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PATTERNS OF ENVIRONMENTAL COHERENCE IN THE RURAL ARCHITECTURAL TRADITION OF ÜRÜNLÜ (AKSEKİ-İBRADI BASIN)

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Keywords: rural architectural traditions; environmental coherence; environmental aesthetics; environmental representation; tectonic syntax; pattern language; tectonic joint; organic interface; environmental armature; Ürünlü; Akseki; İbradı.

1. This paper gives an overview of the theoretical question, conceptual framework and the proposed method of the author's Ph.D. Thesis (Kavas, 2009), which received the "2009 Thesis of the Year Award", and is currently evaluated for publication.

INTRODUCTION

The traditional rural settlements, in general, receive less textual study to be used for historical analysis (**1**). The insufficiency of textual evidence regarding the remote rural settings becomes an important problem for the historiography of rural architecture. The material evidence of architecture inevitably becomes the principal source for understanding the historical and cultural context of these settlements. Then, appropriate methods should be proposed in order to account for these architectural traditions through material evidence.

This paper intends to contribute to the general knowledge of the discipline of architectural history with its attempt to propose a research method compatible with rural architectural traditions. From this viewpoint, the basic argument of this paper is that the traditional rural settlements are integral structures exhibiting an environmental coherence between nature and culture. In other words, all spheres of local culture, including the architectural tradition have been congruent with the environment. Then, the architectural elements of this environmental coherence should be identified and explained. In this discussion, a historical settlement of the Akseki-İbradı Basin in southern Anatolia is taken as a case study for the above mentioned methodological proposal. The architectural characteristics of the Akseki-İbradı Basin are investigated by referring to the specific case of Ürünlü.

Ürünlü is taken as a potential example for presenting an alternative approach to the study of rural architectural traditions. Firstly a conceptual framework is set up to account for the integrity of architecture and environment, then a method is proposed for the identification of the architectural patterns which are at the basis of environmental coherence of the traditional rural settlements. In so doing, the absence of textual evidence is substituted by a visual analysis of the material evidence.

Eventually, the conceptual framework and the proposed method are tested in the specific context of Ürünlü by presenting the settlement's characteristic patterns of environmental coherence.

THE CONCEPTUAL FRAMEWORK

Tectonics

For approaching the material evidence of architecture in the historical rural settlements, Kenneth Frampton's (2002, 92) focus on the concept of "tectonics" is of relevant reference. The conceptual basis of "tectonics" can be used to explain the role of the rural architectural tradition in the sustenance of the environmental coherence. In this framework, "tectonics" is taken as the study of architectural form in terms of material and culture. In his discussion of the essence of cultural identity in architecture, Frampton (2002, 92) argues that one must turn to "a material base", and the essence of architecture "must of necessity be embodied in the structural and constructional form." Accordingly, in search for an architectural representation, formulating the embodiment of the cultural content in the construction is inevitable. Frampton, in this respect, focuses on "the structural unit as the irreducible essence of architectural form," which integrates the local materials into culturally-specific combinations and produces an architecturally-composed environmental coherence.

"Tectonics" is concerned with the sectional configuration of the structure as well as the underlying culture. For Frampton (2002, 99), the "irreducible essence of architecture" lies in the "tectonic syntax" which exhibits the "technical transfer of the load passing through a series of appropriately articulated transitions and joints." 'Tectonic syntax', then, discloses the culture-specific rules of combination in the context of locally available materials and technical capabilities. The principal rules of combination are regulated by joints which signify the cultural articulation of load transfer and material combinations. In order to emphasize the significance of the joint, Frampton refers to Semper who argues that the essential unit of 'tectonic syntax' is the 'tectonic joint'. For Semper, 'tectonic joint' is the "primordial tectonic element" and "the fundamental nexus around which building comes into being" (Frampton, 2002, 95).

Environmental Aesthetics

In order to relate the 'tectonic syntax' of a certain rural architectural tradition to the environmental coherence, it is at first necessary to develop a comprehension of the term "environment." The term has acquired a great variety of meanings through its successive usage. The narrowest etymological interpretation of the term is "the region that surrounds something" owing to "the French *en*, in and *viron*, circuit" (**2**). This conventional definition is built upon the primary assumptions for the existence of two distinct and separate entities: "an object and its surroundings," or "a self and its setting" (Berleant, 1997, 29).

Repudiating this conventional conception of "environment," Arnold Berleant (1991, 84) proposes a theoretical shift from "the passivity and separation of the standard theory." As illustrated successfully in the traditional rural settlements, environment is "no foreign territory surrounding the self," because the human habitation is "a contributing and responding part of a dynamic nexus of interpenetrating forces" (Berleant, 1991, 102-3). From this viewpoint, Berleant (1992, 20) regards environment

2. Berleant (1997, 29) refers to the explicit definition of environment by cultural geographers and cultural ecologists. The usual practice regards environment as "the physical surroundings." This definition is based upon the division between people and their surroundings and reflects the attitude of Cartesian dualism. Berleant states that the *Oxford English Dictionary* also gives a conventional definition for the entry 'environment' as "the object or the region surrounding anything."

as a "physical – cultural realm in which people engage in all the activities and responses that compose the weave of human life in its many historical and social patterns." He further argues that environment becomes "a harmonious unity of human contribution and physical location" (Berleant, 1992, 132). In this definition, "environment" is an integral whole merging nature with culture, and the 'tectonic joint' can be considered as the perfect architectural embodiment of this integration; "human contribution" and "physical location" merge into each other through the joint.

Therefore, environmental coherence is architecturally embodied by the 'tectonic joint'. By using this joint system in the construction of his environment, the traditional rural dweller has been in a full sensory involvement with the environmental features. This involvement can be defined, in Berleant's (1991, 91-2) words, as "engaging aesthetically with environment". For Berleant, this kind of an involvement structures "the aesthetic character of experience," where "perceptual engagement" becomes "the catalyzing and unifying force of the aesthetic field" (Berleant, 1991, 91-2). As such, the rural setting becomes an appropriate example where "architecture provides the fundamental bond between the concepts of environment and aesthetics" (Berleant 1992, 146).

Architecture, as such can be seen as a form of the "environment" and it can be regarded as "the design of the built environment rather than of isolated physical structures" (Berleant, 1997, 33). Within this definition, architecture transcends the boundaries of a structure and embraces the topography. Then the investigation of the architectural character of the traditional rural settlements may be regarded as the study of the spatial configurations by which the boundaries of architecture gets blurred and merges into its environment. These continuous configurations suggest an 'environmental armature'(**3**) which structures relationships of contiguous structures as well as 'patterns' of human activity. Then, it is necessary to explain the relations between these physical configurations and traditional patterns of daily life. Next section explains the architectural forms of convergence between the 'environmental armature' and the traditional patterns of rural life.

Pattern Language

The above mentioned conception of 'tectonic syntax' refers to the scale of a "cultural landscape" which involves a characteristic set of geographical, physical and cultural features. The role of rural architectural tradition in the sustenance of the environmental coherence can be explained within this expanded environmental scale. In other words, if the 'tectonic syntax' refers to the kernel of the constructive principle of a characteristic cultural landscape, its manifestations in successive scales can be explained. The traditional 'patterns' of human activity are important constituents of this multileveled explanation.

Christopher Alexander's (1979) definition of "patterns" provides the appropriate tools for the explanation of the congruence between culture and architecture. For Alexander, a 'pattern' signifies a convergence of certain social activity with a spatial configuration. A 'pattern' is, therefore, the intersection of an environmental context, a contextual problem and a culturally-specific solution (Alexander 1979, 253). This abstract definition of 'pattern' makes it possible to conceive it in various scales of the traditional rural settlement. For instance, patterns may relate to an architectural detail, an architectural section of a dwelling, a dwelling cluster, a neighborhood, a district or a settlement in its entirety. In this scope, 'patterns' of

3. The concept of 'armature' is used in different meanings by different fields. In art, it refers to the supporting framework of a sculpture, while in biology, it stands for the protective components of an organism, like the shell of a turtle. In both of these definitions, it refers to a principal supportive framework around which secondary elements are attached. This paper's conception of 'armature' is inspired by William MacDonald's (1986, 252-72) use of the term in his study of Roman Architecture. Although the term is interpreted in a completely different context, the common point is that MacDonald emphasizes the enculturative role of the connective patterns of architecture.

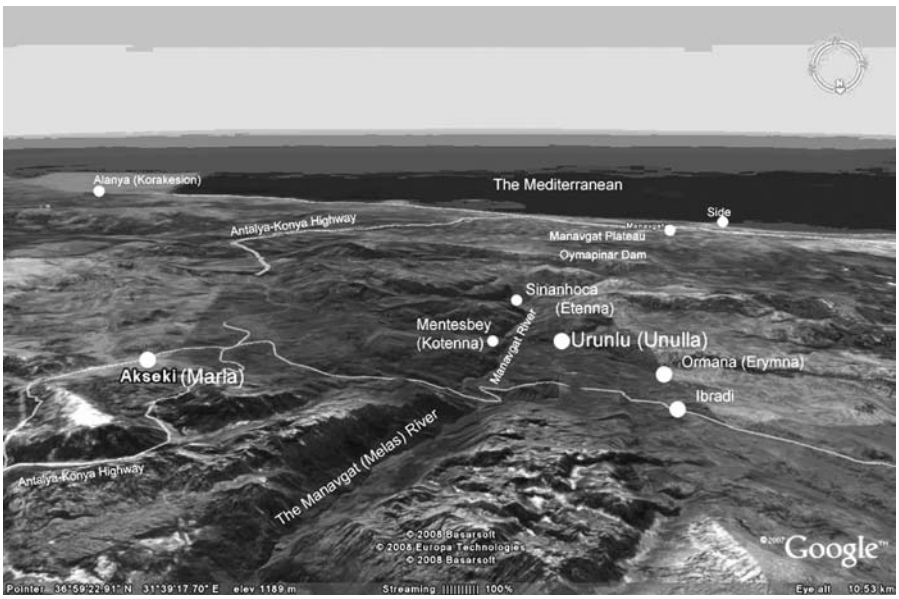

Figure 1. The geographical location of Ürünlü in the Akseki-İbradı Basin and its relations with the coastal settlements of Side, Manavgat and Alanya (Google Earth 2007, image interpreted by the author).

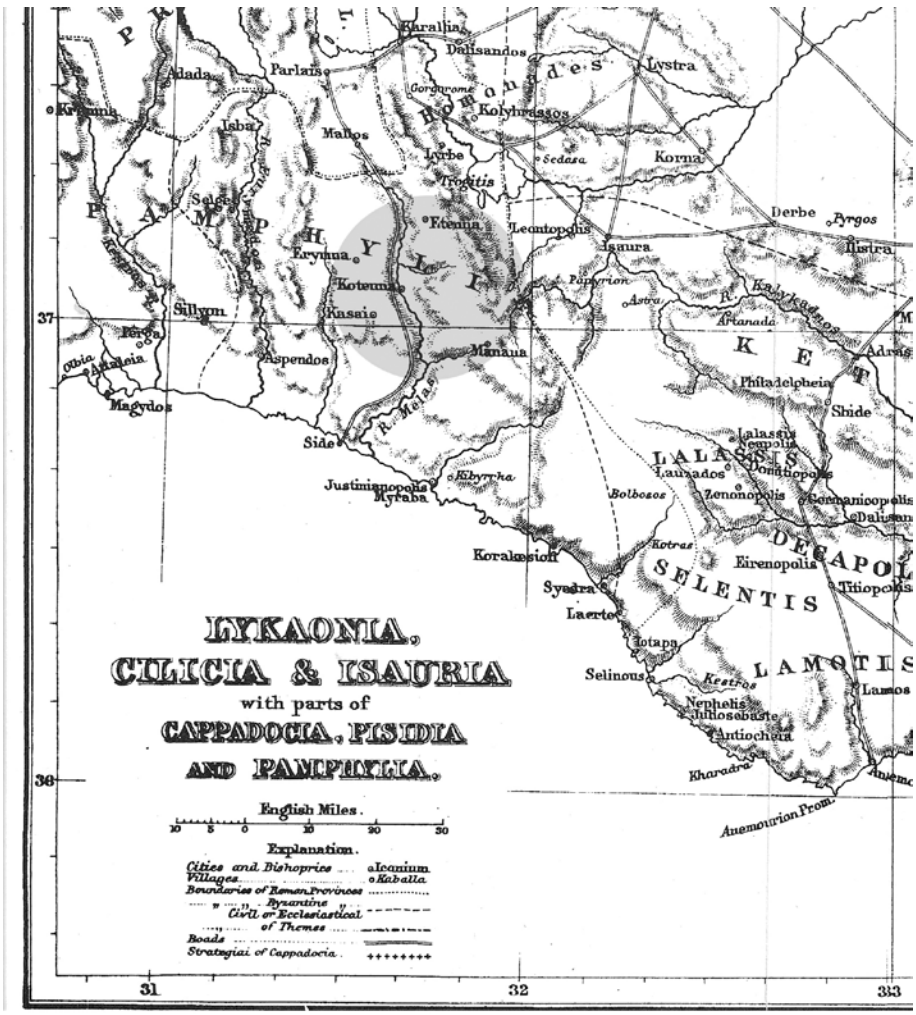

Figure 2. Locations of the ancient settlements of Etenna, Kotenna and Erymna, the Akseki-İbradı Basin and the eastern section of Antalya in an "antique map of Lykaonia, Cilicia and Isaura with parts of Cappadocia, Pisidia and Pamphylia" (Ramsay, 1890 / 1962, 330).

architectural scale become the subsets of a 'pattern' shaping the settlement scale.

Therefore, environmental coherence can be regarded as the product of this continuity among the multileveled 'patterns'. For Alexander (1979, 337), these interrelated 'patterns' structure the distinctive "pattern language" of a cultural tradition. The architectural vocabulary of the "pattern language" becomes comprehensible with an understanding of the distinctive "tectonic syntax" at different scales of the traditional environment.

THE CONTEXT

The Akseki-İbradı Basin has a great significance for the study of the rural architectural traditions in Turkey. The ancient trade route between Iconium (Konya) and Korakesion (Alanya) cuts across the Taurus Mountains through this region. The geographically introverted Akseki-İbradı basin constitutes a transitory zone between the south-western coastal region and the inland territory of Anatolia (**Figure 1**). There is a sharp contrast between the steep and rocky geography of the basin and the broadness of the Manavgat plateau which lies beneath the Taurus Mountains (**4**). Concerning its location, the basin is both a constitutive element of the Mediterranean and a physical transition between contrasting sets of habitation patterns, climates, faunas and floras.

Archeological evidence reveals the historical importance of the region. The present borders of Akseki and İbradı define an intersection of three ancient regions of Asia Minor (Ramsay, 1890 / 1962, 370). Psidia at north, Cilicia at east and Pamphilia at southwest converge around the Akseki-İbradı basin. (Özkaynak, 1954, 23). Etenna (Ivgal-Sinanhoca), Kotenna (Gödene-Menteşbey) and Erymna (Ormana-Ardıçpınarı) are the three archaeologically significant settlements of the region (**Figure 2**). These settlements appear in the ancient maps concerning the region and they are considered as part of Psidia and Lykanoia interchangeably (İşkan and Çevik, 1999, 51). The settlements of the Akseki-İbradı Basin have been physically isolated from the political centers of Anatolia during the course of history. The archaeological evidence indicates that, due to the same reason, the region had never been Hellenized or Romanized into the same extent with the majority of the Asia Minor (**5**).

The Akseki-İbradı Basin is characterized by large mountain masses and narrow canyons and sedimentations lying between them. The ancient river of Melas (Manavgat)(**Figure 2**), which flourishes from this region is an important environmental determinant shaping the settlement patterns. Being connected to a web of underground resources, the river reaches the Mediterranean through the Akseki-İbradı Basin. In this corrugated topography, there are no expansive plateaus appropriate for agricultural activity except for the tiny sedimentation zones occurring between the rocky fragmentations (**6**). Agricultural activity can only be conducted within the Eynif plateau and İbradı-Ormana sedimentation zone. The scarcity of cultivable land has led to the construction of agricultural terraces on the skirts of the surrounding mountains (**Figure 3**). Built up with local rubble stone, the retaining walls of these terraces are important constituents of the architectural character of the region (**Figure 4**).

The settlement of Ürünlü (Unulla) (altitude 850 m) is at the transition between the plain İbradı-Ormana district and the deep and steep canyons descending to Manavgat plateau (**Figure 1**). The geographical transition

4. This contrast exemplifies Fernand Braudel's (2002, 14-5) definition of highland and lowland forms of habitation in the Mediterranean coastline. For Braudel, the Mediterranean people have been limited by the sea and the mountains. In this corrugated geography agriculture has been confined to "a few pockets of arable land" which were mostly situated in narrow coastal strips. Braudel speaks of a "perpetual contrast between lowlanders who remained bound to the soil and aimed for progress" and "highlanders who aimed for survival." Braudel's approach to the ancient Mediterranean emphasizes the significance of environmental features like geographical and climatic conditions on the shaping of history.

5. This quality of the region during the Roman period is emphasized by İşkan and Çevik (1999, 51). W.M. Ramsay's (1962, 24) general comments on the characteristics of Roman administration in Asia Minor, especially circa 4th century AD, also give an idea about the possible socio-cultural context of the Akseki-İbradı Basin during the Roman period. Ramsay argues that the Roman conquest was not "real", because "Romans governed Asia Minor …with their marvellous governing talent, they knew how to adapt their administration to the people of the plateau...." Ramsay states that "Latin and Greek were the languages of the government, of the educated classes, and of polite society" but "the real state of the country was very different: Greek was not the popular language of the plateau even in the third century after Christ: the mass of the people spoke Lycaonian, and Galatian, and Phrygian, although those who wrote books wrote Greek, and those who governed spoke Latin." Additionally, "the people continued to believe in their own religion: their gods were identified by the educated persons with the gods of Greece and Rome, and called by Greek names; but they had none of the Greek or Roman character, they were Asiatic deities...." In the light of this argument, it can be inferred that a geographically secluded region such as the Akseki-İbradı Basin retained its local culture into a considerable extent.

6. Enhoş (1974, 21) states that, in spite of this, there are high plateaus between the Manavgat River and *Yarpuz* Mountian. The *Geyran* Plateau (the north and east of *Sadıklar*) and *Güzelsu* Plateau (the south of *Sadıklar*) are the primary ones. The villages of *Taşlıca, Sadıklar, Güzelsu, Cemerler, Aşağıaşıklar, Erenyaka* and *Mahmutlar* use these plateaus for grazing their animals. These high plateaus are not cultivable except for *Alavada* and *Çaltılıalan*. The only plain and cultivable areas are the tiny sedimentation plateaus occurring between the rocky fragmentations. Enhoş (1974, 21) states that the largest of these cultivable areas are called *alan*, the smaller ones are called *yazı*, and the smallest ones are called *meydan* or *önü*. The largest sedimentation plateau of this zone is "the *alan* of Akseki" with 8-10 km. diameter. "The *yazı* of *Çimi*" is a quarter of "the Akseki *alan*". Another good example for this geo-morphological phenomenon is the the *meydan* of *Emiraşıklar*. Every village had an *alan* or *yazı* surrounded by mountains. In some situations, these places may be shared by other villages.

Figure 3. Agricultural terraces structuring the spatial quality of environment: the vicinity of İbradı (photo by K.R. Kavas).

Figure 4. The continuity between the natural form (foreground) and architectural composition (background) as the sustainer of environmental coherence (Ürünlü) (photo by K.R. Kavas).

7. The official registration of several traditional dwellings in Akseki was made by the Conservation Council of Antalya responsible for Cultural and Natural Heritage in the Ministry of Culture on September 11, 1998. (Decree no: 3958) The inventories of registration were approved in August 17, 2000 (Decree no: 4697) The registration covers 49 dwellings, the building of the local administration (*kaymakamlık*) the Central Mosque and the memorial of Atatürk. The Roman temple and other archaeological remains are registered as 1st level archaeological site and the 59 traditional dwellings in the town centre are registered as urban site in Cevizli (August 29, 2002 / Decree no: 5588).

However, there are more traditional dwellings which deserve to be identified and registered as cultural values. The traditional structures are products of refined craftsmanship. Since 1998 they are under preservation owing to the efforts of the Municipalities of Akseki and İbradı and the Çekül Foundation. Recently, the growing consciousness regarding the value of this cultural heritage made it possible to realize summer practices and conservation projects.

where Ürünlü is situated was also a transition between antique Pisidia, Pamphilia and Cilicia (**Figure 2**). The foundation date of the settlement is obscure. However, it is estimated that Ürünlü dates back at least to the Roman period, with reference to the archaeological evidence around İbradı, located 9 km at north. Ürünlü is situated at the southwestern edge of the Akseki-İbradı Basin, about 50 km north of the Manavgat waterfalls (**Figure 1**). Owing to the relative abundance of arable land, a softer micro-climate with a Mediterranean character and a relatively low altitude, the dwellers of Ürünlü have had the opportunity to live on agricultural production. In all these respects, but foremost due to its geographical location, Ürünlü has been an exceptional rural settlement.

ARCHITECTURAL CHARACTERISTICS OF THE AKSEKİ-İBRADI BASIN

Throughout history, the characteristic geographical features of the region have shaped various cultural aspects such as economic structure, traditional architecture and settlement patterns. The region is quite rich in terms of architectural evidence exemplifying traditional and characteristic building practice (**7**)(**Figure 5**). Due to the scarcity of written sources, architecture becomes the major source for understanding the historical and cultural context of the region. Today, the architectural tradition that was in use for centuries is no longer practiced; due to the introduction of contemporary building materials and techniques, the original architectural context of the Akseki-İbradı Basin is undergoing a process of degeneration. This historical change which exhibits the use of contemporary materials has occurred especially during the last three decades (**Figure 6**).

Figure 5. The characteristic architecture of the Akseki-İbradı Basin (Ürünlü) (photo by K.R. Kavas).

Figure 6. The incongruity between the architectural tradition and current architectural practice (Ürünlü) (photo by K.R. Kavas).

Starting especially from the 1960s, migration has become a social reality as the region did not undergo any considerable economical development. This situation had a more profound effect for the highlander villages than on the historical administrative centers such as Akseki and İbradı. On the other hand, while serious urban degeneration can be documented in the centers such as Akseki and İbradı, the traditional built environment of the rural settlements such as Ürünlü are much more preserved. The population decrease in the villages has become an advantage for the preservation of the architectural heritage, since several abandoned settlements are not encroached by contemporary building activity. The rural settlement of Ürünlü, in this context, exhibits a high level of originality. (**Figure 7**). The current building practice in Ürünlü is marked by a general break with rural traditions (**Figure 6**), but the destruction of the traditional built environment is to a very limited extent. The traditional agriculture-based activity patterns still persist within the handed down architectural heritage.

The traditional architecture of the Akseki-İbradı Basin is successfully exemplified by the rural settlement of Ürünlü, where, even those architectural examples which are not in good physical conditions present a strong sense of the environmental coherence (**Figure 4**). The architectural evidence illustrates the adaptation of the materials available within the immediate environment to the physical context. The architectural heritage of Ürünlü, in this sense, represents a continuous spatial structure of the "environmental character" and not an inventory of isolated individual structures. The production of this continuous structure, which is integrated to the local topography, is based upon the characteristic joint (**Figure 8**). The environmental character of the traditional rural architecture of Ürünlü is condensed in the "joint" through which local timber and stone are bonded to each other.

At Ürünlü, the environment acquires a characteristic spatiality embedded in nature and culture (**Figure 4**). Spatiality of the environment is fabricated through successive scales by the quintessential architectural joint which incorporates local timber and stone into a characteristic bond. The physical dimension of the cultural landscape depends upon this underlying

Figure 7. The view of the Belen District of Ürünlü from southwest. In general, Ürünlü retains its architectural characteristics (photo by K.R. Kavas).

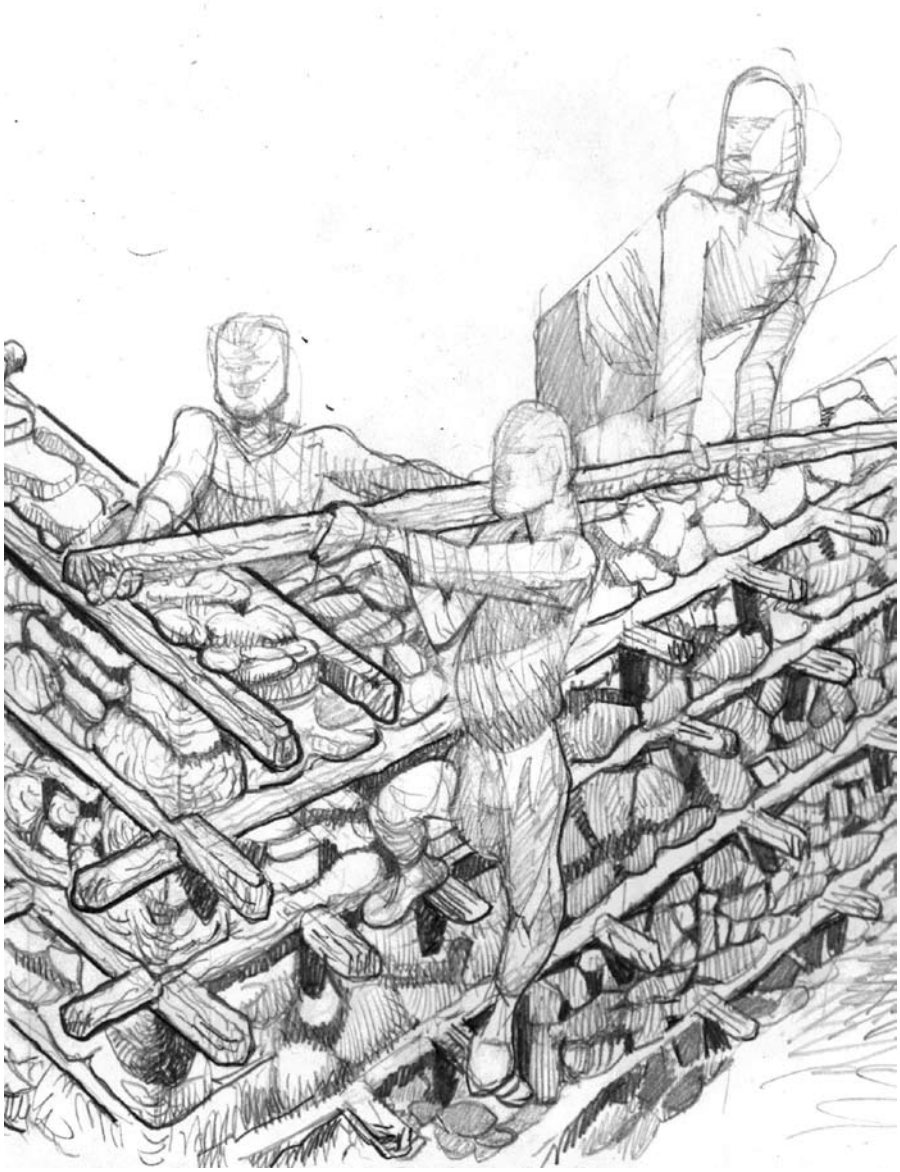

Figure 8. The rural dweller's bodily engagement into the traditional construction process (drawing by K.R. Kavas).

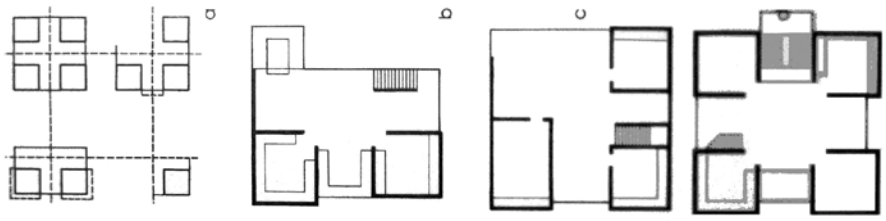

Figure 9. Typological analysis focusing on planimetric relationships (Kuban,1995, 105).

architectural detail representing the continuity between man and the environment (**Figure 8**). This constructional principle is the basis of the environmental coherence in the traditional environment. Sharing the same constructional principle, the retaining walls of the rural setting create a background for the masonry walls of the dwellings. The assembly of masonry walls in a given settlement in turn may become a component

of an agricultural platform or a dwelling (**Figure 3, 5**). In this respect, architectural production embraces not only the dwellings but also the terraced landscape engaged with agricultural production.

Environmental coherence, in this respect, should be analyzed within a multi-scaled overview of the rural architectural tradition. As the principal sustainer of the environmental coherence in Ürünlü, the rural architectural tradition is the physical expression of the integrity between climate, topography, limited natural resources, architectural morphology and all spheres of local culture. This integrity can be traced in successive scales ranging from architectural detail to settlement pattern. In order to understand the architectural dimension of the environmental coherence, it is necessary to investigate the role of architecture in the continuity between successive scales of the settlement.

The investigation of the role of architecture in the sustenance of environmental coherence is tightly related with the materials and technique of construction. In this respect, throughout the region, the presence of wide cedar forests and an abundance of rubble stone have been essential historical and environmental facts (**8**). Cedar is locally called *katran* in the Akseki-İbradı Basin. *Katran* is one of the basic traditional construction materials together with rubble stone. Cedar grows up very fast and it is resistant to imbalanced climatic conditions, and to shortage of water. Cedar is also known to be a physically strong type of tree appropriate for constructional purposes. It is understood that the extensive usage of cedar is not merely due to its physical qualities, this tree has also been a historically important construction material. On the other hand, rubble stone is inappropriate for construction due to the problems of structural resistance. The rural architectural tradition exhibits an original solution to this problem: cedar complements the structural weakness of the rubble stone (**Figure 8**). This complementation produces the essential architectural detail underlying the environmental coherence of the rural settlement.

The rural setting is fabricated by the reproduction of the quintessential detail in a variety of circumstances. The constructive logic underlining all operations for creating human territory is concretized in a particular construction technique which may be called 'timber-reinforced rubble stone masonry with projecting tie-beams'. Although similar traditions may be observed in the neighboring regions of the Mediterranean Anatolia, the composite structure that integrates timber and stone through the creation of the projecting tie-beams (*peştivan*) is characteristic to the Akseki basin (**Figure 4, 8**).

In order to understand the principle of construction, it is necessary to appreciate the role of the projecting tie-beams (*peştivan*) within the construction process and the later performance of the structure. The masonry is composed of irregular units of rubble stone interlocked into each other without mortar. This system is reinforced, at every 50-60 cm. in its height, with a pair of timber runner-beams (*hatıl*) flush with the faces of the wall on either side (**Figure 8**). These runner-beams are connected to each other by tie-beams (*peştivan*) at intervals of 50-60 cm. The tie-beams are also called *düğme* which means "button" in Turkish. The runner-beams and tie-beams are both made up of cedar. Thus the rubble stone masonry is strengthened by inserting at regular intervals rows of runner-beams (*hatıl*), held in position by projecting cross-ties (*peştivan*). The placement of the *peştivan* in several courses coincides with the working rhythm of the builder. Each time the stone masonry reaches a height of approximately 50-

8. It can be inferred that during the Roman dominance, the region was a wide see of trees. It is understood that the destruction of the cedar forests had been a serious environmental problem already in the late antiquity. A.D. Meiggs (1982, 85-6) states that the Roman emperor Hadrian (76-138 AD) issued a law concerning the preservation of the cedar forests throughout his empire in 134.

Figure 10. The axonometric drawing of the 'environmental armature': a general view of the *Orta* (Central) District in Ürünlü (drawing by K.R. Kavas).

60 cm, the builder installs a new series of runner beams connected laterally with *peştivan*s. Each *peştivan* juts out of the wall around 25 cm. Therefore the arrangement of projecting tie-beams constitutes a built-in scaffolding (**Figure 8**). This system facilitates the construction of higher structures through the reproduction of new rows repeating the same principle. This traditional structural system has the capacity to produce structures of considerable heights.

The architectural characteristics given so far should be analyzed from the viewpoint of the conceptual background presented at the beginning of the paper. In the rural architectural tradition of Ürünlü, the characteristic joint between timber and rubble stone incorporates otherwise weak and perishable components into a resistant and permanent structure (**Figure 8**). In this respect, the 'tectonic joint' of the rural architectural tradition of Ürünlü becomes the irreducible constructional essence around which the material presence of the 'dwelling' comes into being. Therefore, environmental coherence is architecturally embodied by the 'tectonic joint'.

As it was explained in detail, the "timber-reinforced rubble stone masonry with projecting tie-beams" is realized by the reproduction of an essential joint represented by the projecting tie-beams. (*peştivan*). Thus, the traditional construction system of the Akseki-İbradı Basin exhibits a characteristic 'tectonic syntax', which is describable by a 'tectonic joint'. In Ürünlü, environmental coherence is architecturally condensed

in the 'tectonic joint'. In other words, the natural characteristics of the specific region and the essential cultural articulations of those physical characteristics are codified by the continuous system of *peştivan*.

The 'tectonic joint' is based upon this integral definition of the traditional rural environment. By the application of this joint system into the land, the traditional rural dweller of Ürünlü is in a full sensory and "aesthetic" involvement with the environmental features (Berleant, 1991, 91-2). This "aesthetic" involvement of the dweller during the traditional construction process (**Figure 8**), exhibits the environmental aesthetics of the rural architectural tradition.

The conception of "environmental aesthetics" is significant for the case of Ürünlü because "the environmental aesthetic value" based upon full sensory, bodily and participatory engagement with the environmental features may be traced in the construction techniques and processes of the historical built space undertaken by the rural dweller. Then, the rural dweller is characterized by his "aesthetic awareness of landscape," expressed most concretely in architecture's emphasis on "the bodily awareness of the land" (Berleant, 1997, 100). In this respect, the 'tectonic joint' also represents the connection of the human body with the physical character of a place.

In this respect the traditional environment of Ürünlü is culturally weaved through architecture. This quality is at the basis of the environmental coherence. The rural settlement may be conceived as a continuous 'environmental armature' (**Figure 10**), through which nature and culture intermingle. As it was explained by the introductory section called "conceptual framework," patterns existing in different scales of the settlement constitute this continuous weaving of nature and culture. Next section presents selected patterns of environmental coherence in Ürünlü by referring to the proposed conceptual framework given so far.

THE MULTILEVELED ARCHITECTURAL PATTERNS OF ÜRÜNLÜ

Approaching the patterns of environmental coherence from the perspectives of tectonics and environmental aesthetics necessitates an alternative method in the study of the rural settlement. The already established literature in Turkey concerning the traditional rural architecture of the region is limited to physical descriptions or typological classifications. (**9**). These studies generally focus on plan compositions. In these analyses, the traditional dwellings are isolated from their environment in order to be interpreted as abstract compositions (**Figure 9**). The conventional method limited to the architectural plan lacks a comprehensive understanding of the reciprocities between architecture and the environment. The standard representation isolates the dwelling from its environment by reducing the dwelling into an abstract composition of measurements, proportions and plan schemes. As a result, the representations of two different traditional dwellings produced in distinct regions may look indifferent (**Figure 9**).

These general comments also concern the architectural studies undertaken in the case study area of this paper. The environmental and cultural significance of the characteristic construction technique and the traditional rural architecture of the Akseki-İbradı Basin have not yet been investigated in detail. A more complete understanding of the architectural characteristics of the region is possible by conceiving the continuities

9. An exemplary text emphasizing the physical and typological features of the architectural tradition of Akseki is presented by Yıldız (1999).

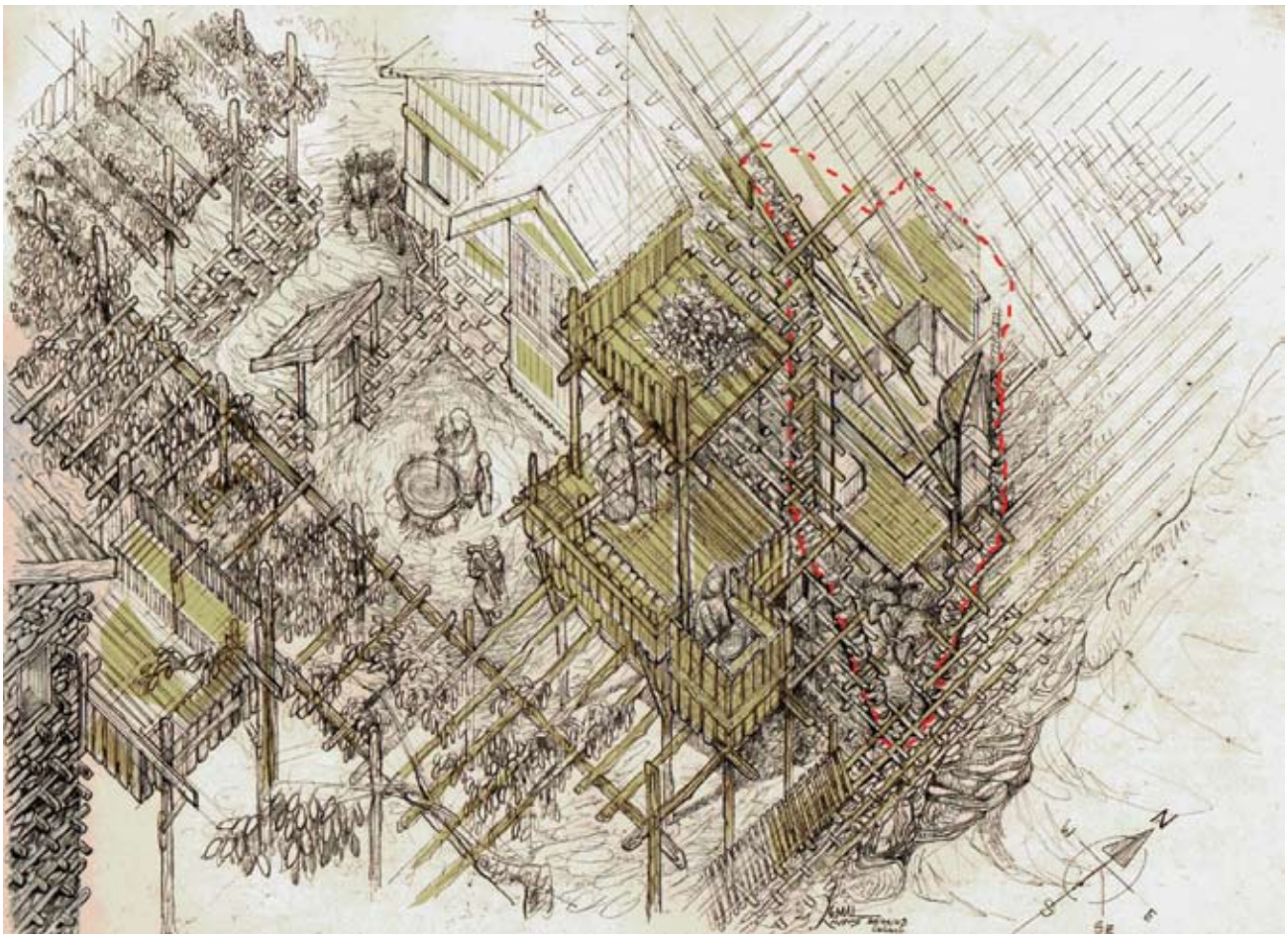

Figure 11. A proposal for an 'environmental representation' of dwelling: blow-up axonometric indicating the extended environmental relations of the dwelling (drawing by K.R. Kavas).

between architecture and the environment in an expanded range of scales. Then, an alternative method of representation is needed in order to realize this expanded conception of architecture as environmental design.

Environmental Representation

The concern for a multileveled analysis of architectural patterns necessitates an alternative method for the architectural representation of the rural settlement because the language of the graphical representations used by the established literature on the traditional Anatolian dwelling fail to reflect and represent environmental coherence. In order to concretize the patterns of environmental coherence in the rural architectural tradition of Ürünlü, this paper proposes an "environmental representation" of the settlement as an alternative method of representation. This proposal is based on a visual understanding of the intricate architectural and spatial relationships.

The following original drawings produced in the site illustrate the representative potentials of this proposal for an "environmental representation" (**Figure 10-12**). **Figure 11** is a clear example for the proposal of environmental representation of the traditional dwelling. The cutaway axonometric has the power which cannot be possessed by any other mode of representation. The drawing not only reveals the plan but also gives comprehensive information about other sections relating architecture with the environment.

When the acquisition of environmental coherence is taken into account from this viewpoint, it is possible to understand that the sectional configuration of the wall is far more significant than the plan of a single room (**10**). The environmental characteristics of the settlement are coded within the section of the wall; in contrast to what typology dictates, the room spatially constitutes a minor place within the overall environmental relations of the dwelling (**Figure 11**). The depth of the wall embraces the irreducible environmental essence or the 'tectonic joint' which combines cedar and rubble stone in a practically reproducible manner.

Adopting environmental representation, it becomes possible to illustrate the architectural elements that composed the continuous environmental structure of Ürünlü at different scales. As the discussion given so far has revealed, one of the scale levels is the 'tectonic joint'. The following parts will be concerned with other two principal scale levels through which the architectural patterns of environmental coherence shall be reviewed.

Environmental Armature

In Ürünlü, there is no conception of an isolated structure and all the architectural elements are in continuous relation throughout a district (**Figure 10**). The incessant continuity of timber elements may be traced by following the roof details, walls, foundations, garden walls, fences, terraces and platforms. This continuity explains the construction of the spatiality of the environment through the reproduction of the essential

10. Here, the idea of the room, which has been constructed by the typological studies, is interpreted. The room has been a central subject for typology. Its elements and proportions have been studied in great detail and general principles have been discerned (Küçükerman and Güner, 1995). The typological studies focus on the room and its position on the plans. This situation is also emphasized by Asatekin (1994, 1) who argues that typology has been the prevailing method for approaching the traditional domestic architecture of Anatolia. Asatekin states that although "traditional residential architecture of contemporary Turkey is one of the important foci of interests of different fields of specializations," it is taken from the viewpoint of architecture "mainly as a subject of typology." Typology has different streams throughout the world and the discussion of its variations requires detailed theoretical elaboration, which is out of this article's scope. In the scope of this article, the typological approach refers to the studies of the Turkish scholars such as Aksoy (1963), Küçükerman (1973), Eldem (1984) and Kuban (1995).

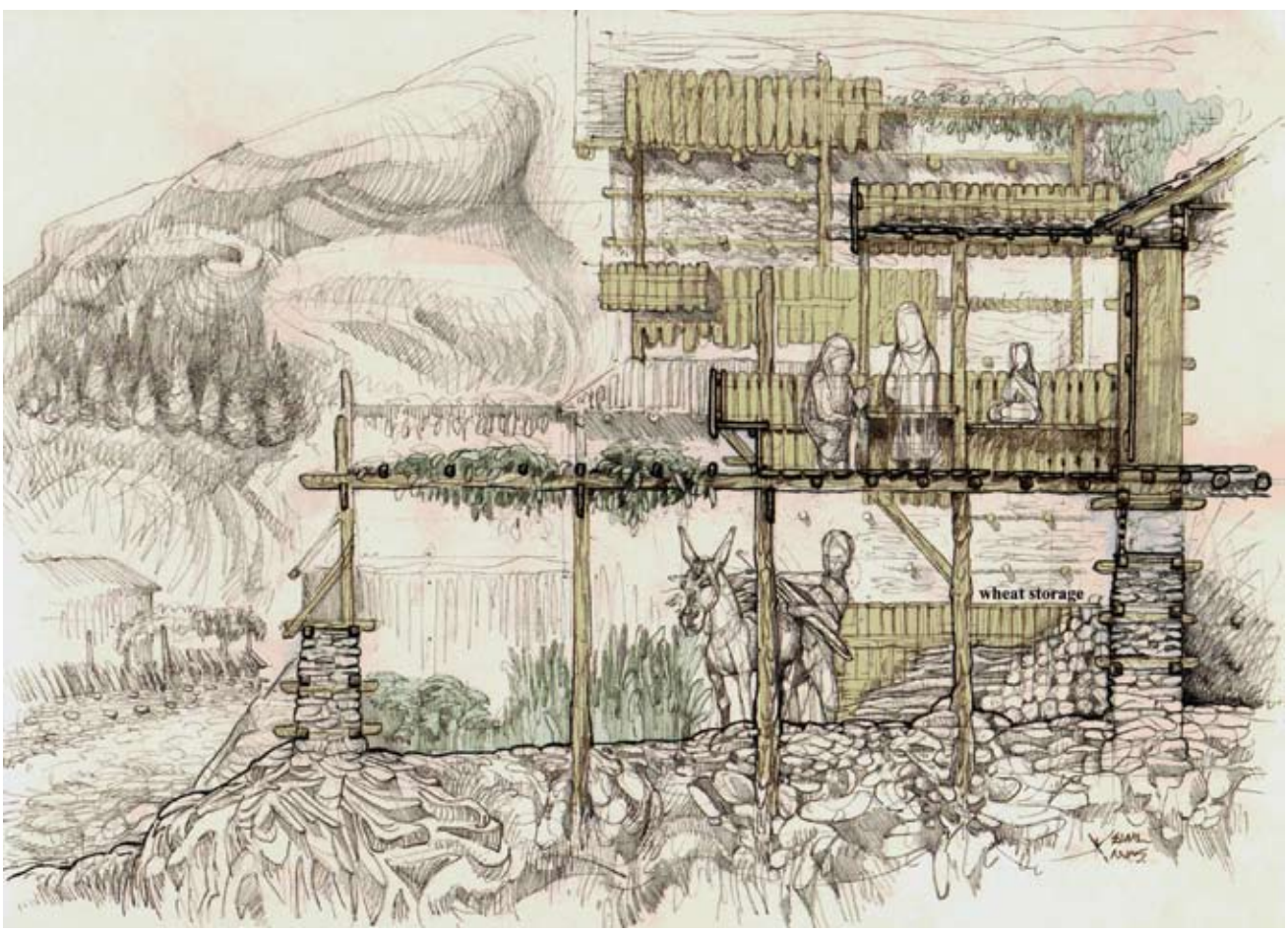

Figure 12. The section of the 'organic interface' : an articulation of the timber construction by the incorporation of *ayazlık* and its auxiliary functions such as wheat storage (drawing by K.R. Kavas).

'joint' and the acquisition of the environmental coherence. The contingency of the timber annexes connecting the masonry structures is not solely physical. Since each of the timber terraces and platforms correspond to certain daily activities, this material continuity is the trace of the intimate and intermingled neighborhood relations between the households. Furthermore, this continuity extends into the entire settlement and to the valley via the vineyard dwellings. The arrangement of architectural elements form a continuous 'environmental armature' where the efficient surface for solar radiation is maximized and any spatial opportunity for agricultural production is investigated.

'Environmental armature' is a scale level through which several architectural patterns can be revealed. The most tangible manifestation of 'environmental armature' in terms of architecture is the 'pattern' of 'house cluster' proposed by Alexander (**11**)(Alexander, 1977, 202). "Very rough, but identifiable clusters of 8 to 12 households around the common land and paths" is clearly exemplified by the Orta District of Ürünlü (**Figure 10**). This specific form acquisition of 'house cluster' signifies the construction of the sense of "place"; the spatiality of the traditional rural environment is formed by the integration of architecture and the environment.

Organic Interface

The graphic representations indicate that in this rural context, architecture has transcended the confinements of the limited concept of 'building' and became a specific'patterne d' lay out of the environment. For instance, the construction of masonry on the stone formations reflects a solution to the problem of the efficient usage of resources. Consequently, maximum amount of plain and cultivable land is left for agriculture (**12**)(**Figure 4**). The construction process of the traditional dwelling demonstrates "the direct interleaving of the building and the earth" where the "boundary becomes ambiguous" making it "impossible to say exactly where the building stops and earth begins" (Alexander, 1977, 786-7). Therefore, the environmental coherence between the human contribution and the natural contours may be conceptualized as an 'interface' (**13**). This 'organic' conception of 'interface' has led to more "cohesive" spaces and "contiguous" structures (Berleant, 1997, 120).

If 'environmental armature' is a continuous physical structure encapsulating the traditional patterns of environmental coherence, the 'organic interface' is an individual component of this chain. **Figure 10, 11** illustrate the lively continuity between the 'environmental armature' and 'organic interfaces'. Each 'interface' is a derivative of an 'armature' exemplifying a specific participatory field of the dweller. For instance, the general view of the Orta District in Ürünlü (**Figure 10**) demonstrates how the timber extensions of the characteristic timber reinforced masonry become a continuous 'armature'. These extensions form 'interfaces' as the manifestation of the 'armature' in the human scale (**Figure 12**). The 'organic interface' represents the traditional strategies developed in the human scale to cope with contextual environmental problems.

An 'interface', which integrates the dwelling with the environment, can be represented as a characteristic architectural section. If a 'pattern' is "an operator which differentiates space…[and] creates distinctions," (Alexander, 1977, 373) these spatial differentiations can be traced by exemplary sections. Drawings of the organic interface are in the form of architectural sections which represent the relevant sections of daily life

11. In the definition of the pattern called 'house cluster' (37), Alexander (1977, 198) argues that "people feel comfortable in their homes if a group of houses forms a cluster with the public land between them jointly owned by all the householders." Alexander (1977, 201) illustrates this pattern with "overlapping clusters in a Turkish village". Alexander (1977, 202) argues that "identifiable clusters of 8 to 12 households around the common land and paths" gives an ideal solution. (Numbers in brackets after the pattern names are the original numbers that appear in Alexander's work.)

12. This environmental consciousness of the rural architectural tradition is also emphasized by Alexander's (1977, 509-11) patterns of 'site repair' (104) and 'agricultural valleys' (4). Alexander argues that "Buildings must always be built on those parts of the land which are in the worst condition, not the best", for instance one should "leave those areas that are most precious / beautiful / comfortable / healthy as they are…" Jale Erzen (2006, 51) explains this feature of the rural architectural traditions by referring to the concept of 'ecumen' meaning the transition of space into "place" or house into "dwelling."

13. A conception of interface in the study of the traditional Anatolian architecture has been developed by Asatekin (1994). This conception was used to explain the gradual transitions between "private/semi-private/semi-public/public" zones that constitute the space between the dwelling and its environment. Here, 'interface' points to the same spatial zone. However, it is not considered in terms of degrees of privacy. It is rather taken as the repository of spatial articulations that operate through the integrative architectural patterns between the dwelling and environment.

in the traditional society. For instance, the architectural section shown by **Figure 12** illustrates the most basic components of the 'organic interface' which are discernible in the majority of the settlement. The timber construction covered with vine leaves and surrounded with all kinds of vegetation are prevalent environmental elements (**14**). The other spatial configurations of the 'organic interface' are the differentiations of this basic lay out.

Figure 12 also illustrates further differentiation of space by the addition of the 'patterns' like *ayazlık* / *köşke*¸ platforms for drying fruits and vegetables, the counter, *peyke* (outdoor sofa made of wood), and the ablution place (*abdestlik*). These functions were embraced by *ayazlık* / *köşke*¸ a timber platform which was raised on pillars. It is the place where most of the daily activities such as cooking, eating, washing the dishes, drying fruits and vegetables, looking after the children and praying took place. Therefore *ayazlık* may be regarded as the heart of the outdoor activity in the traditional environment (**15**). *Ayazlık* and its annexes have become the stage of the interaction between the members of the family in different age groups. The relations are reinforced by collective activities taking place in the *ayazlık* (**16**). In this respect, it is the essential pattern structuring the spatiality of the environment. The spatial contingency throughout a neighborhood can be regarded as a system of *ayazlık* (**Figure 10**).

The analysis of the architectural tradition of Ürünlü through the proposed method of environmental representation discloses the appropriateness of Alexander's conception of the pattern language for the historiography of the rural settlement. By referring to a literary analogy, Alexander argues that the culturally-specific combination of the generic 'patterns' lead to different 'pattern languages' associable with different contexts. Any act of construction "brings a handful of patterns into existence" (Alexander, 1977, 360), then these 'patterns' are three dimensionally combined in infinite variety (Alexander, 1977, 186), and form a specific 'pattern language' just like the language of a particular people. For Alexander, if each 'pattern' is a space-differentiating "operator," the sequence of its operations constitutes a 'pattern language' (Alexander, 1977, 373).

There are two points indicating the appropriateness of the use of pattern language in the conceptual framework of this paper. These points also explain the harmonious relation between the constituents of the proposed conceptual framework: 'tectonics', 'environmental aesthetics' and 'pattern language'.

Firstly, Alexander's terminology points to the issue of cultural identity. If the 'pattern language' of a certain architectural context is associated with its cultural identity, the 'patterns' have a lot to say about the congruence between architecture and culture in a settlement like Ürünlü. In this context, the architectural elements and their compositions can be regarded as the vocabulary of the 'pattern language' of Ürünlü (**Figure 10-12**). The literal analogies of "language" and "syntax," used by Alexander and Frampton, successfully illustrate the role of architecture in the processes of enculturation. Just like "language," the knowledge of the architectural tradition is collectively constructed, shared, reinterpreted, adopted into environmental constraints and transmitted.

Secondly, 'pattern language' is capable of explaining the continuity achieved by the reproduction of the 'tectonic syntax' in different scale levels because the abstract definition of 'pattern' makes it possible to

14. The timber post-lintel construction embraces the patterns of 'fruit trees' (170), 'tree places' (171) and 'garden growing wild' (172) (Alexander, 1977, 795-804).

15. *Ayazlık* embraces the patterns called 'outdoor room' (163) and 'courtyards which live' (115).

'Outdoor room' (163) is concretized by the definition of the exterior space with the help of "fences, sitting walls, screens, hedges, exterior wall of the buildings" in a way that "it takes on the feeling of a room, even tough it is open to the sky" (Alexander, 1977, 767).

'Courtyards which live' (115) embraces the idea of "roofed verandas continuous with both the inside and the courtyard" which has "a view out of it to some larger open space" (Alexander, 1977, 564).

16. In this sense, *ayazlık* also embraces the patterns of 'family' (75), 'life cycle' (26), household mix' (35), 'communal eating' (147), 'eating atmosphere' (182) (Alexander, 1977).

At this point, the pattern of the 'family' (75) should be emphasized. Alexander (1977, 377-8) argues that for "a viable social form", enough "communal action" is needed "to give depth and richness to the ordinary experience around the home" He takes the "old extended family based on blood ties" as a successful model. The traditional Anatolian dwelling exemplifies this environment where "a family of at least three generations, with parents, children, grandparents, uncles, aunts, and cousins, all living together in a single or loosely knit multiple household."

Ayazlık was also an outdoor playground for the children. In this sense, *ayazlık* embraces the 'pattern of connected play' (68) (Alexander, 1977, 341-7).

conceive it in various scales concerning the rural settlement. 'Patterns' of the architectural scale become the subsets of a 'pattern' shaping the settlement scale. Environmental coherence can be regarded as the product of this continuity among the multileveled 'patterns'. This paper defined three successive scale levels on which the multileveled patterns of environmental coherence may be placed: 'tectonic joint', 'organic interface' and 'agricultural armature'. These interrelated patterns structure the distinctive 'pattern language' of a certain cultural tradition.

This analysis of the architectural sections from the perspectives of environmental aesthetics has demonstrated that each spatial differentiation corresponds to a 'pattern' of the overall environmental coherence of the settlement. In this interpretation, the section reveals the architectural embodiment of the idea of the 'tectonic joint' and demonstrates how the environment acquires its characteristic spatiality and coherence through the multileveled reproduction of the essential 'joint'.

CONCLUSION

In this discussion, the architectural embodiment of the environmental coherence in a specific Mediterranean highlander settlement was represented. By exploring the physical expressions of the integrity between climate, topography, constraints for natural resources, architectural morphology and all spheres of local culture, this paper identified the architectural patterns of the traditional rural settlement which have sustained the environmental coherence throughout history.

This paper proposed a new method for approaching the rural architectural traditions through the material evidence of architecture. Ürünlü is taken as a potential example for representing an alternative approach to the study of rural architectural traditions. The current physical state of the settlement of Ürünlü not only provided substantial evidence about the morphology of traditional rural architecture, but also informed about the local culture which had once been congruent with architecture. The absence of textual evidence is substituted by a visual analysis of the intricate architectural and spatial relationships. The identification of patterns as the convergence of traditional social activities with the spatial articulations made it possible to trace the nature of the intangible cultural heritage through the tangible evidence of architecture. The original drawings produced on site (**Figure 10-12**) illustrate the representative potentials of this proposal by identifying and explaining the patterns of environmental coherence in the rural architectural tradition of Ürünlü.

BIBLIOGRAPHY

AKSOY, E. (1963) Orta Mekan: Türk Sivil Mimarisinde Temel Kuruluş Prensibi, *Mimarlık ve Sanat,* v: 20; 39-92.

ALEXANDER, C., et al. (1977) *A pattern Language: Towns, Buildings, Construction*, Oxford University Press, New York.

ALEXANDER, C. (1979) *The Timeless Way of Building*, Oxford University Press, New York.

ASATEKİN, G. (1994) *The Role of the Inhabitant in Conservation: A Proposal for the Evaluation of Traditional Residential Architecture in Anatolia,* Unpublished Ph.D. Dissertation, METU, Ankara.

BERLEANT, A. (1991) *Art and Engagement*, Temple University Press, Philadelphia.

BERLEANT, A. (1992) *The Aesthetics of Environment*, Temple University Press, Philadelphia.

BERLEANT, A. (1997) *Living in the Landscape: Toward an Aesthetics of Environment*, the University Press of Kansas, Lawrence, Kansas.

BRAUDEL, F. (2002) *The Mediterranean in the Ancient World*, translated form the French by Siân Reynolds, text edited by Roselyne de Ayala, Paule Braudel, Penguin Books, London.

ELDEM, S. H. (1984) *Türk Evi: Osmanlı Dönemi*, Türkiye Anıt Çevre Turizm Derneği, İstanbul.

ENHOŞ, M. (1974) *Bütün Yönleriyle Akseki ve Aksekililer*, Hüsnütabiat Matbaası, İstanbul.

ERZEN, J. (2006) *Çevre Estetiği*, ODTÜ Yayıncılık, Ankara.

FRAMPTON, K. (2002) Rappel à l'Ordre : The Case for the Tectonic, *Labour, Work and Architecture, Collected Essays on Architecture and Design*, Phaidon Press Ltd., London and New York; 91-103

İŞKAN, H., and ÇEVİK, N. (1999) Akseki Çevresi Arkeoloji ve Tarihi, *Sanatsal Mozaik: Kentsel Bilinç-Çevre-Kültür*, EKO Yayıncılık Ltd, İstanbul; 51-3.

KAVAS, K. R. (2009) *Environmental Aesthetics of the Rural Architectural Tradition in the Mediterranean Highlander Settlement: The Case Study of Ürünlü*, Unpublished Ph.D. Thesis in Architectural History (Supervisor, Prof. Dr. Jale Erzen) Ankara, METU Graduate Institute of Social Sciences.

KUBAN, D. (1995) *Turkish Hayat House*, Eren Yayınları, İstanbul.

KÜÇÜKERMAN, Ö. (1973) *Anadolu'daki Geleneksel Türk Evinde Mekan Organizasyonu Açısından Odalar*, Türkiye Turing ve Otomobil Kurumu Yayınları, İstanbul.

KÜÇÜKERMAN, Ö., GÜNER, Ş. (1995) *Anadolu Mirasında Türk Evleri*, TC Kültür Bakanlığı Yayınları, İstanbul.

MACDONALD, W. (1986) *The Architecture of the Roman Empire, Volume II: An Urban Appraisal*, Yale University Press, New Haven and London.

MEIGGS, R. (1982) *Trees and Timber in the Ancient World*, Oxford: Clarendon Press; 85-6.

YILDIZ, H. (1999) Akseki Kent Merkezi, *Sanatsal Mozaik: Kentsel Bilinç-Çevre-Kültür*, EKO Yayıncılık Ltd, İstanbul.

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Anahtar Sözcükler: kırsal mimari gelenekler; çevresel tutarlılık; çevre estetiği; çevresel temsil; tektonik sözdizimi; kalıp dili; tektonik bağ; organik ara yüz; çevresel omurga; Ürünlü; Akseki; İbradı.

ÜRÜNLÜ (AKSEKİ - İBRADI HAVZASI) KIRSAL MİMARİ GELENEĞİNDE ÇEVRESEL TUTARLILIK KALIPLARI

Geleneksel kırsal yerleşimlerin ortak özelliği, doğa ile kurdukları ilişkilerde çevre ölçeğinde gözlenen tutarlılıktır. Kırsal mimari geleneklerin oluşturdukları çevresel tutarlılık (*environmental coherence*) mimarlık tarihi disiplini içerisinde yeterince incelenmemiş bir konudur. Bununla birlikte, kırsal mimariye dair tarihsel bilgi veren yazılı kaynakların sınırlı olması doğrudan fiziksel çevrenin görsel olarak incelenmesi temelinde araştırmalar yapmayı zorunlu kılmaktadır. Bu nedenlerden dolayı, geleneksel kırsal yerleşimlerdeki çevresel tutarlılığın tarih boyunca sürdürülmesini sağlayan mimari öğeleri ortaya çıkarmak ve açıklamak için yeni bir kavramsal çerçeve gerekmektedir.

Bu makalede çevresel tutarlılığın temelindeki doğa-kültür uyumunun mimari boyutunu tartışmaya yönelik yeni bir kuramsal çerçeve oluşturmak amacıyla "çevre estetiğinin" kavramsal altyapısından yola çıkılmaktadır. Güney Batı Anadolu'daki Ürünlü geleneksel dağlık yerleşimi üzerinden mimarinin kültürel devamlılıktaki rolüne odaklanılmıştır. Çevresel tutarlılığın mimari öğeleri çevrenin karakteristik mekânsallığını oluşturan çok ölçekli geleneksel kalıplar olarak kavramsallaştırılmıştır. Kırsal mimari geleneklere bu açıdan bakıldığında onların tekil yapılara indirgenmeden sürekli ve bütüncül bir çevresel yapı olarak düşünülmesi gerektiği ortaya çıkmaktadır. Bu bakış açısı mimari detaydan yerleşim biçimine uzanan birçok ölçek düzeyini dikkate almayı gerektirmiştir. Ürünlü köyü, genellikle korunmuş olan geleneksel yapı çevresiyle, çevre-kültür bütünlüğünü üreten mimarinin farklı ölçek düzeylerinde incelenmesi için uygun bir örnektir.

Ürünlü'deki mimari kalıpların çevre estetiği açısından incelenebilmesi amacıyla mimarideki çevresel sürekliliği farklı ölçeklerde tanımlamak ve temsil etmek için gerekli kavramsal araçlar türetilmesine ihtiyaç vardır. Bu düşünceyle, daha önceki geleneksel yapı çevresi çalışmalarında ortaya atılmış olan "tektonik sözdizimi" (*tectonic syntax*) ve "kalıp dili" (*pattern language*) kavramları kullanılmıştır. Mimariyi çevre ile bütünleştiren kalıplar, yerleşim, yapı ve detay ölçeklerinde sırasıyla "çevresel omurga", "organik ara yüz" ve "tektonik bağ" olarak adlandırılan ölçek düzeylerinin öğeleri olarak gruplandırılmıştır.

Kırsal mimarinin çevreyle bütünleşme biçimleri, geleneksel yapı çevresinin sunduğu fiziksel malzemenin görsel olarak analiz edilmesini içeren ve bu makalede "çevresel temsil" (*environmental representation*) olarak adlandırılan bir yöntem uyarınca arazide üretilen orijinal çizimler vasıtasıyla ortaya konmuştur. Böylece Ürünlü örneği üzerinden mimari kalıpların çevre ile kurdukları süreklilik içerisinde ve bağlamsal problemlere getirdikleri kültüre özgü çözümler ışığında nasıl şekillendikleri ortaya çıkarılmış ve kırsal mimari gelenekteki çevresel tutarlılık kalıpları ortaya konmuştur.

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