194
7	0,4954	0,7408	0,6900	0,7157	0,7105	0,7931
8	0,6111	0,7050	0,8459	0,8296	0,6414	0,6101
9	0,4005	0,4259	0,7282	0,5216	0,7231	0,6848
10	0,3507	0,7884	0,8279	0,8064	0,7112	0,7263
Average	0,5313	0,7427	0,6801	0,7439	0,7224	0,7241

There is a large numerical difference (0.2114) between the original plan structure of the rural-vernacular house in the first group and the changed plans (Table 4.85). A moderate numerical difference (0.0638) is observed in the examples of houses with inner sofas within the scope of group B (Table 4.85). However, there is not a big numerical difference (0.0017) between the original plan and the changed plan in rural-vernacular housing type units with outer halls (Table 4.85), because, if the units (Sündürmeli) coming from the original structure of the house are not closed, it gives it a strong building character. This shows that the house can adapt to change more easily and therefore is more sustainable.

As a result of the comparisons done so far, all original plans belonging to 3 types (Table 4.86) and all changed plan examples (Table 4.87) were further compared. Comparison of the original and changed plans of the houses includes both the total number of spaces in the original plans and the total number of spaces in the changed plans. Comparing the houses in their original and changed ones, both the original plans and the altered plans, generally the strongest and weakest housing structures can be seen. Comparing all rural dwellings with their original and changed ones gives clearer values.

Table 4.86: Basic differentiation factor (BDF) values of total all original plans for basic type houses (UWH, UIH, UOH)

House no (A1 / B1 / C1) (Original all plans)	Number of spaces	Total depth	Total depth	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1(UWH) (A1-10)	76	30	77	1.0471	0.2907	1.6727	0.5313
2 (UIH) (B1-10)	113	38	121	1.0090	0.4053	1.5697	0.6801
3(UOH) (C1-10)	105	40	110	1.0878	0.4899	1.7383	0.7224
Average	294/3=98	108/3=36	103	1.0480	0.3953	1.6602	0.6446

Table 4.87: Basic differentiation factor (BDF) values of total all changed plans for basic type houses (UWH, UIH, UOH)

House no (A2 / B2 / C2) (Changed all plans)	Number of spaces	Total depth	Total rings	Integration with street (RRA)			BDF
				Aver. (c)	Min. (b)	Max. (a)	
1 (UWH) (A2-10)	141	49	147	1.1332	0.5452	1.7135	0.7427
2 (UIH) (B2-10)	168	49	181	1.1075	0.5372	1.7131	0.7439
3 (UOH) (C2-10)	146	50	159	1.0896	0.4989	1.7379	0.7241
Average	455/3=152	148/3=49.3	163.3	1.1101	0.5271	1.7215	0.7369

As a result of these analyses, within the scope of the most and least changed housing types across the 3 basic rural-vernacular houses, the following conclusions were drawn to specify the houses that changed the most and changed the least among the house types:

For ‘Units Without Hall Typology’: The most changed housing example of the units without hall typology is number 10 (Table 4.20). T5 (kitchen, room 3) and T7 (room 1, room 2) type spaces, which were directly related to the exterior of the original dwelling, lost these features and all spaces were connected by a narrow corridor after the change. The kitchen, which was a T5 space type in the original dwelling, closed its connection with the next room (room 1) after the change and became a T6 type space and was connected to the narrow corridor. Thus, alternative access routes and connections of both T5 (kitchen) and all other room (room 1, room 2, room 3) space types have been closed. Again, T5 (room 3) and T7 (room 2) original type spaces were combined and transformed into a single space, T6 type. These original and changing space connection types are shown as an example in the table below for a clearer perception (Table 4.88). It is seen that the courtyards’, which are seen as the most integrated space in the original dwelling, distribution functions are undertaken by the courtyard and the corridor together in the changed residence. The corridor space is the interior version of the courtyard in front of the rooms in the original dwelling and is directly connected to the courtyard. In the changed dwelling, the wall between the T5 (room 3) and T7 (room 2) space types has been demolished and the space has completely transformed into a large space type (T6). This space, which has turned into a T6 type, is used as a living room. As a result, a significant change can be seen in both the original spatial organization and the types of spaces. In the changed example, in the order of integration value, it is seen that the distributive and integrated spaces

increase in a hierarchical order, gaining more and more privacy, in this way it has been revealed that segregated spaces are further separated and privacy is strengthened.

Table 4.88: Showing space connection types in the example of the UWH

UNITS WITHOUT HALL (UWH) / House no:10	
Original plan organization	Changed plan organization
Original space connection type	Changed space connection type
Kitchen:	Kitchen:
Room1:	Parent room:
Room2:	Living room:
Room3:	

On the other hand, although there are new space additions, the example of housing that has changed very little is number 9. Because there is not a great difference between the BDF values of the original dwelling and the changed dwelling when all the spaces are not changed. Although there are some changes seen in the spatial construct, there is not a major difference in the original spatial structure of the housing.

For ‘Units With Inner Hall Typology’: When the values of the housing examples with units with inner hall are compared, it is house example number 3 that has changed the

most (Table 4.34). The courtyard, which is the most integrated space in the original and changed dwellings, has also taken on the role of a distributive space. As seen in Table 4.33, the inner hall1 with spatial type characteristic T10 in the original housing has been closed in the changed housing; transformed into a new type of space, hall, NT2; thus, it gained the feature of being the most integrated space together with the courtyard. Both are also distributive spaces. On the other hand, the room whose original space type was T14 turned into a guest room and the space type became T5. Another original space the kitchen was T13, it was transformed into T5 and became the living room. The hayloft, which is also an original space type, has preserved its T6 type feature, it has been turned into a kitchen by only changing its function. The NT2 space type, which was formed by the change of the original space type, the inner hall T10, has changed in function; only the number of space connections remained the same. T10-type semi-open space used as a transition hall space in the original dwelling is transformed into a closed space NT2 and is used as a living room. The original space types preserved the number of space connections in the changed plan, only by reducing the number of T13 (kitchen) type space connections in the original plan, reducing the number of alternative access paths and connections (Table 4.89). An important point about the dwelling is that street 2 used in the original plan is not used in the changed plan

Table 4.89: Showing space connection types in the example of the UIH

UNITS WITH INNER HALL (UIH) / House no:3	
Original plan organization	Changed plan organization
Original space connection type	Changed space connection type
Kitchen:	Living room:
Room1:	Bedroom:
Hall:	Hall1:
Cow barn:	Garage:
Hayloft:	Kitchen:

On the other hand, the example of the house whose original space setup has not changed despite the new space additions is number 8, because the connection number of the interior hall (sofa) space is not changed. At the same time, the courtyard, which was the most integrated in the original plan, was transformed into the kitchen space, and the kitchen became the most integrated space in the changed plan.

For 'Units With Outer Hall Typology': When the values of the housing examples units with outer hall are compared, it is house example number 7 that changed the most (Table 4.59). The difference of 0.0826 between the two BDF values is quite small compared to the differences between the original and changing BDF values of the other two typologies (without hall: 0.4377 and with inner hall: 0.2737). Therefore, it can be said that the typology that has undergone the least change or resisted change the most is the units without hall housing typology. As can be seen in Table 4.79, the outer hall space T24 (Arcade) is transformed from a semi-open space into a completely different closed space with a different character, type NT2. The outer hall, which had the most spatial connection in the original plan, had also taken on the role of a distributive space. The living room, which is the most integrated space in the changed example, is the changed version of the outer hall. On the other hand, one of the 2 rooms (room 4) was completely demolished and the other (room 1), T17 space type in the original state, was transformed into T7 and became a kitchen space. Alternative paths of reaching the space and connections have been formed with the transformation of the original space type T17 (room 1) into a T7 type space, that had alternative access points and no connection in the original plan. The original space type T18 (Room2), which has an outer hall connection was turned into T7 and became a children's room. The T6 space type, which was used as a storage (Depot) area in the original dwelling, has been preserved in spatial and functional features. Likewise, the kitchen, which was a T5 space type in the original dwelling was preserved as a space type but changed in function and became storage (Table 4.90). In the changed example, in the order of integration value, it is seen that the distributive and integrated spaces increased, in a hierarchical order, gaining more and more privacy. In this way, it has been revealed that segregated spaces are further separated and privacy is strengthened.

Table 4.90: Showing space connection types in the example of the UOH

UNITS WITH OUTER HALL (UOH) / House no:7	
Original plan organization	Changed plan organization
Original space connection type	Changed space connection type
Depot:	Depot2:
Kitchen:	Depot1:
Room1:	Kitchen:
Room2:	Child room:
Room3:	Parent room:
Room4:	--
Arcade:	Living room:

On the other hand, the example of the house whose original space setup has not changed despite the new space additions is number 6, because, in both plans of the house, the most integrated space has preserved its place as the arcade. New space connections were made by the division of closed rooms. In addition, the connection between the courtyard and the upper floor was made from the interior, and this location did not change the essence of the arcade (Südüürme).

As stated above, the result of the basic difference factor (BDF) values revealed whether users from one cultural origin demand more changes compared with ones from the other cultural background. To investigate this, the results of the analysis which are explained in many tables can be the most valuable source to look at. The most changed house (no 10) (Table 4.20) and the least changed house (no 9) (Table 4.19) were seen in the units without hall rural-vernacular housing samples. These residents are families who came from Turkey after 1974. In the examples of house Units with Inner Hall, the most changed house (no 3) is the house used by the family who immigrated from Southern Cyprus in 1974 (Table 4.34). The least changed example of housing (no 8) is the houses used by the families who immigrated from Turkey after 1974 (Table 4.39). Within the scope of the Units with Outer Hall rural-vernacular housing sample, the most changed house (no 7) belongs to a family who immigrated from Turkey after 1974 (Table 4.59). The least changed housing (no 6) example is the house used by the family who immigrated from Southern Cyprus in 1974 (Table 4.58).

Also, in 4.4 above; In the study carried out under the title of 'the change of basic functions in the spatial organisation; With the selected examples, the functions and functional harmony of the spaces were examined. In order to make this analysis, the houses that face the most changes (as a result of numerical values) among the 3 basic rural-vernacular houses were examined. A review has been made on the functional use of the spaces and the integration with other spaces. As a result of the integration values and spatial relations of all 3 selected spaces kitchen – K (cooking), living – Lr (multi-functional living and receiving guests in closed-space), and courtyard – C (multi-functional living in open-space). It is the courtyard space that shows the strongest integration value in all three residences. It is the most functionally used space in all three types of residences. It also has the first space step that must be used for transition

to other spaces. The averages of these functional themes are given in Table 4.80.

Looking at the integration values of all samples:

In the house 'Units Without Hall', the integration value of the kitchen and living room is 1.27, within the scope of the changed plan. These 2 spaces are segregated. The kitchen integration value of the house 'Units with Inner Hall' is 1.29, within the scope of the changed plan. The kitchen is more segregated. In the house 'Units with Outer Hall', the integration value of the living room is 1.21 under the original plan. This place is more diverse. In the house with a shed, within the scope of the changed plan, the integration value of the courtyard is 1.32. This space is more segregated. There has been a strong differentiation in the changed plan in the Sündürmeli rural house. Thus, the space where the living room is located and the open space courtyard have been replaced in terms of functionality. The most important reason for this is the transformation of the space, which was used as a stretching space in the original plan, to a closed space.

4.6 Chapter Conclusion

This chapter focuses on Büyükkonuk village as the case study of the thesis. In line with the general information, such as the historical identity, and architectural structure of the village, based on the analysis of the house types with the similar spatial organization used by Turkish and Greek Cypriot families, a clear picture of the village is drawn showing the similar rural-vernacular life patterns of these two different ethnic cultural groups, which has inhabited the village long before 1974. Afterwards, characteristics of user-profiles changed due to the migration from the south of the island and Turkey, accordingly, a critical question was raised: How did these changes in user profiles together with their new socioeconomic and cultural dynamics cause

the changes in the rural-vernacular houses in Büyükkonuk village? As a response to this question, the space syntax analysis method has been applied to 30 original house plans and 30 changed house plans in Büyükkonuk village, including 10 examples from each selected rural-vernacular housing typology, in total 60 house plans used to finalize the analysis. For each of the three basic rural-vernacular housing units, first, the definition of the spatial characteristics of each sample and the associated general characteristics are briefly documented and then the space syntax analysis methods applied, and findings are discussed.

The numerical method is used to digitize the equations used in the space and understand how and to what extent the original spatial character of the rural-vernacular housing types has changed. Space transition graphs visualizing the space formation and transition organization have been created on all original and changed plans. In this study, while organizing the transition graphs the street is considered as an outdoor space, and the 'Average Depth', 'Relative Asymmetry', and 'Real Relative Asymmetry' values of each house are calculated accordingly. The transition graphs of the original and the changed plans are compared based on 'Relative Asymmetry' values. The lowest numerical values indicate the most integrated spaces, whereas the highest numerical values show the most segregated spaces. In line with these findings, it has been determined how the most integrated spaces in all the original examples show similarities. Documentation of spatial connection characteristics, which types of spaces have been changed, or which new types have emerged. In parallel analysis indicates that in changed houses, the functions of the spaces are mostly contained, however newly emerging or changed space types, functional separation, and diversity have also been examined.

In parallel with transition graphs, the basic difference factors (BDF) for all three housing types were calculated both for the original and changed houses and the results were examined by making a comparison between the three basic types. In addition, the average of the BDF results before and after the change was compared within each type as well. As a result, it has been determined which basic type is more homogeneous or weaker in terms of segregated space organization and which type showed a stronger spatial structure in terms of integrated space organization. On the other hand, increased averages in the changed houses compared to the original ones within each housing type also indicates which type is more open to change. Therefore, following most increased BDF values of original and changed houses within each basic housing type, it was determined to what extent the original spatial organization changed between the three basic housing types.

In terms of the original space types, the locations of the spaces, and relationships between each other in the original plans of these rural-vernacular houses, in total, 25 different space types and 13 new space types were identified with the change in the number of spatial connections and types or type of spaces after the change. In this context, a total of 38 types of space were identified in all original and changed housing samples. In conclusion, in this context:

- 1- In the original examples of Units Without Hall housing, the closed-type spaces directly connected to the open space such as the courtyard and the backyard (T1, T2, T4, T5, T7) turned into spaces connected with the added closed space (T6, NT2) in the changed dwellings, or the spaces connected with the semi-open space (T14, T17). They also increased their connection to other enclosed spaces where they are located side by side (T2 to NT2; T5 to T7). On the other hand, the spaces (T6, T8, T17), which are closed spaces and have one connection to the closed, open, and semi-

open space connection, have continued to connect from one direction in some of the changed houses. T21, which is also seen in the original units without hall housing type and is a semi-open space, is seen to connect with the open space in one or two directions by maintaining the semi-open space feature in the changed plans.

2- In the examples of the original Units with Inner Hall housing, the semi-open interior hall space, which is usually the distributive space, has turned into an indoor space that is usually used as a living room in the changed houses. In terms of connections, the semi-open space type, which is directly connected to the open space in one or two directions, connects with indoor spaces (T10, T11); transformed into enclosed spaces in altered dwellings, maintaining its relationship with existing outdoor and closed spaces (T12), or connected with both existing and added enclosed spaces (NT2). Likewise, the semi-open space T21, which is also seen in the original units with inner hall housing type, has lost its semi-open space feature in the changed space. The T21 space type is connected to the close interior spaces in three directions. In this example, T21 has changed to the new space connection type NT8. In addition, in the examples of the original units with inner hall housing, the (T1) type of space, which is connected to the open space such as the courtyard and the backyard in one direction, retains its feature as a single connection in the same way.

3- In the original examples of the Units with Outer Hall, the arcade (Südüürme) space (T22, T23, T24, T25), was a semi-open space that directly connects the open space and the indoor space. has been transformed into a closed space in some instances. The entire area was closed in 3 and half of the area in 5 of the changed homes replaced residences (NT2, NT11). These types of spaces continue to be the distributive spaces that connect both the existing spaces and the closed spaces that have been added to the courtyard. Those that turned into enclosed spaces are mostly

used as living rooms/halls. The arcade (Sündürme) space was maintained as a semi-open space (T22, T23, T24, T25) in 2 houses where the space was not closed and in 5 houses where half of the arcade (sündürme) was closed. It also maintains the feature of a distributive space (T23, T24, NT12, NT13) that establishes a connection between indoor spaces and the courtyard. For this reason, units with outer hall housing, even in their changed state, continues to be a type of housing that preserves the originality of the space. However, houses with open and half-closed arcades (sündürme) still help to preserve the original characteristics of the house form compared with the other changed house types.

Chapter 5

CONCLUSION

Based on the mutual interaction between the house and the user, this study examines the spatial change in the rural-vernacular housing of Cyprus through the needs of the user which is triggered by socioeconomic and sociocultural factors. Original house types and space typologies shaped by rural-vernacular lifestyles have been identified and defined to be able to examine the spatial change. The study reveals and explains to which extent these typologies change and how this change differs based on the house types.

Büyükkonuk village (Kom-i-Kebir), which represents the characteristics of the rural-vernacular architecture in Cyprus to the present day, was selected as the case study for this study. It is expected that the spatial structure in these rural-vernacular houses shows both constant/slow change in the long term and rapid/sudden change in the short term. The fact that the selected houses are mainly built by Turkish Cypriots and Greek Cypriots before 1974 and are currently inhabited by Turkish Cypriots along with Turks who immigrated from Turkey after 1974 and became TRNC citizens will be important in evaluating and discussing the study findings. Within the residential fabric of the village, 'Units Without Hall', 'Units with Inner Hall', and 'Units with Outer Hall' were the three selected housing typologies that are very common in the rural-vernacular residential architecture of the island. 10 houses were selected from each housing typology and in total 30 houses were analysed using the Space Syntax method to

compare the original spatial organization with the current changed situation. In total, 60 justified graphs were created separately for each plan and the numerical values of transition graphs of original house plans were compared to the values of changed house plans. The lowest numerical values indicated the most integrated spaces whereas the most segregated spaces were indicated by the highest numerical values. In addition, analysis of basic difference factor (BDF) values calculated for each dwelling, indicated to what extent the space structure was strong or weak. By comparing the numerical results between the original and changed plans, it was determined to what extent and how the change in the spatial structure of the dwellings occurred.

The original plans were examined in all the selected houses and a total of 25 space types were identified in terms of the type of connection with the adjacent space. After the change, 13 new space types have been identified because of new spatial connections that have emerged in the changed plans. Based on the analyses, and results of the existing and post-change new space types, it was revealed that the change in rural-vernacular housing not only affected the house plans but the number of spaces and the relations between them, and finally the new types of spaces that emerged. As a result, it has been observed that not only existing space types disappear or change, but also new types appear.

In the comparison of basic difference factor (BDF) values in the original and change examples of rural-vernacular houses, it cannot be said that there is a big change for each house. In general, the type of 'Unit Without Hall' shows a remarkable change as it is indicated, by the clear difference between the basic difference factor (BDF) of the original and changed plans. 'Unit with Inner Hall' type was in second place and the least change was found in the 'Unit with Outer Hall' type of rural-vernacular housing.

The houses that have changed in both the 'Units Without Hall' and the 'Units with Inner Hall' types are seen as more homogeneous and weaker than their original version. However, considering the 'Units with Outer Hall' types, it does not find a big difference between the BDF values of the original and changed versions. However, in the changed state of all three types of residences, homogeneity is observed in proportion to the increase in the number of spaces, since the increasing number of spaces disrupts the defined and strong spatial structure of the house. It has been revealed that in the changed example, the core spaces have increased as integration value, they have gained more and more privacy in a hierarchical order, and in this way, the spaces have become more differentiated and their privacy has been strengthened.

On the other hand, the arcade (Südüürme), which is still the most integrated space in the changed version of the 'Units with Outer Hall' types, has ensured the maintenance of the spatial structure by preserving its existence in the process of change and as the existing space type during the change process. It has been seen that the spatial structure in the 'units with outer hall' housing typology can adapt to the needs of the user without losing its features much during the process of the change. In addition, because of the fact that while the arcade (Südüürme) space was not completely closed, there was no complete change in the overall character of the dwelling, which makes it noteworthy that, when the dwelling is viewed from the outside, it does not look totally different as well.

Contribution to the research method: It is possible and even found quite easy to determine what has changed in the changed versions of the dwellings and how it is discovered by reading and analysing the plans, but these efforts can sometimes lead to misunderstanding. It is also important and necessary to be able to read, understand and

explain the unseen and hidden realities. It is widely known that spatial proximities, depths, and relationships that cannot be easily noticed or distinguished by the eye can only emerge by analysing spatial configurational values. Based on this, in line with the aims of this study, it has been tried to make maximum use of the possibilities of the space syntax analysis method.

In this study, unlike many other descriptive and qualitative studies, objective and analytical research was conducted. In addition, the determination of existing and new types of space used in the study contributed to the examination of the change in architectural space organization together with mathematical measurements and graphic methods. The mathematical results were supported by such changes in the types of spaces, and it was possible to make even more in-depth and multidimensional interpretations and discussions, which were used in a way that supported the method of spatial syntax. It is, therefore, worth underlining as a unique contribution to the well-known and broadly used more productive application of the well-known and broadly used method.

Remarks on the findings of the thesis: At the beginning of the study, the initial research intention was to observe quite a few sudden and rapid changes in the rural-vernacular housing in the area as it has been done at first at the beginning of the 20th century by the colonial administration considering mostly the sanitation interventions; toilet and bathroom spaces located at the edges of courtyards. It is expected that, afterwards, the same type of sudden/rapid changes would have been done by the users who had to move to the area after 1974 according to their urgent needs. However, during the study, it has become clear that even those users who immigrated were not in such a rush of rapid and decisive change. Rarely, in some cases the spaces added in

the same way according to the urgent needs at the edges of courtyards which continue to be the most integrated space; it is observed that the original space organization was still preserved. Within the scope of the changes, two houses (houses 1st and 2nd) units without halls caused serious major transformations.

Nevertheless, it has been observed that the transformation and deterioration of the rural vernacular areas caused by the implementation of type-villa projects constructed in rural environments as a state policy are the aliens in genuine rural settlement textures. It should be noted that even the abovementioned sudden and rapid changes do not affect the original spatial fiction of rural-vernacular settlement to a very large extent. The more recent sudden and rapid change in housing in the short term was the result of proposals for solutions to the property problem contained in the Annan Solution Plan, which was a part of the United Nation's efforts to unite the two main communities on the island. It has been revealed that the rapid changes that emerged after 2004 with the foresight that it would give the chance to the current owner to gain official ownership of their properties on the condition that the houses were renewed, as proposed in the Solution Plan, proved not to produce very different results from the continuous and slow changes made by the housing users in line with their own needs over time it can be expected that, did not cause any major changes in the organization of the space.

At this point, it should be underlined that an important component of rural-vernacular housing types and open-space courtyards and semi-open spaces (südüürme) or interior halls, which are used intensively in daily life, are still intensively used as daily activity areas. Some elements such as wells and ovens in the courtyard are still used today. Looking at the three basic housing types, the biggest change in the spatial typologies

in the dwellings is multifunctional, spaces related to open and/or semi-open space types are transformed into single-function and more interior space types. In changed houses, the number of spaces has increased; living rooms, guest rooms for relatives and/or friends, bedrooms as personal spaces, and circulation spaces such as hallways or corridors have been added. In addition, spaces such as kitchens, toilets, and bathrooms, which were mostly outdoors in the original housing plan, were moved inside the residence.

The flexible, changeable structure of rural-vernacular housing, which was stated at the beginning of this study, was confirmed by the findings of the research. It was emphasized that this flexibility grew as a result of constant/slow, as well as rapid/sudden additions to the rural-vernacular structures in the process of spatial change. The constant/slow changes are a part of the nature of rural-vernacular housing which has occasionally happened in the life of the houses whenever it is needed, this has been underlined in the thesis; subsequently, this research is able to document only the rapid/sudden changes in the rural vernacular housing.

On the other hand, in many cases, it is seen that rapid/sudden usually unplanned changes to the spatial structure of rural-vernacular housing mostly would not be extraordinarily successful. While the changes made as a result of quick and unthoughtful decisions were expected to lead to distortions in the original space setup of each dwelling, it should be underlined that this was not the case here. It has been found that there are no major changes between some original and changed plans because within the scope of three basic types, the spaces that give their names to the houses, the courtyard, the inner hall (Sofa) and the outer hall (Sündürme) areas are not closed, open or semi-closed spaces, during the process of the change they have the

potential to be redefined according to the needs of the users, but not totally changed; so the plans of the houses preserve its original structure and can ensure its continuity. It can be underlined that this is the process of adaptation actually rather than transformation.

It is clear that change in rural-vernacular housing has often arisen due to new technologies, changing economic social conditions, and needs, desires and preferences related to the new ways of life. In short, residential areas continue to exist by changing to respond to user needs. In each community and geography, this change continues by following different paths and housing areas are formed that bear socio-cultural traces of the community to which it belongs. Being aware of all these and based on the results of this research, it can be said that the change detected in the rural housing space in Cyprus, can hardly be expected to show remarkable differences based on the cultural background of the residence.

Examining how cultures from two different backgrounds express themselves in a spatial order in rural-vernacular housing and what kind of cultural, social, and vital features they add to the space is an important aspect. However, the similarity of new space additions and arrangements arising from rapid modernization, family lifestyle, as well as common needs such as climatic comfort, security, etc., show that the effect of cultural differences in the change of houses is not very significant. At this point, due to the cultural exchange resulting from living together for a long time, it turns out that the spatial usage shaped by the subsequent users develops in line with regional, climatic and vital needs mainly.

In this context, the findings of the study confirm that in the examples of rural-vernacular housing Units Without Hall, it was seen that the most changed housing and the least changed housing examples were the houses belonging to the families who came from Turkey after 1974. In the units with inner hall housing examples, the most changed housing example is the one used by the family who immigrated from South Cyprus in 1974, and the least changed housing example is the housing used by the family who immigrated from Turkey after 1974. Within the scope of the units with outer hall rural-vernacular housing example, the most changed housing example belongs to the family who immigrated from Turkey after 1974 whereas the least changed example of housing is the housing used by the family who immigrated from South Cyprus in 1974. Looking at these findings, once more it is becoming obvious that it is not possible to make generalisations based on the origin of cultural differences.

As a result, it was observed that in terms of space organisation, space connection types and basic functions, there was no sharp spatial pattern and spatial types shaped by two different cultural backgrounds in line with their own needs in Büyükkonuk village. It is also not possible to talk about different sets of rules, certain tendencies or, in other words, certain sub-genotypes that differ according to the cultural origin of the user. In this case, two conclusions can be derived:

Firstly, I observed that the open, semi-open or closed multi-functional spaces of rural-vernacular houses can easily adapt to different lifestyles, daily habits, and cultural routines. For example, a user who opens his prayer rug and prays in the kitchen or living room during the day, and a different user who traditionally bakes 'pitta' (bread from Cyprus) or 'bazlama' (bread from the Adana region) uses the same place. They are in spatial relations and this does not have a visible effect on spatial relations.

Moreover, the construction of the local house, which emerged with the approach of adapting to environmental/climatic data, with local materials, spatial organization, modularity, and the notions such as the direction of the sun, solar control, cross breeze, etc. enable it to easily adapt to the requirements arising from cultural differences. So, the differences in cultural backgrounds are not very readable.

Secondly, it can be concluded that cultural differences change over time, possibly due to acculturation, or due to the unifying effect of the age of globalization and communication, especially being in the same context or environment.

I would also like to point out that one of the most important changes I have observed in Büyükkonuk village recently is the plastering of the exterior of the houses in parallel with the spatial changes made in the house. The facades, which preserve their original texture in the first changes made in line with the need, lose their original texture over time. In this context, I can say the following: One of the most important reasons for the spatial change of rural-regional residences, which have undergone changes in the research, is economic power. As the economic power of the user increases, the changes in rural-regional residences also increase. These advanced decisions taken by the residential user disrupt the original structure and identity of rural-vernacular houses. Definitely, in the absence of technology, it is the most natural right given to them to live with their value, and to preserve their original structure and identity. In this case, it is seen that two different cultural lives are actually not effective in spatial change, but economic power is more dominant. Users may have individual cultural habits and differences, but this is not a strong factor in spatial change.

As a result, it was observed that there was no sharp spatial pattern and spatial types shaped by two different cultures in line with their own needs in Büyükkonuk village. It is also not possible to talk about different sets of rules, certain tendencies or, in other words, certain sub-genotypes that differ according to the cultural origin of the user. In this case, we can say that cultural differences change over time, possibly becoming the same as the unifying effect of the age of globalization and communication, especially being in the same context or environment. However, this study is the identification of a situation that arises in a certain time frame and environmental context and is ready to support subsequent research. The Cypriot rural-vernacular dwelling should probably be examined on an even larger scale and in different parts of the island based on the findings obtained within the scope of this study and it should be aimed to investigate new genotypes.

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APPENDICES

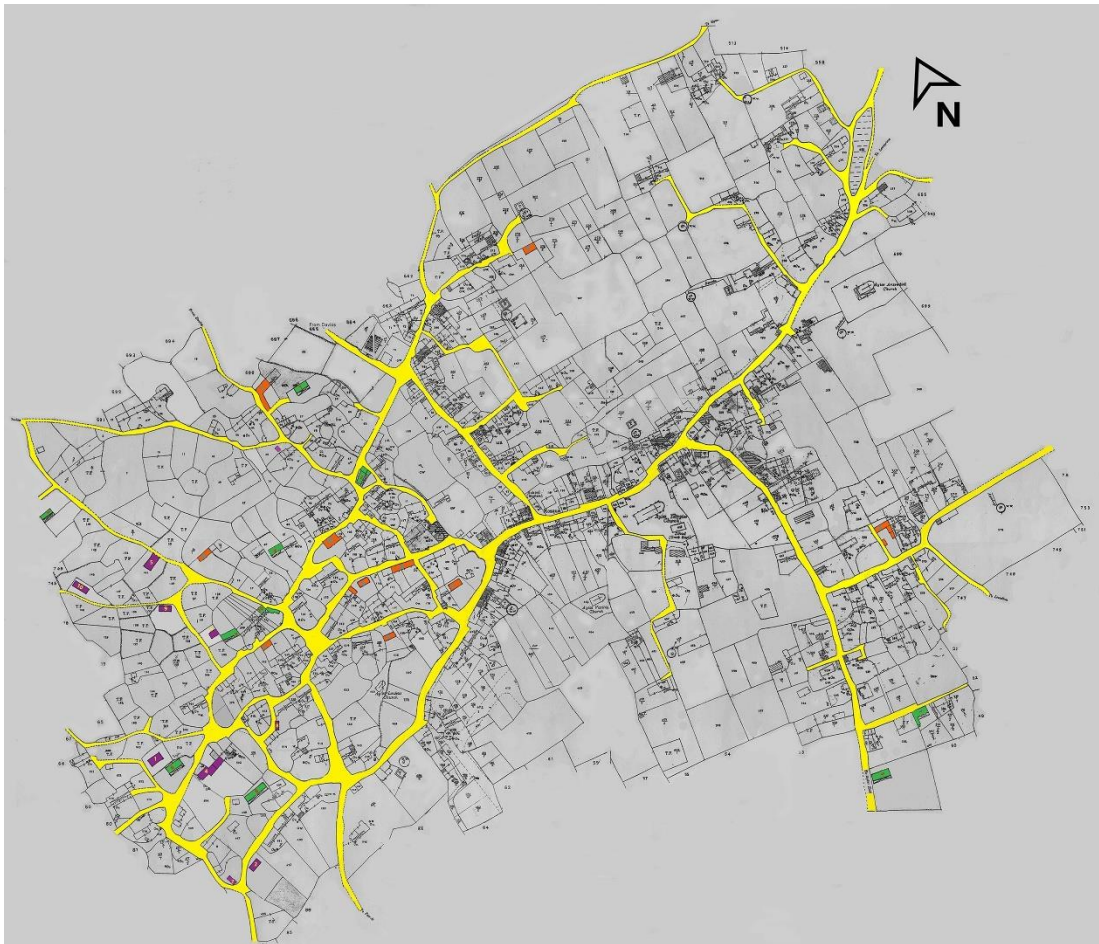
Appendix A: Map Showing Rural-Vernacular Houses From the Büyükkonuk Village

Legend:

Purple colour: Samples of Units Without Hall (UWH),


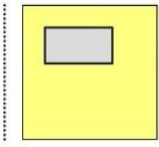
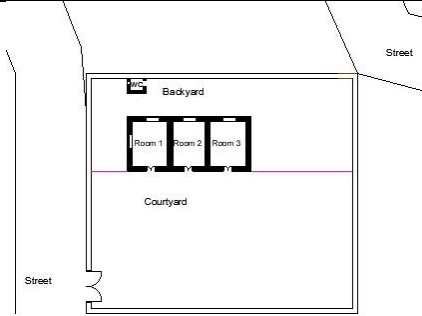
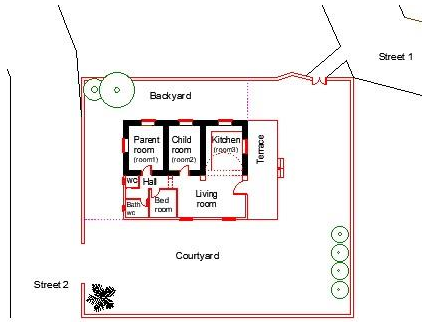
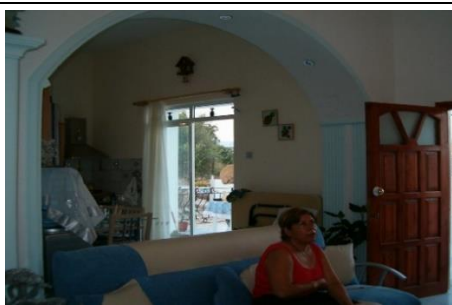



Orange colour: Samples of Units With Inner Hall (UIH),

Green colour: Samples of Units With Outer Hall (UOH).


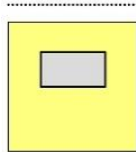
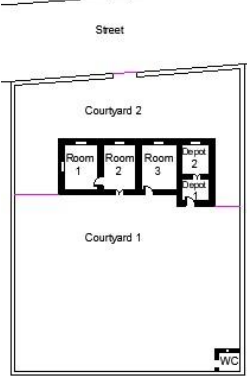
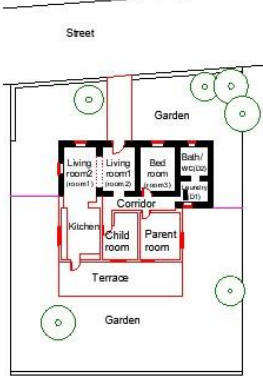






Appendix B: Inventory Charts for Units Without Hall


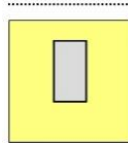
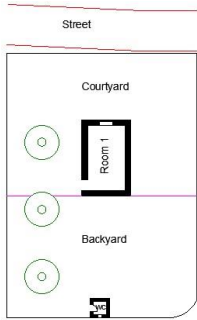
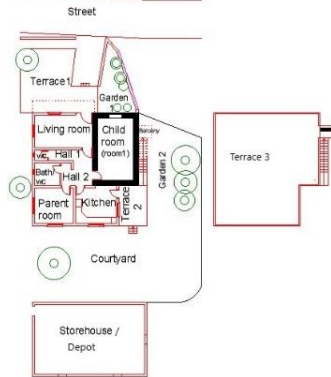




UWH-1

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 2
Natural stone	Married couple:
Roof cover:	Child:-
Wooden rafter and tile	Nationality: TRNC
	Region of origin: 1974 Southern (Paphos/Baf) immigrant
Location of the plot in the village/ No:1	Location of the house in the plot
	Four sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements: Toilet, kitchen wall, garden wall	Number of spaces: 12 (without street) Added spaces / elements: Terrace, living room, hall, bedroom, toilet, window, door
Interior and exterior images after the change	
	
	

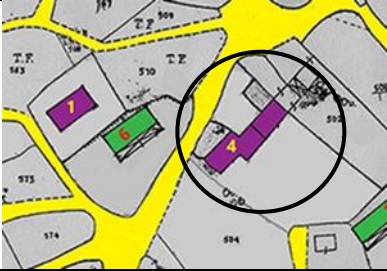
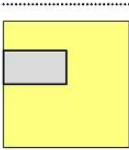
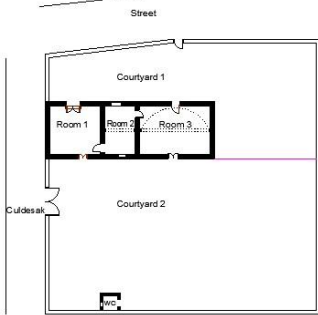
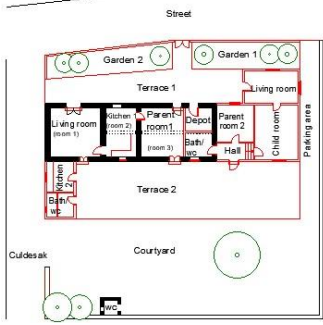




UWH-2

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone and adobe	Number of users: 2 Married couple:
Roof cover: Wooden rafter and tile	Child: - Nationality: TRNC+TR Region of origin: The family came from Adana (Kozan), Turkey after 1974
Location of the plot in the village/ No:2	Location of the house in the plot
	Four sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet, room1 wall, garden walls	Number of spaces: 12 (without street) Added spaces / elements: Parent room, child room, kitchen, corridor, terrace, window, door
Interior and exterior images after the change	
	
	


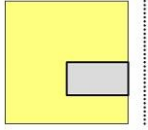
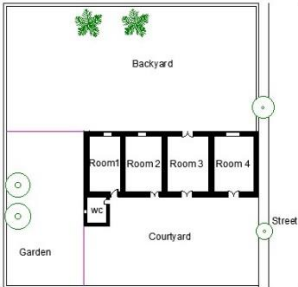
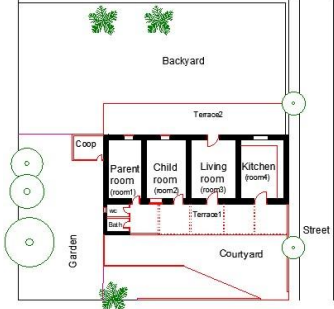




UWH-3

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 5
Natural stone	Married couple: 2
Roof cover:	Child: 3
Flat concrete	Nationality: TRNC+TR
	Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Location of the plot in the village/ No:3	Location of the house in the plot
	Four sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 4 (without street) Destroyed places / elements: Toilet	Number of spaces: 16 (without street) Added spaces / elements: Terrace1, terrace2, terrace3, balcony, garden1, garden2, dept livingroom, hall1, hall2, kitchen, toilet, parent
Interior and exterior images after the change	
	
	


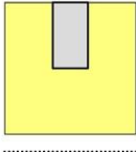
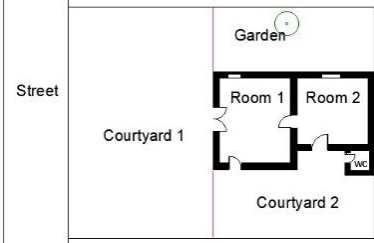
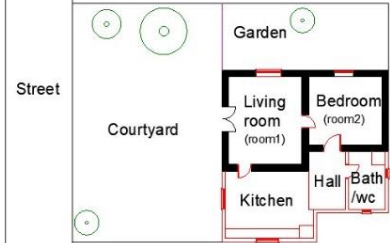
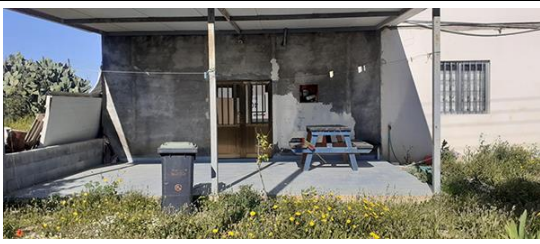


UWH-4

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone and adobe	Number of users: 4 (5 more users coming in summer)
Roof cover: Wooden rafter and tile	Married couple: 2 Child: 2 Nationality: TRNC
	Region of origin: 1974 Southern (Paphos/Baf) immigrant
Location of the plot in the village/ No:4	Location of the house in the plot
	Three sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without streets) Destroyed places / elements: Garden walls	Number of spaces: 18 (without streets) Added spaces / elements: Terrace1, terrace2, garden1, garden2, livingroom2, parent room2, hall, bathroom/wc, child room, kitchen2, hall
Interior and exterior images after the change	
	
	


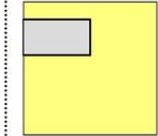
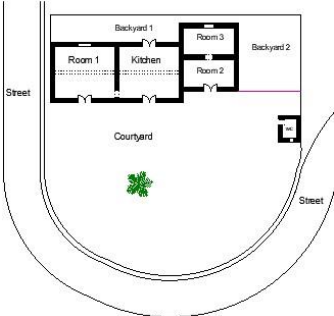
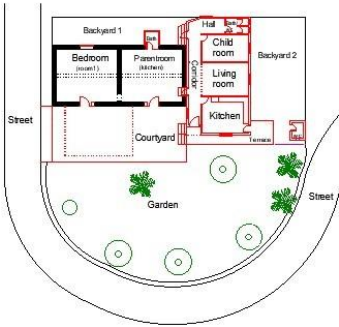




UWH-5

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 5 Married couple: 2 Child: 3 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:5	Location of the house in the plot
	Three sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 13 (without street) Added spaces / elements: Terrace1, terrace2, bath, toilet, coop, window, door
Interior and exterior images after the change	
	
	


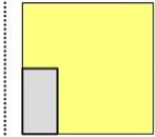
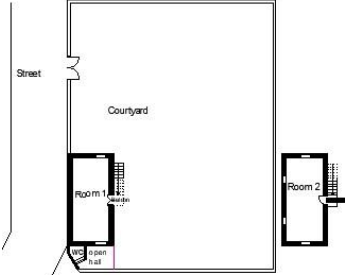
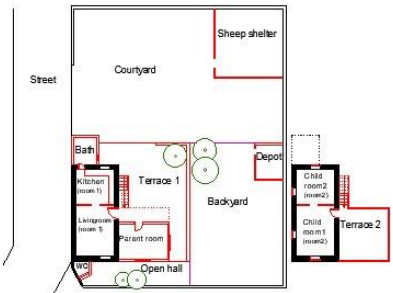




UWH-6

Housing Information	
Information about the original house	Information about the current user
Building materials: Adobe structure	Number of users: 3 Married couple: 2 Child: 1
Roof cover: Wooden rafter and tile	Nationality: TRNC+TR Region of origin: The family came from Adana (Ceyhan), Turkey after 1974
Location of the plot in the village/ No:6	Location of the house in the plot
	Three sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements: Toilet,	Number of spaces: 7 (without street) Added spaces / elements: Kitchen, hall, bath/wc, window, door
Interior and exterior images after the change	
	
	


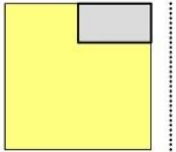
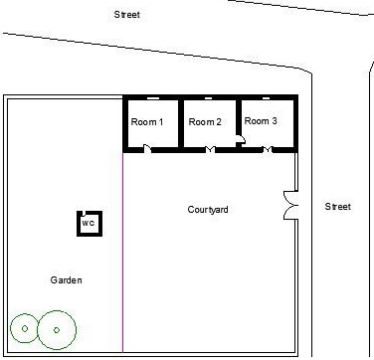
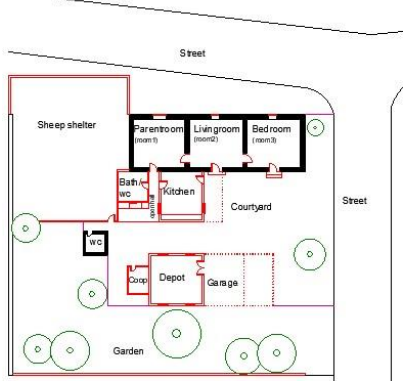




UWH-7

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 4
Natural stone	Married couple: 2
Roof cover:	Child: 2
Wooden rafter and tile	Nationality: TRNC+TR
	Region of origin: The family came from Adana (Gürümze), Turkey after 1974
Location of the plot in the village/ No:7	Location of the house in the plot
	Three sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Room2, room3, toilet,	Number of spaces: 16 (without street) Added spaces / elements: Livingroom, kitchen, child room, corridor, hall, bath, bath/toilet, toilet, window, door
Interior and exterior images after the change	
	
	

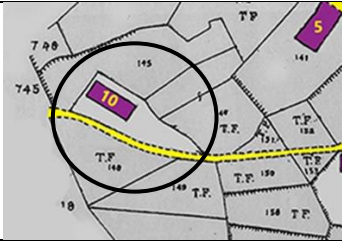
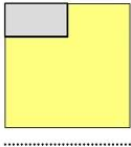
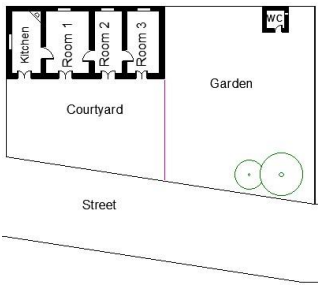
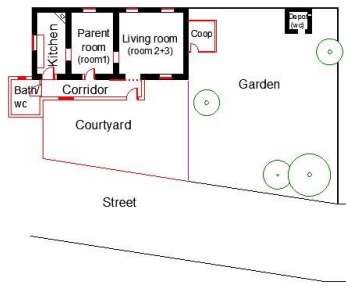




UWH-8

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe	Number of users: 5 Married couple: 2 Child: 3 Nationality: TRNC+TR Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:8	Location of the house in the plot
	Two sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements: Toilet,	Number of spaces: 14 (without street) Added spaces / elements: Terrace1, bath, terrace2, parent room, open hall, toilet, window, door, sheep shelter, partition wall
Interior and exterior images after the change	
	
	

UWH-9


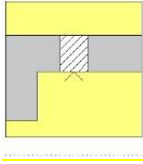
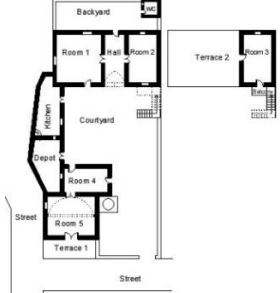





Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC+TR Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:9	Location of the house in the plot
	Two sides open, Perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements:	Number of spaces: 13 (without street) Added spaces / elements: Kitchen, open hall, garage, depot, coop, bath/wc, sheep shelter
Interior and exterior images after the change	
	
	

UWH-10


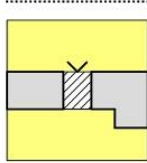
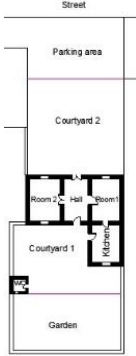
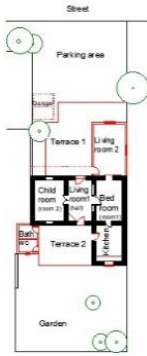




Housing Information	
Information about the original house	Information about the current user
Building materials: Adobe structure	Number of users: 5 Married couple: 2 Child: 3
Roof cover: Wooden rafter and tile	Nationality: TRNC+TR Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Location of the plot in the village/ No:10	Location of the house in the plot
	Two sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 7 (without street) Destroyed places / elements: Wall dividing room 2 and room 3	Number of spaces: 9 (without street) Added spaces / elements: Corridor, bath/wc, coop, door, window
Interior and exterior images after the change	
	
	

Appendix C: Inventory Charts for Units with Inner Hall


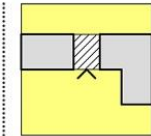
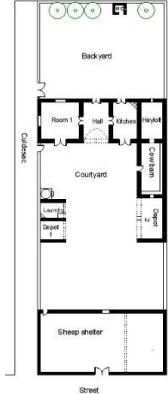
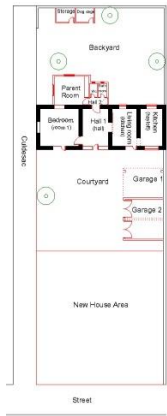




UIH-1

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 5
Natural stone + adobe structure	Married couple: 2
Roof cover:	Child: 3
Wooden rafter and tile	Nationality: TRNC+TR
	Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Location of the plot in the village/ No:1	Location of the house in the plot
	Two sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 14 (without street) Destroyed places / elements: Stairs, room4 wall	Number of spaces: 16 (without street) Added spaces / elements: Terrace2, bath/wc, laundry, stairs, door
Interior and exterior images after the change	
	
	


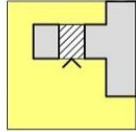
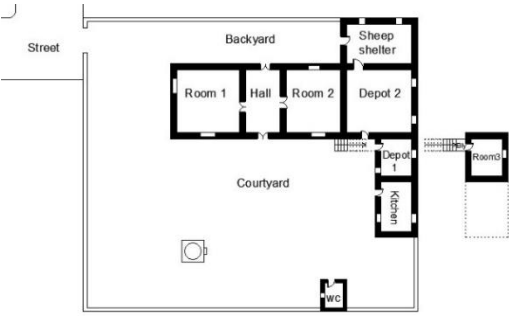
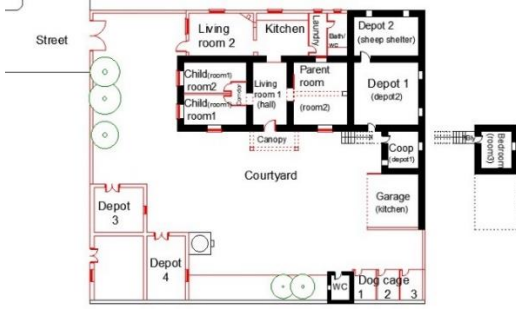




UIH-2

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe structure	Number of users: 4 Married couple: 2 (the man is deceased) Child: 3 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:2	Location of the house in the plot
	Two sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 9 (without street) Destroyed places / elements: Toilet, garden walls	Number of spaces: 12 (without street) Added spaces / elements: Terrace1, terrace2, living room, bath, toilet, door, window
Interior and exterior images after the change	
	
	


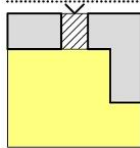
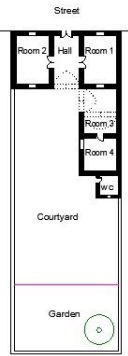
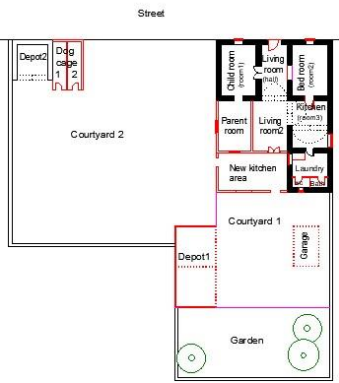




UIH-3

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 2 Married couple: Child: Married daughter lives in her own house Nationality: TRNC Region of origin: Family living in the village before 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:3	Location of the house in the plot
	Two sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 12 (without street) Destroyed places / elements: Laundry, depot1, depot2, cow barn, sheep shelter, toilet	Number of spaces: 15 (without street) Added spaces / elements: Parent room, bathroom, garage1, garage2, toilet, depot, dog cage, window, door
Interior and exterior images after the change	
	
	


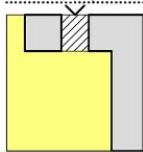

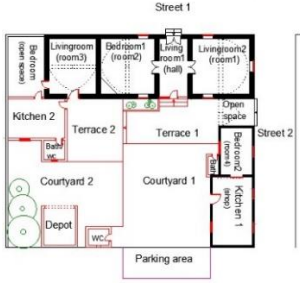




UIH-4

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone and adobe	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC Region of origin: 1974 Southern (Paphos/Baf) immigrant
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:4	Location of the house in the plot
	Two sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 12 (without street) Destroyed places / elements: Kitchen wall, Garden wall	Number of spaces: 23 (without street) Added spaces / elements: Livingroom2, kitchen, Bathroom/wc, laundry, depot3, depot4, garage, door, window
Interior and exterior images after the change	
	
	

UIH-5

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 4 Married couple: 2 (the man is deceased) The woman lives with her son, daughter-in-law, and grandson. Child: 1 Nationality: TRNC Region of origin: 1974 Southern (Paphos/Baf) immigrant
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:5	Location of the house in the plot
	Three sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 18 (without street) Added spaces / elements: Parent room, living room, laundry, depot1, depot2, toilet, bathroom, garage, dog cage1, dog cage2
Interior and exterior images after the change	
	
	


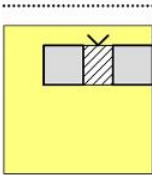
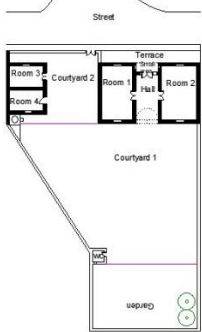
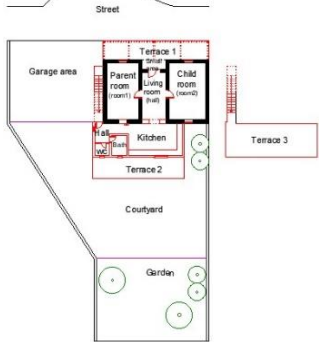

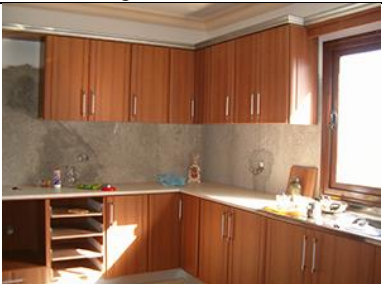


UIH-6

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC+TR Region of origin: The family came from Adana (Ceyhan), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:6	Location of the house in the plot
	Three sides closed, parallel and perpendicular. 
Original plan organization	Changed plan organization
	
Number of spaces: 11 (without street) Destroyed places / elements: Toilet	Number of spaces: 18 (without street) Added spaces / elements: Kitchen, bath/wc, terrace1, terrace2, dept, toilet, bedroom, bathroom, door, window
Interior and exterior images after the change	
	
	


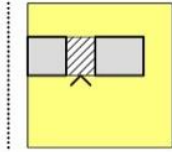
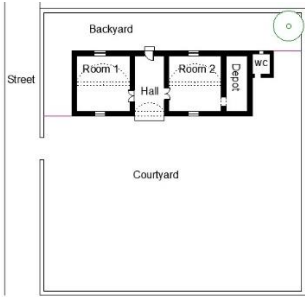
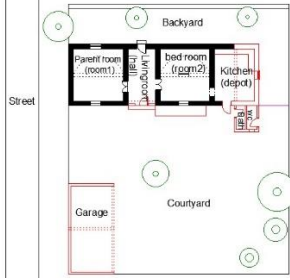




UIH-7

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 6
Natural stone	Married couple: 2
Roof cover:	Child: 4
Wooden rafter and tile	Nationality: TRNC
	Region of origin: 1974 Southern (Paphos/Baf) immigrant
Location of the plot in the village/ No:7	Location of the house in the plot
	Three sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 17 (without street) Added spaces / elements: Terrace1, terrace2, balcony, garage, corridor1, corridor2, child room1, child room2, parent room, service space, laundry, bath/wc, window, door
Interior and exterior images after the change	
	
	


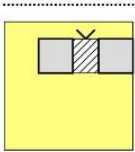
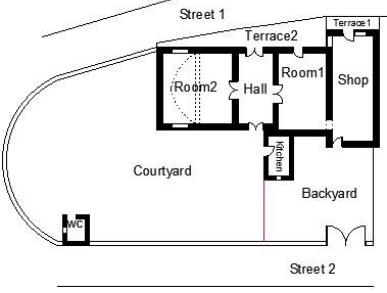



UIH-8

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone and adobe	Number of users: 5 Married couple: 2 Child: 3 Nationality: TRNC+TR Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:8	
	Location of the house in the plot Three sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 11 (without street) Destroyed places / elements: Room3, room4, toilet, garden wall	Number of spaces: 14 (without street) Added spaces / elements: Terrace1, terrace2, terrace3, kitchen, bath, wc, hall, window, door
Interior and exterior images after the change	
	
	

UIH-9


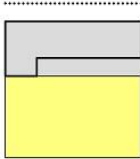
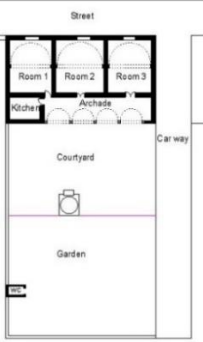
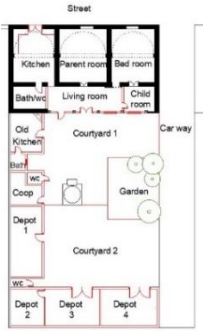




Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 2
Natural stone	Married couple: (old couple)
Roof cover:	Child: Children are married
Flat concrete	Nationality: TRNC+TR
	Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Location of the plot in the village/ No:9	Location of the house in the plot
	Three sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 7 (without street) Destroyed places / elements: Depot, toilet, garden wall	Number of spaces: 9 (without street) Added spaces / elements: Kitchen, garage, bath, toilet
Interior and exterior images after the change	
	
	

UIH-10


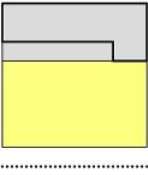
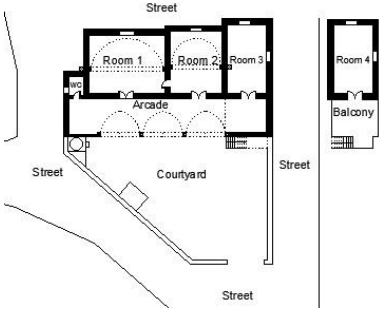
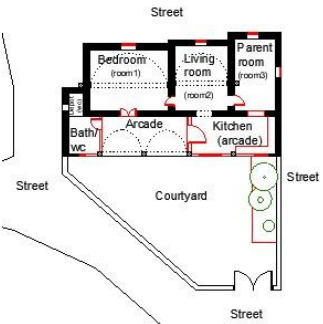




Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 1 Married couple: 2 (the man is deceased) Child: Her kid is coming for the weekend Nationality: TRNC Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:10	
	Location of the house in the plot Three sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 11 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 15 (without street) Added spaces / elements: Bedroom, depot1, depot2, depot3, terrace3, toilet, door, window
Interior and exterior images after the change	
	
	

Appendix D: Inventory Charts for Units with Outer Hall

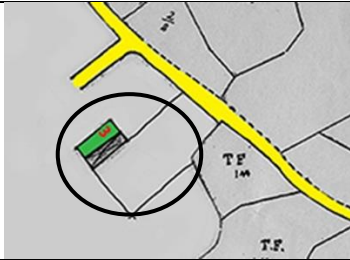
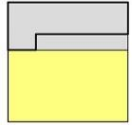






UOH-1

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 4
Natural stone + adobe structure	Married couple: 2 (the man is deceased)
Roof cover:	Child: The woman lives with her daughter, son-in-law, and grandson
Wooden rafter and tile	Nationality: TRNC
	Region of origin: Family living in the village before 1974
Location of the plot in the village/ No:1	Location of the house in the plot
	Three sides closed, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 6 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 12 (without street) Added spaces / elements: Livingroom, child room, old kitchen, depot1, depot2, depot3, depot4, bath/wc, coop, toilet, garden, window
Interior and exterior images after the change	
	
	


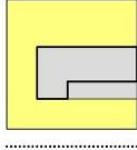
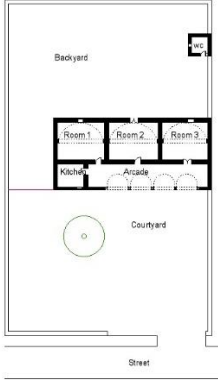





UOH-2

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe	Number of users: 3 Married couple: 2 Child: 1 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:2	Location of the house in the plot
	Three sides closed, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Room 4, balcony wall,	Number of spaces: 8 (without street) Added spaces / elements: Kitchen, door, window, bath/wc
Interior and exterior images after the change	
	
	


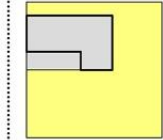
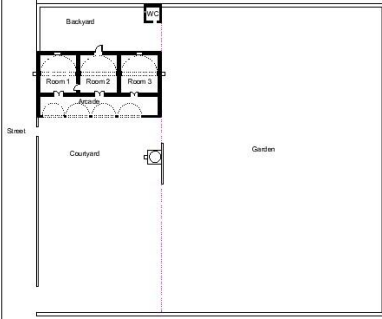
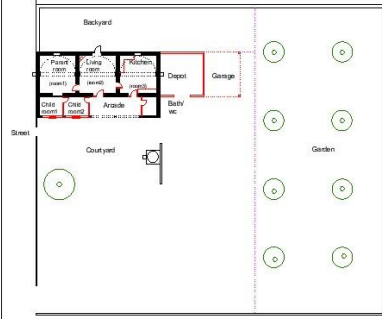




UOH-3

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 2 Married couple: (old couple) Child: Kids are married Nationality: TRNC Region of origin: 1974 Southern (Baf) immigrant
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:3	Location of the house in the plot
	Three sides closed, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 13 (without street) Added spaces / elements: Terrace, hall2, bath, toilet,
Interior and exterior images after the change	
	
	

UOH-4

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 5 Married couple: 2 Child: 3 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:4	Location of the house in the plot
	Three sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 9 (without street) Destroyed places / elements: Toilet	Number of spaces: 13 (without street) Added spaces / elements: Hall, bath, toilet, depot
Interior and exterior images after the change	
	
	


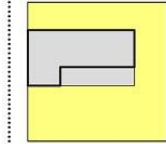
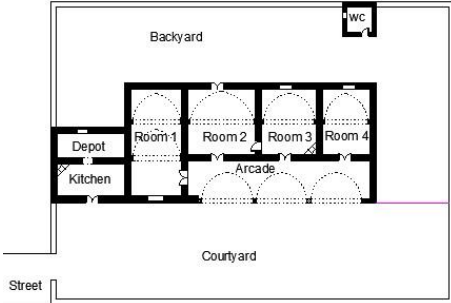
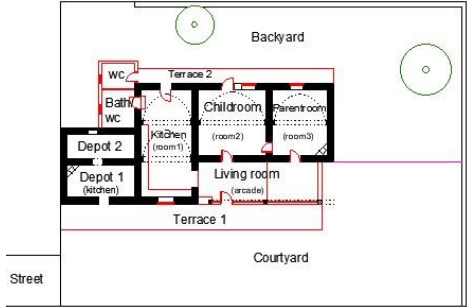



UOH-5

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe structure	Number of users: 7 Married couple: 2 Child: 5 Nationality: TRNC Region of origin: Family living in the village before 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:5	Location of the house in the plot
	Three sides open, perpendicular to the street 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet	Number of spaces: 12 (without street) Added spaces / elements: Child room1, child room2, bath/wc, door, window, depot, garage
Interior and exterior images after the change	
	
	


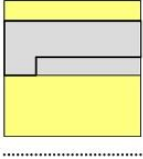
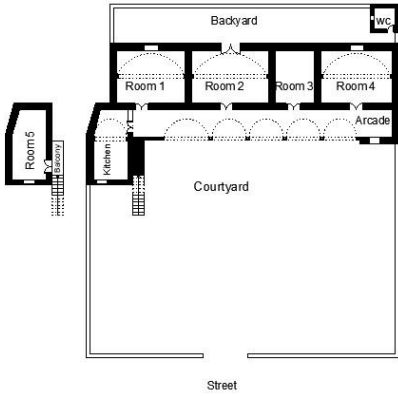
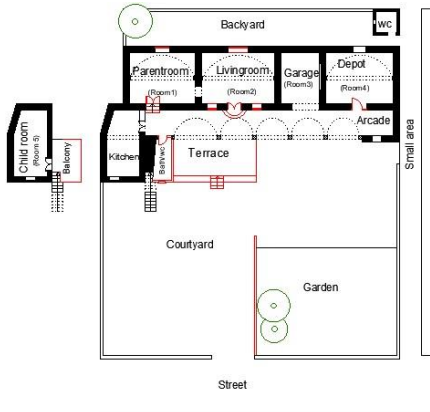




UOH-6

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC Region of origin: 1974 Southern (Paphos/Baf) immigrant
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:6	Location of the house in the plot
	Three sides open, perpendicular to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 12 (without street) Destroyed places / elements: Toilet	Number of spaces: 18 (without street) Added spaces / elements: Terrace, Livingroom, child room, bedroom2, door, window, garage, coop
Interior and exterior images after the change	
	
	


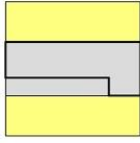
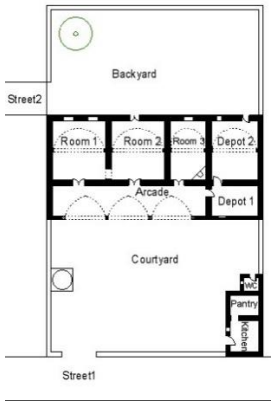
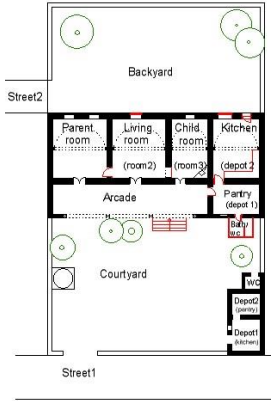




UOH-7

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone + adobe structure	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:7	Location of the house in the plot
	Three sides open, perpendicular to the street 
Original plan organization	Changed plan organization
	
Number of spaces: 10 (without street) Destroyed places / elements: Toilet, garden wall	Number of spaces: 12 Added spaces / elements: Terrace1, terrace2 Livingroom, bath/wc, toilet, window, door
Interior and exterior images after the change	
	
	


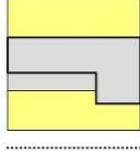
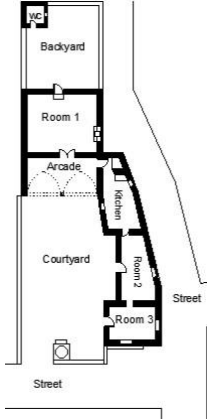
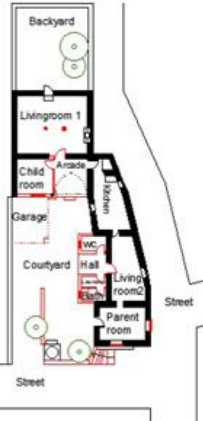
UOH-8

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 3 Married couple: 2 Child: 1 Nationality: TRNC Region of origin: 1974 Southern (Paphos/Baf) immigrant
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:8	
	Location of the house in the plot Two sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 11 (without street) Destroyed places / elements: Garden wall	Number of spaces: 15 (without street) Added spaces / elements: Terrace, bath/wc, balcony, door, window
Interior and exterior images after the change	
	
	

UOH-9

Housing Information	
Information about the original house	Information about the current user
Building materials:	Number of users: 5
Natural stone	Married couple: 2
Roof cover:	Child: 3
Wooden rafter and tile	Nationality: TRNC+TR
	Region of origin: The family came from Adana (Süphantere), Turkey after 1974
Location of the plot in the village/ No:9	Location of the house in the plot
	Two sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 11 (without street) Destroyed places / elements:	Number of spaces: 12 (without street) Added spaces / elements: Bath/wc, stairs, window, door
Interior and exterior images after the change	
	
	

UOH-10

Housing Information	
Information about the original house	Information about the current user
Building materials: Natural stone	Number of users: 4 Married couple: 2 Child: 2 Nationality: TRNC+TR Region of origin: The family came from Adana (Mansurlu), Turkey after 1974
Roof cover: Wooden rafter and tile	
Location of the plot in the village/ No:10	
	Location of the house in the plot Two sides open, parallel to the street. 
Original plan organization	Changed plan organization
	
Number of spaces: 8 (without street) Destroyed places / elements: Toilet	Number of spaces: 13 (without street) Added spaces / elements: Terrace, child room, laundry, hall, toilet, garage, stairs, door
Interior and exterior images after the change	
