

# AINUN IS A HERITAGE VILLAGE IN THE SOUTH OF JORDAN. ANTHROPOLOGICAL - ARCHITECTURAL STUDY

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**Mohannad Tarrad, Abdel-Aziz Mahmoud Abdel-Aziz**

*Al-Bayt University, Mafrq, Jordan*

## **Abstract**

The present anthropological architectural field study is conducted in Ainun village, located in Karak governorate in the south of Jordan. It digs through the natural and historical environment of the site, the village apellation, its social and urban history, the kinship system, dwellings' ownership, living style, the cultural format and the village's traditional architecture and its phases. This study aims at highlighting the traditional cultural and architectural heritage of the village. The village's location was chosen for study due to its varied topography, its coherent traditional architecture and its richness of valleys, water springs, plains and pastures. Moreover; its implication for the rural heritage and the experience of its inception by a pastoral community passing the process of stability, shifting from living in caves and tents to living in fixed houses built of stones and mud. The study was based on methodologies of architectural and anthropological field researches focusing on the social, dynastic and urban history of the village. The sources of written history and local documents were relied on, in line with the oral history by interviewing the elderly as an essential source of information, as well as being acquainted with the villagers' land registry of their properties and the records of the Shari'a courts, which list the names of the first founders of the village and the proportion of their possessions of land and dwellings. Also, heritage buildings have been officially registered and demarked. The study will examine the meaning of the village's name "Ainun", the natural and historical environment of the village, its social, dynastic and urban history, the beginnings of stability in its location, the royal kinship, its traditional architecture's styles and phases, as well as the material and non-material culture and the traditional dwellings' holdings. The study includes photographs, maps and architectural drawings.<sup>1</sup>

**Keywords:** Ainun a Jordanian village, traditional dwellings, material culture, culture, society and anthropology in Jordan

# АЙНУН - ТРАДИЦИОННАЯ ДЕРЕВНЯ НА ЮГЕ ИОРДАНИИ. АНТРОПОЛОГИЧЕСКОЕ АРХИТЕКТУРНОЕ ИССЛЕДОВАНИЕ

**Моханад Таррад, Абдель-Азиз Махмуд Абдель-Азиз**

*Университет Аль-Баят, Эль-Мафрак, Иордания*

## **Аннотация**

В статье приводятся результаты антропологического архитектурного натурного исследования деревни Айнун, расположенной в провинции Карак на юге Иордании. Оно касается природной и исторической среды места, происхождения названия деревни, ее истории как места поселения, системы родства и собственности на жилища, образа жизни населения, традиций культуры и архитектуры деревни, этапов ее развития. Целью данного исследования является освещение традиционного культурного и архитектурного наследия деревни. Место, в котором расположена деревня, было выбрано из-за разнообразия рельефа, преемственности архитектурных традиций и природных богатств

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долин, водных источников, равнин и пастбищ. Особое значение имело то, что сельское население этой местности, проживающее в социальной форме стабильной религиозной общины, имеет непрерывный исторический опыт перехода от жизни в пещерах и палатках к жизни в домах, построенных из камней и глины. Исследование проводилось на основе методологии архитектурно-антропологических полевых исследований, посвященных социальной, династической и городской истории села. Исследователи опирались на письменные источники и документы, рассказы и предания, услышанные от местных жителей. Также были изучены земельный кадастр, кадастр собственности жителей и записи Шариатских судов, в которых перечислены имена первых основателей деревни и доли их владения землей и жильем. Выявленные здания, отнесенные к культурно-историческому наследию, были официально зарегистрированы и маркированы. В исследовании рассмотрено значение названия села «Айнун». Исследование включает в себя фотографии, карты и архитектурные чертежи.<sup>2</sup>

**Ключевые слова:** Иорданская деревня Айнун, традиционные жилища, материальная культура, культура, общество и антропология в Иордании

## Introduction

Settlement and stability in rural villages in Southern Jordan is an important stage in the development of rural and pastoral communities, due to their outcome and impact on the nature of rural construction in the stages that follow communities' stability in a rural environment, which means the adaptation to its atmosphere and benefit from its natural and vital environment, and establishing a kind of economic, social and urban relations. For this, a village is the first reason for the presence of a population gathered in a specific place where their activities go towards agriculture and grazing after the long life of travel in pursuit of sustenance and safety. Due to the nature of Ainun village, its moderate climate, the availability of the means of livelihoods and stability, such as the availability of water resources in valleys and springs and the presence of fertile pastures, all this made Ainun a suitable place for the initial stability in its natural caves overlooking the valleys and later moving to the fixed stone dwellings located at the top of the oval hill surrounded by valleys on three sides. The village community consists of the Mahadin clan, as old people in the village mentioned information about their social and dynastic history, the way the village was established at the beginning of the twentieth century and its homogeneous society.

## The study importance

The study importance lies in identifying the nature and experience of rural and pastoral stability in Ainun village, monitoring the changes in the style of traditional dwellings from living in caves to the permanent stone houses in old Ainun and then moving in the mid-sixties of the last century to the New Ainun to live in modern houses, and the social transformations that accompanied this transmission.

## The study objective

The study aims at highlighting the heritage in southern Jordan and introducing the social and urban history of Ainun village, which is rich in its rural heritage: The study is considered as a contribution to the anthropological study of traditional dwellings from the cultural and architectural aspects.

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<sup>2</sup> **Для цитирования:** Старостенко Ю.Д. И.В. Жолтовский о развитии и реконструкции Москвы: проекты и мысли 1920-х – 1930-х гг. // Architecture and Modern Information Technologies. – 2018. – №3(44). – С. 88-109 [Электронный ресурс]. – Режим доступа: [http://marhi.ru/AMIT/2018/3kvart18/05\\_mohannad\\_abdel/index.php](http://marhi.ru/AMIT/2018/3kvart18/05_mohannad_abdel/index.php)

## Methodology

The study was the result of the researchers' participation in the field of anthropology and architecture. The methods of field study, architectural drawings and photographs were used to describe and document the traditional dwellings and analyze their architectural elements using software; AutoCAD and 3D Civil, as well as the use of field anthropological studies' methodologies; like observation and interviews with the elderly in the village and the collection of information on the social, dynastic, cultural and urban history from historical sources, Sharia courts' records, and the land registry in which the village and its community were mentioned.

### 1. Concepts of human relationship to place

#### 1.1. Traditional dwellings

Ainun is an architectural block of dwellings carried out by its inhabitants in an inherited innate-traditional style; using the surrounding environment materials with simple techniques that have nothing to do with machinery and manufacturing. The building is achieved by experimentation and committing errors, and gaining individual and collective experience through practice and repetition. Taking into account that the structure should emerge from the same space in terms of building materials or architectural and structural design in order to achieve the required functions of a house and the topographical and environmental adaptation. In the architecture, the names of residential units vary, and their classification methodology varies according to the purpose of their study and the way in which they are viewed. Human genome scientists who studied pre-urban housing classified housing according to the background of socio-economic societies and their cultural patterns (housing as temporary and temporary dwellings, permanent or temporary housing, dormitory, semi-permanent housing or permanent housing (such as: medieval dwellings, Renaissance dwellings, Victorian dwellings, etc.), or according to building techniques and materials used in their implementation (houses of poetry, mud houses, wooden dwellings, concrete dwellings etc.).

Architects categorized dwellings according to their architectural form (such as houses with pavements, houses with porches and others) and classified them by size (such as two- or three-room dwellings, etc.) [8].

This concept is consistent with Brunskill's definition [19]; the traditional architecture buildings were designed by traditional analysts, guided by familiar frameworks in the places where these dwellings are completed by using local materials. This typical building is locally agreed upon and hence can be observed in all the old villages in southern Jordan and other rural areas of the Kingdom of Jordan.

The architect Oliver [24] refers to the concept of vernacular innate architecture, which consists of dwellings constructed by a local group, combined in its environmental context, through the exploitation of available resources and the use of traditional techniques through which traditional patterns can be produced to meet specific needs, embody local cultural and economic values and conform to the group's living style. Prior to these theses, Michel Biewers(1993), who studied the village of Eema in Tafila, south of Jordan, noted that the traditional dwellings in the village were built to suit the traditions of the population and their way of living in terms of local building materials or architectural design with the distribution of the architectural elements to meet the function of the house. She also referred to the changes that took place in the traditional architecture to keep up with the changes in the style and way of living of the locals. The architect Ammar Khamash pointed out in his studies and observations the traditional Jordanian architecture and how a house emerges from a suitable location for settlement. He also described the method of the house's interior design, the distribution of the architectural elements and furnishing materials that complement the house and are used in the family's daily life [20]. Despite the fact that the traditional architecture uses squariness and cubism, it has also been characterized by clear organic qualities and harmony with nature, and the abundance of natural treatments is the best proof of this. We see the geographical,

topographical and climatic overlap, to extend the elements of nature visually and materially into the interior spaces, to form courtyards and gardens, and to merge architectural blocks with natural elements in the site ideally [16].

## **1.2. Man and dwelling**

The relationship between a man and a traditional dwelling is explained by a family inhabits in its own dwelling as a shelter. This relationship among the family members comes in a coherent dialectical form. As for the family is a group of people with a special internal organization, it is a basic unit in the social structure, the same way a dwelling is a basic unit in the urban structure. A family carries out multiple functions characterized by continuity and subject to transformations during the phases of village development (Old Ainun – New Ainun). Through these phases, sustainable functions continue, such as ensuring basic needs, sustainability of species, reproduction, upbringing, and providing family members with a role and a position. The actual embodiment of these functions and roles cannot be through the dwelling itself as for being the physical frame that contains and preserves the family within the principle of there is no family without a dwelling and there is no dwelling without a family, but the more the dwelling is appropriate, the more it is positively reflected over the family and vice versa. For this, inhabitants in old Ainun implemented their dwellings in an inherited and appropriate ways for their life style and in a positive manner to perform their basic functions that meets the family needs; as a shelter for the family and its livestock, a storage to keep food and work equipment and a space where daily activities can be carried out [1]. The difference between rural and urban lifestyles had a huge impact on building type. Life in the countryside depended mainly on agriculture and livestock farming. This in turn called for attaching a courtyard to the house, which can be used as a private space for the family or/and a place to keep animals such horses, donkeys, cows, sheep, goats, and poultry. All rooms are usually set around the courtyard and open onto it. Most courtyards have water wells inside their borders, which is dug in the ground to collect rainwater during winter. The collected water is used for different purposes such as drinking, cooking, cleaning, etc. [13].

A common contribution of the traditional house in the village is the humble dwellings concerning the components, easily fitting multi-uses, appropriate for inhabitant's nature, the way of living and production, to meet their household and seasonal needs. The work's nature often required staying outdoors all day long and even overnight for days. Sometimes they are away for months; thus the house is used for other functions. It is the family shelter, as well as a store for crops, farming tools and a barn for animals, cattle and other livestock [14].

## **2. The village's appellation and boundaries**

«Ainun» is an Aramaic word that means a «spring» [5]. It is a diminutive form which means a small spring. Ainun is located in the south of Karak on a distance of 11 km (fig. 1). The General Statistics Department estimated its population in at about 3500 person, based on a field study in the village, distributed in Old Ainun and New Ainun (general statistics), inhabited by the Mahadin clan and some families from Al-Shamaileh clan; those clans are settled pastoralist clans from Karak. The village is located on the top of an oval hill, about 850 meters high, surrounded by seasonal valleys on three sides; from the west there is al-Nawaiseh valley followed directly by al-Munqati'a mountain, from the east there is Al-Hafayr valley that starts from Al-Ish, on the south the valley of al-Nawaiseh and the valley of Al-Hafayr meet Forming the valley of Mahadin, which continues to the north till the west side of the historic city of Karak.

### **2.1. The natural environment**

The site's land belongs to the formation of the mountainous terrain, which reaches 900 meters above sea level, interspersed with the slopes of erosion and pervasive drift of the natural brooks composing the seasonal valleys (fig. 2, 3). It has limestone rocks formed in the Upper Cretaceous Geological Age, which were subjected to chemical weathering processes, led to melting the limestone rocks forming caves and red soil in cliffs [2]. The village is characterized



by the continental Mediterranean climate, which consists of a long hot summer and a short cold winter, interspersed with two transitional periods – spring and autumn. In winter the depression rainy wind blows from the west, where agriculture depends on rainwater which is unstable and it fluctuates from year to year with an annual average of 250–350 mm [3]. People and animals depend on the waters of valleys, wells and springs scattered around the village. Monsoon rain allows the growth of annual grass and shrubs that is good for the livestock. The village has al-Hafair spring located to the east of the old village, Al-malatah spring located on the northern front of al-Mahadin valley at the meeting point of al-Nawaiseh valley with al-Hafair valley, and al-Thunaybat spring, which lies to the west of al-Malatah spring in al-Mahadin valley (The report of the Ministry of Water and Irrigation).

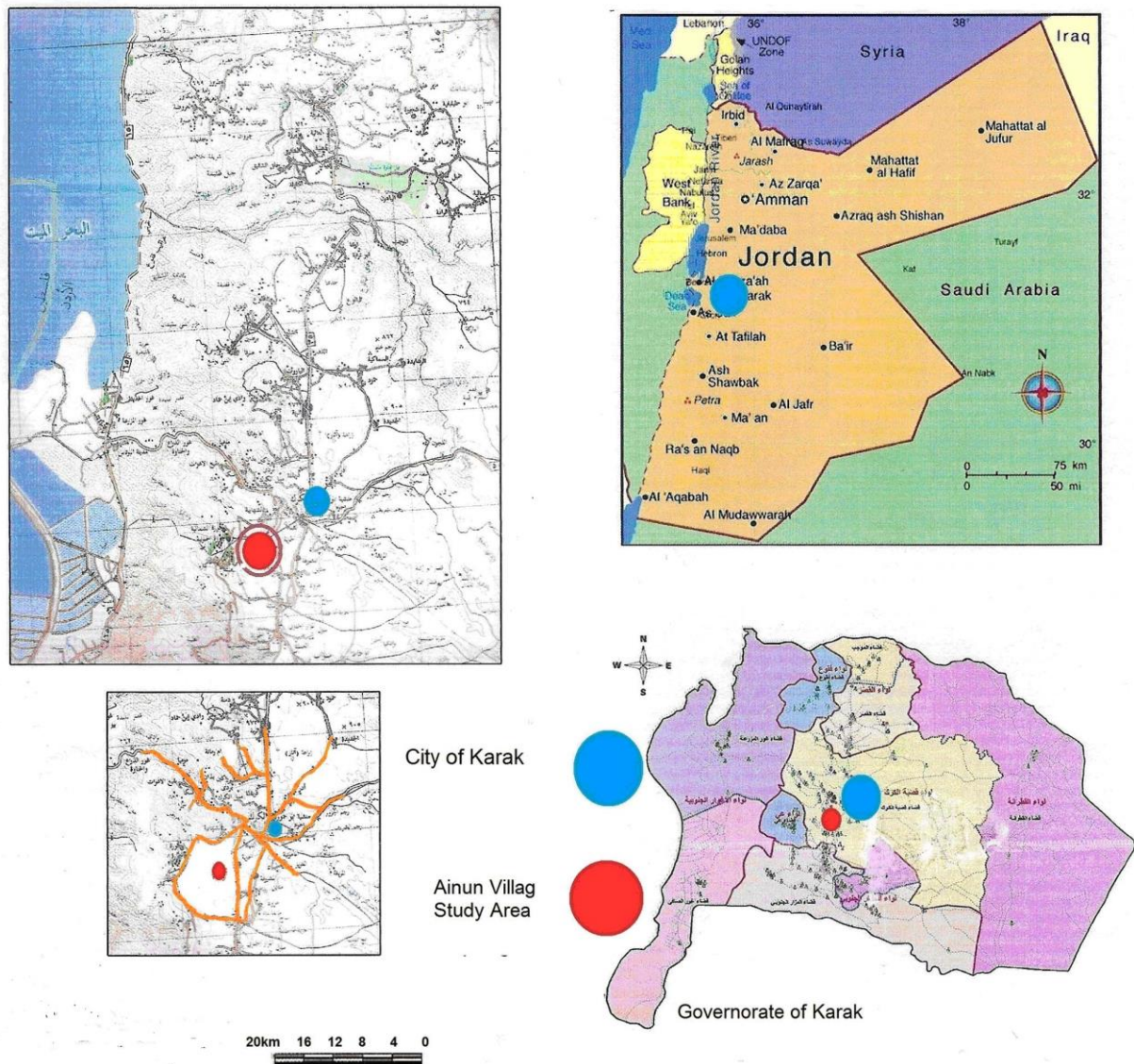


Figure 1. The location of Ainun village through geographical maps. Source: Royal Geographical Center (liberally by the researcher)



Point	Latitude and longitude Basically 60		Latitude and longitude Basically 100		Gaza coordinate System	
	Latitude	Longitude	Latitude	Longitude	North	East
Aynun 1	30° 9' 6.17"	35° 40' 54.74"	31.1517	35.68187	62357.90	214975.47
Aynun 2	30° 9' 4.48"	35° 40' 58.56"	31.1512	35.68293	62302.90	215076.78
Aynun 3	30° 8' 57.19"	35° 40' 54.0"	31.1492	35.68167	62080.84	214957.57
Aynun 4	30° 8' 58.47"	35° 40' 51.30"	31.1496	35.68092	62124.68	214885.87

Figure 2. The nature of the village of Ainun through the aerial photo with the table of coordinates. Source: the researcher

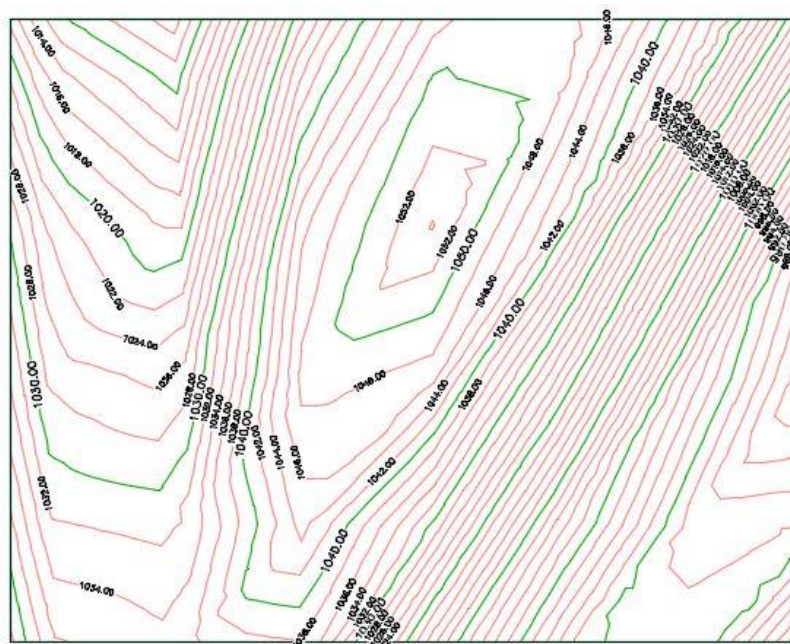


Figure 3. The topography of Ainun village, located on an oval hill surrounded by valleys. Source: The researcher



## 2.2. The historical environment

The surrounding of Karak has been inhabited since the ancient Bronze Age (3000 BC). The area is considered an agricultural village, and a center for early human attraction and stability in Karak hill and valleys, where the remains of archaeological ruins are still visible to the present day (fig. 4). The residents of Ainun often referred to the remains of an ancient village, pieces of pottery, pitchers, glass, foundations of ancient buildings and carved stones scattered on the edges of the village.

The most prominent historical periods in the history of this region are the Al-Mu'abi Era from the twelfth century BC [17], the Hellenistic Roman, Byzantine and Islamic eras from the middle of the seventh century AD, as well as the Crusades era in the early eleventh century AD, and the following Mamluk and Ottoman eras [7].

The foundation of Ainun village dates back to the end of the nineteenth century and the beginning of the twentieth century in an area where ancient ruins are scattered in the hills around Ainun. Some of these ruins are: al-Labun ruin at the northeast of the village, which has remains of holes and some foundations of an old building. Jaljul ruins at the south of the New Village which overlooks the Old Village at the top of the hill where remains of ancient buildings are found. The Cave of the Cross; a cave dug into the rock inside the cave on its northern, eastern and southern sides, opens the cave to the east. It may have been used as a sanctuary for monks or as a temple for seclusion, where sources reported the habit of seclusion in the caves scattered in the hills of Jordan [9].



Figure 4. The location of Ainun village through a panoramic image, located on an oval hill,  
Source: The researcher

## 2.3. Social and Urban History

The kinship system of the Mahadin clan is a collective tribal grouping that does not have real kinship relations (a blood association) i.e., they are not descended from one grandfather but they take a specific name for their own. However, only some branches of Mahadin have real blood relations i.e. descended from one grandfather who is the founder of a specific branch or the family of Mahadin. Mahadin people are distributed over several villages other than Ainun, to the south and west of Karak like Samrah village, Al-shihabiyah, and Al-aziziya (Azra previously) in addition to Ainun village. Some families also lives in the cities of Karak, Zarqa and Amman.

## 2.4. The dynastic History of Al-Mahadin clan

The oral narratives reported that the history of Al-Mahadin inhabiting the villages of Samrah, Shihabiyah and Aziziya, located in the surrounding of the village of Ainoun, date back to the early seventh century AD, after the prevalence of Islam in the north of the Arabian Peninsula and the south-east of Jordan. Their grandfather was from Aziziya and lived in Mutah. Narratives mentioned that he came as an immigrant from Ninawahin Iraq and was one of the servants of

goddess 'Uzzah, from which the word Aziziya was derived. After his stability and his conversion to Christianity he became one of the workers of the Byzantine ruler, and after the Battle of Mutha in 8 AH 629 AD he became a supporter of Islam, from which the word Mahadin was derived [11]. One of the Mahadin's elderly in Ainun, who is considered one of the clan's recognized people in the village, mentioned that their origin is related to the tribes of Baqarah from Ahwaz Deirez-Zur on Euphrates River east of Syria, and the Baqarah origin goes back to Hussein bin Ali bin Abi Talib [15]. He also mentioned, in an undetermined date, perhaps at the beginning of the last quarter of the nineteenth century, that four brothers migrated towards the area of Tal Shihab, to the west of Daraa in Hauran in Syria, due to an internal conflict between two groups of Baqarah tribe, where they settled in Tel Shihab and were drinking from the oasis of Mzribon the west of Daraa. Then two of the brothers continued their journey towards the south, where they settled in the town of Bel'ama, on the southwest of Mafrq, and then one of them called Khalil or Shanab continued his trip and who will later become the founding grandfather of al-Mahadin clan in Ainun (fig. 5). He settled next to Tarawneh clan (one of the biggest clans on the south of Karak) and became part of the traditional Eastern tribal alliance (Al-Sharaqah) [12]. After that, Mahadin moved to allied with Al-Ma'aytah, one of the northern clans of Karak, and with whom he divided the land, thus becoming part of the Western Alliance (Al-Gharbah) which is the competitor of Al-Sharaqah Alliance. In the end, Khalil al-Mahadin lived in Ainun location after he got married and had three sons (Husain, Salemand Attia), each of these sons got married and had a number of children formed together a branch of Mahadin clan and are referred to as Al-Shunoub and are all from the village of Ainun [27].

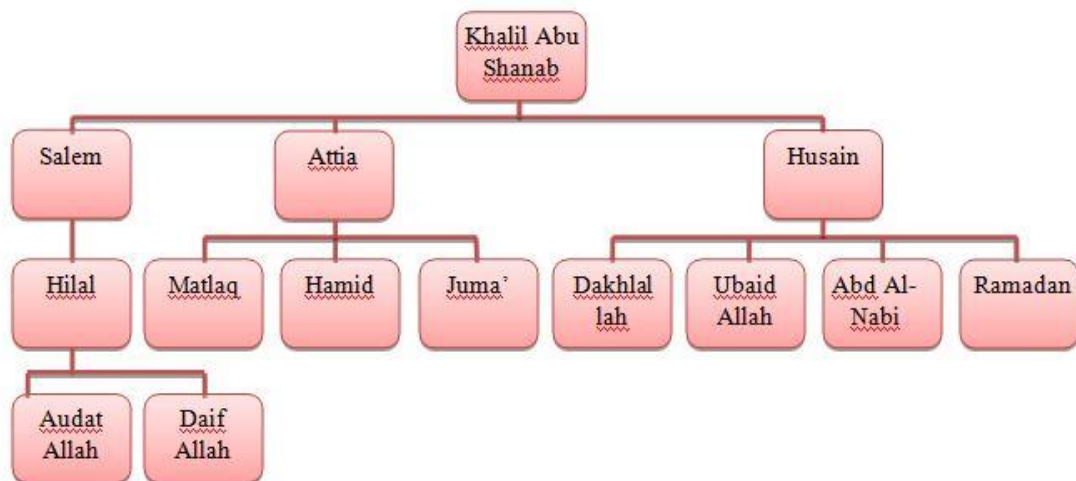


Figure 5. The kinship system of Mahadin clan in the village of Ainun. Source: Karak Court Documents, 1919. Liberally by the researcher

The land of Ainun was divided between the two clans of Al-Shamaileh and Al-Tarawneh from Karak. The northern part of the village belongs to Al-Shamaileh clan and the southern part belongs to Al-Tarawneh clan. During the first phase of settlement for Al-Mahadin, they managed to buy most of the village's lands and consolidate their relations with the surrounding neighborhood through marriages and the exploitation of the agricultural land surrounding the village (Department of Land and Survey, 1942).

### 3. The beginnings of settlement

#### 3.1. From caves to fixed dwellings

One of the advantages of the village is that it is located on an oval hill surrounded by valleys from three sides, in addition to the distribution of caves and caverns in the rocky cavities located in the upper parts of the hill, especially in the south and west of the hill. Due to this



topographical feature, in addition to the spread of wells and water springs, the site was chosen for habitation and settlement. Caverns and caves were used as a refuge, which are composed of a cavity in the rock. The caves are located in the upper parts of the oval hill. The caves were used in the early stages of settling as shelters before the use of fixed dwellings that are made of stone and clay. The first settlers worked to expand the rock cavities and make regular entrance for them. They were divided from the inside by stone walls to create multi-purpose rooms for accommodation and livestock. They also built annexes at the entrances and at the sides used for shelter and daily work.

One family or more used to live in the same cave (fig. 6). In the center of the cave there is the fire pit, used for cooking, illumination, warming and protection. Inside the cave, all daily activities were carried out. In the caves vicinity and slopes, pastures and water springs spread. Later on families moved to live in stone dwellings founded by the early settlers and located directly at the top of the caves over the hill. And unlike Palestine, Transjordan consists primarily of desert lands. These factors combined to diminish the numbers of skillful mason builders capable of achieving such structural elements as vaults and cross vaults. The most common type of structure in the Transjordan an rural house was the repeated arch structure [10].



Figure 6. Caves, where the inhabitants of Ainun village lived before moving to fixed dwellings  
Source: the researcher

Oral narrations predicted that the first building in the village was established in 1915, five years after the Karak Revolution; a social uprising against the Turks in protest against mismanagement, imposition of high taxes and compulsory recruitment in far areas (a field study). This revolution took place in 1910 and is well recognized in the local history, known as the outburst «habbeh». Later on, the process of construction continued by Hilal bin Salem bin Khalil Al-Mahadin, as the clan's brothers and cousins established the core of the Old Ainun by the end of the second decade of the last century. The construction processes kept expanding in compatibility with the degree of development and population shifts in the village. The number of dwellings in Ainun reached nearly one hundred dwellings in the mid-sixties of the last century. Ainun passed through several stages of urban development and at each stage a certain type of traditional architecture prevailed, until the construction in Old Ainun stopped in the early seventies of the last century and moved with modern style to the New Ainun located at the foothill to the south of Old Ainun.

### 3.2. Kinship and ownership in Ainun

Land and real estate properties in Old Ainun are distributed among the old aged owners living whether in Old Ainun or New Ainun where the majority of the population lives. Lands are divided into two types of ownership; «Sahih» that is an ownership under a title deed of property and «Miri» which means it is the property of the state but the clan has the right to make use of it according to the usufruct and land reclamation practices. Land owners under each type know exactly the size and limits of their property, especially after the land division procedure that was carried out in 1966, but the settlement didn't take place until 1991 (Ainun registry of ownership, 1946). To illustrate the ownership system, we present the family of Abdel-kareem Khalaf Ramadan Al-Mahadin as a sample, who descends from Khalaf Ramadan Al-Husain Khalil Al-Mahadin (fig. 7).

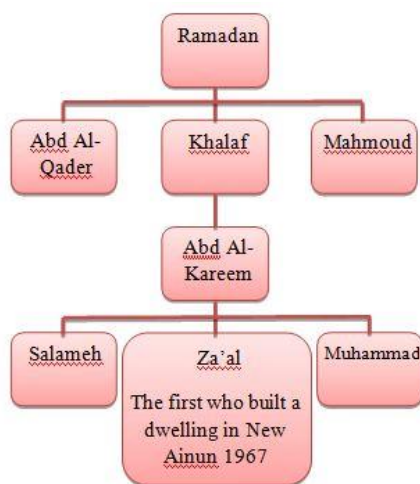


Figure 7. The kinship of Al-Mahadin family's descendants in Ainun village at the beginning of settlement. Source: Ainun registry of ownership, 1946. Liberally by the researcher

Abd Al-Kareem Khalaf Al-Mahadin bought 29 donoms of New Ainun lands from Al-Dumur clan from Al-Adnanya. He died in 1945. He had three sons, Za'al, Muhammad and Salameh. In 1966, land shares were distributed equally and registered under the names of male heirs only without the female heirs; a traditional local custom that was contrary to Islamic law. The three sons of Abd Al-Kareem own three traditional dwellings in Old Ainun, built by his father Khalaf bin Ramadan Al-Mahadin. The first dwelling is the largest and it consists of three vaults (Qanatir), the second: is of medium size and consists of two vaults (Qanatir), and the last one consists of only one vault (Qanatir). The first was inhabited by Muhammad with his mother, the second owned by the eldest brother Za'al and the last was for Salameh Al-Mahadin (See Ainun registry of ownership, 1946).

### 3.3. lifestyle in Old Ainun

Villagers depend on wheat and barley, irrigated by rain and cultivated over the lands and slopes of the hills surrounding the village, in addition to the cultivation of fruit, vegetables and forestry trees. The village is considered a place to live in and to house cattle. Also, some vine, fig and olive trees are planted near the water springs in the valleys on the north of the Old Village. Villagers also depend on raising livestock, especially sheep, goats and cows (the records of the Department of Finance affairs - Karak, 1952-1957), benefiting from the natural pastures and fields remaining after the harvest. Moreover, they care about raising animals such as donkeys and mules to be used in tillage and transport and for their suitability to the nature of the village location. They also take care of raising poultry inside the village in the residential areas where the annexes of animal husbandry were built, which provide additional food that people depend on for their daily living and for these rural villages in Jordan.

#### 4. Traditional architecture in Old Ainun

Traditional architecture is one of the most important elements of the inhabitance's material culture. This study we will show us the style and way of life that prevailed in the village as well as the nature and the phases of economic and social development. Ainun went through *three phases* that were enough to change its traditional character to contemporary modernity.

*The first phase* starts at the beginning of the twentieth century, i.e., from the beginning of the settlement in the Old Village in the south-west neighborhood in the village's hill, where dwellings are built according to the first old architectural style (the dwelling of vaults with tree trunks) (fig. 8).

*The second phase* starts at the beginning of 1940s, during the period of population growth. It is represented by the dwellings spreading over the northern side of the village's hill, built according to the second architectural style (the dwelling with a roof held on wooden or iron bridges) (fig. 9).

*The third phase* starts at the beginning of the sixties of the last century, during the period of development and population increase followed by the relocation of housing in the New Village of Ainun in the southern neighborhood with modern dwellings built with manufactured materials and cement (field study, 2015).



Figure 8. A sample of the first phase dwellings in Ainun, depending on arches to hold the roof  
Source: the researcher



Figure 9. A sample of the second phase dwellings in Ainun, depending on wooden or iron bridges to mount the roof. Source: the researcher

#### 4.1. Local narration of traditional dwellings construction

The respondent said: «My grandfather Ramadan and his brother Dakhilallah bin Husain bin Khalil al-Mahadin have experience in traditional construction. He decided to move from living in a cave to living in a dwelling. He chose a flat piece of land at the top of the cave. He gathered men and relatives and began collecting stones from the surrounding valleys' slopes, caves and remnants of old ruins»<sup>3</sup>. The result was a collective work or help of the villagers were they chose hard limestone rocks suitable for building and were refined by tools such as hammers, chisels and iron rock crushers brought from the old Karak market in front of the castle. When the needed quantity of rocks was collected, they started the process of lineation using white soil to draw the dwelling's needed size on the ground; then they dug the needed depth (60 cm). The base was then built with gravel stones and mud. The construction of the wall's course began with the large formed stones, and then the dwelling's walls were started to be raised all over the dwelling which consisted of one spacious room with two arches to lift the ceiling. At the front of the dwelling there was a yard, at its sides there were aisles with arches and doors to house the cattle and serve the family. Through the architectural field study of the old dwellings, two types of construction were found; each style prevailed over a specific period of time penetrated by an architectural pattern considered as a transitional phase. Some of the known traditional architects in Ainun: Salem bin Abdullah, Mohammed Al-khawaniq, Abdullah bin Salem Al-halalmeh and Salem bin Dakhilallah Al-Mahadin.

#### 4-2 The old architectural style

It is a main spacious one-room dwelling; it has a rectangular shape 12×6 m with a height of 5 m. In the center of which are two-vaults in the shape of arches or semi-circular arc that lift the roof. The empty spaces that intersect the vaults are in the form of small rooms and benches used for sleeping and raising mattresses, others have grain stores and the so called Corners «Zawaya» – the local label of the cabinets of clay, also, some shelves for food preservation. All these elements are located inside the main room, which opens on the yard by a rectangular door located within a vault topped by small ventilation windows. The squared yard has aisles with ceilings lifted over arches and vaults in the middle of these aisles similar to those in the middle of the main room, these aisles used for storage and preservation of grain and for housing cattle.

This dwelling is located in the southern part of the old neighborhood built by the brothers (Ramadan and Dakhilallah Husain Al-Mahadin) at the beginning of the twentieth century and is considered a sample of rural dwelling, which performs all the social and economic functions of the rural dwelling; as a shelter for the family providing the appropriate atmosphere for living and fulfilling all what the family needs in its daily life (fig. 10). The building was designed to suit the prevalent lifestyle of people that is based on traditional agriculture and raising livestock and poultry. In response to this lifestyle, the architectural elements attached to the dwelling such as terraces, storerooms, annexes and aisles were designed and distributed in a way that matches the economic and social functions of a dwelling. This stage becomes the stage of concerning in the construction of the courtyard. The courtyard house represents a model for the collective social, political and economic functions of the peasant community during the nineteenth century in northern Jordan (fig. 11). The various social systems in the study area were centered on kinship which were manifested in the form and order of the various spaces in the courtyard house (fig. 13-14). The nature of the landscape was a determinant factor in the location of courtyard houses, which was triggered by the climate in the area [4].

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<sup>3</sup> Field Studies in Ainun Village, Spring 2015 (through personal interviews).



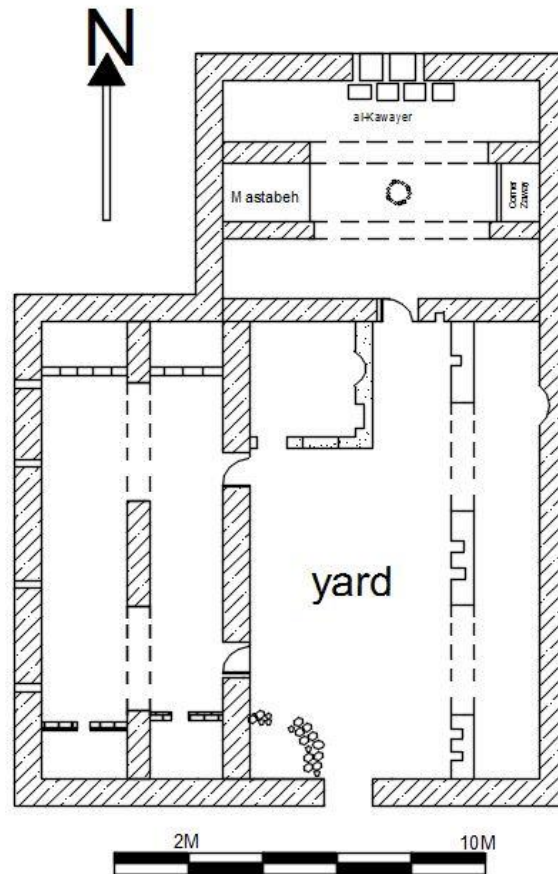


Figure 10. A model of the development of community-innate architectural design in the village of Ainun. Documented and drawn by the researcher

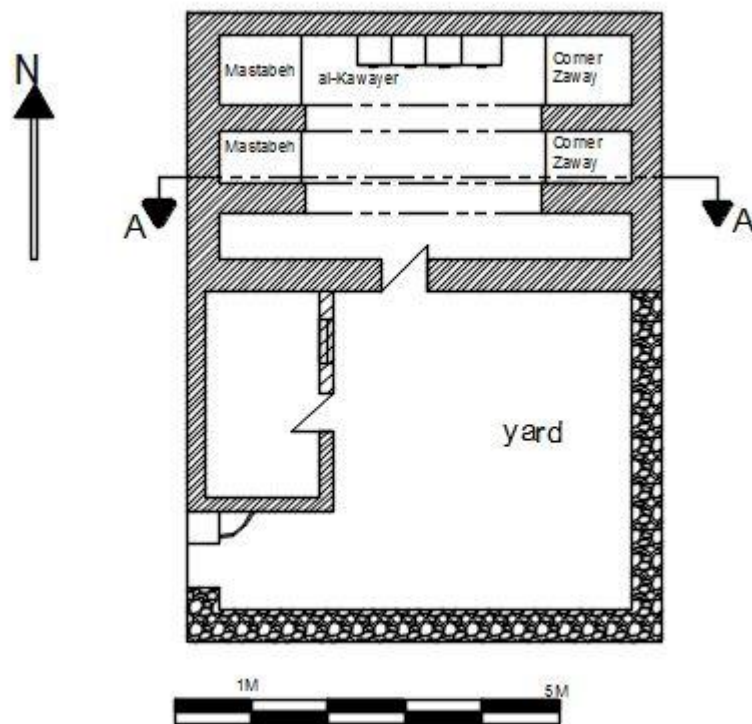
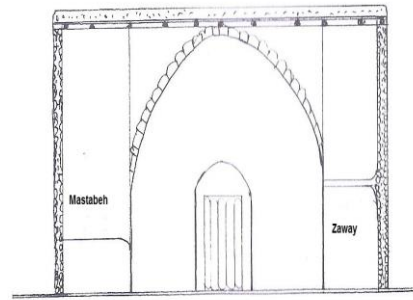


Figure 11. A sample of the development of the community-innate architectural design in the village of Ainun. Documented and drawn by the researcher

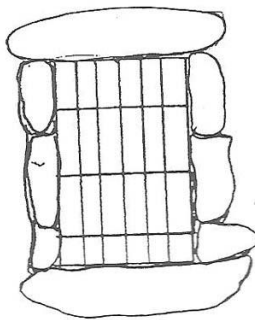


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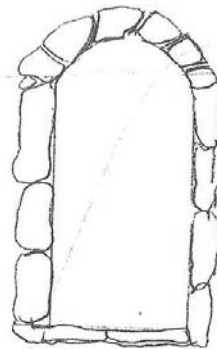
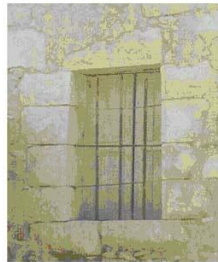


b)

Figure 12. Some of the internal details of the houses in the village of Ainoun in terms of materials and method of construction: a) a picture from the inside shows the current status of most of the houses in the village Ainoun; b) an illustrative sketch of an architectural section illustrating the method of construction in the village of Ainoun - the architectural section A-A of the plan in fig. 11



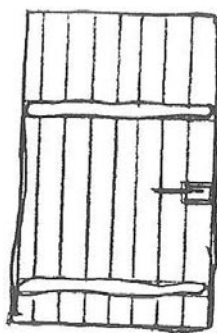
a)



b)



Figure13. The style of windows used in traditional architecture in the village of Ainoun: a) the model of the arched windows depends on the key stone; b) the model of rectangular windows that depend on the long stone (lintel). The resource is researcher



a)



b)



Figure 14. The style of doors used in traditional architecture in the village of Ainoun: a) the model of the doors made of wood, which are within a thick wall and end in the arch which depends on the key stone; b) the model of the doors that are made within a wall that is less thick and ends in a rectangle that depends on the long stone or wood of great thickness. The source is researcher

### **4.3. Building Materials**

The location's nature provided the primary building materials of hard limestone, used in most parts of the building, sand, soil, wood, tree branches and firewood. Stones are the main element in construction, they are available in the village surrounding slopes, and are carried on animals' backs to the construction location. Whereas soil is used to be prepared at the construction location itself, mixed with hay and straw. Mud was used to paint walls from inside with white chalk, brought from valleys and usually prepared by women participating in the construction process. Wood is taken from tamarisk, thistle, juniper, terebinth, cypress, and reed branches scattered near water springs and valleys' bottoms. Wild thorny plants are also collected from the hills' slopes where they are used alongside the firewood and reed to support the building roof.

### **4.4. Construction techniques**

The construction process starts by specifying the piece of land on which the dwelling is going to be built. The owner shall not exceed the borders of his neighbor's property, even if he is of the same clan. The land shall be flattened and the necessary building materials shall be prepared in sufficient quantities. The foundations of the dwelling shall be determined by wedges and ropes. Foundations depend on the land nature if it is rocky or clay. The walls are raised over the foundations in an organized manner to an adequate height. At the same time, stone arches are lifted as well.

The lifting process is in the form of internal and external stone facades, with small stones and mud filling the gaps in between. Walls are raised up to a height of nearly 3 meters whereas the arches basis are raised up to one and a half meters; that is till the point where the arch will start to bend where a frame is placed so the basis of the arch depend on it. The frame is made of straw bags and supported by wood and soil to obtain a regular arch shape. The construction can then proceed from the two ends of the arch alternately until the arch key stone is placed in the middle (The locker). When they finish building the arch depending on the frame and straw bags, they take off the hay bag at the top, which is located directly below the middle of the arch. The arch is then settled, and the process of spreading the roof begins by making a network of reeds secured to each other tightly and based on wooden trunks and twigs, covered with a layer of thorny bushes and a topping of mud mixed with hay covers the entire ceiling with a thickness of 40 cm, paved with a cylindrical stone roller.

The roof has to have an inclination to facilitate the discharge of rain water through gutters that vents water away from the walls. During building walls some holes are left on the dwelling's edges and at the top of the entrance for ventilation. The door is opened within an arch in a curved shape that ends with a lintel stone at the top of the door; above it come the holes of ventilation (fig. 15). The entire construction process lasts from fifteen to twenty days. The entire family and clan members cooperate in the construction process and one of the skilled masons is assigned the process of chopping and shaping stones.

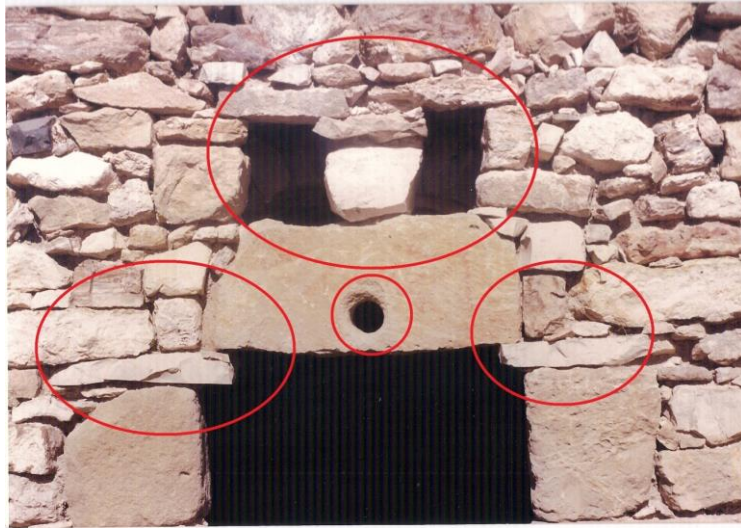


Figure 15. Installing of the lintel stone and the ability to use the available material to be the structural solution to carry the wall, despite the shortness of the lintel stone there is persistence on the need for ventilation and lighting. Source: the researcher

#### 4.5. Community-religious architecture

The first who built a permanent mosque of stone and mud in the village was Dakhilallah and his brother Ramadan bin Al-Husain bin Khalil. Khalil is the grandfather and the founder of Al-Mahadin clan in Ainun village, thus the clan has waited for the founder's grandchildren to promote settlement in the village and to start living in stone dwellings; after three generations of the clan lifetime (These names were mentioned in a specific register of Ainun on 11/5/1926, record 925-931, p. 80, Karak Land Department). The mosque is located at the center of the old buildings that were built at a later phase. The mosque was built according to the style of buildings that belong to the transitional period (fig. 16). The building consists of one spacious rectangular room; the prayer hall, which is (6×10) square meters and 5 meters high, with a single curved arch from west to east, over which the building's roof is lifted. The roof is made of thick branches, reed and mud. In the northern wall of the mosque the door hole is opened in a rectangular shape on the eastern side of the facade. It was executed in an arch and topped with a rectangle lintel stone decorated with an inscription (Rule is only for Allah) (fig. 17). The phrase is surrounded by two crescents and a pentagram.

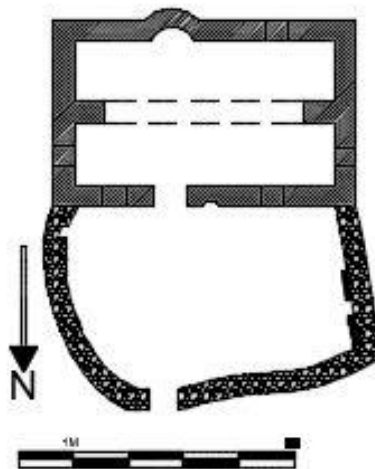


Figure 16. Ainun mosque scheme, representing a sample of community-religious innate architecture in Jordanian villages. Documented and drawn by the researcher





Figure 17. The written inscription «Rule is only for Allah» on the door's lintel stone with the two crescents and a pentagram. Source: the researcher






At the door's west and east sides there are two squared windows, as well as at the western and eastern facades of the building. The thickness of the walls is one meter. In the middle of the facade there is an inverted arching the shape of a hole with water well. In front of the building there is a yard with a door at the eastern side. The mosque is built of semi-trimmed stones; the trimmed ones surround the door and windows at the top of wall as the frame form. The interior walls are painted with white gypsum and green paint. This type of building is characterized by spacious spaces and by the disappearance of rooms that were used as benches or closets. This construction is compatible with the construction in the hot and desert areas where the architectural openings of the mosques are small and high and the upper surfaces are level and are ventilated through their roofs. The characteristics of the materials used and available within the urban environment play a role in the typical mosques, so the characteristics of one material impose a certain form on the building for example, the mud building system imposes a specific structural system – the bearing system [6].






## 5. Internal architecture and the tools used in the daily life

Traditional housing facilities used by Ainun residents, after the period of settlement in the traditional dwellings, were made of the natural resources available in the local environment as a way to manufacture the needed tools and equipment used in their daily lives. They built their homes from the local environment materials; soil, clay, wood and herbs. From their animals they produced food and used goats' hair and sheep' wool to make rugs, clothes and bags, from their skin they created the tools they need to prepare milk and yogurt called «Shekwa». Out of branches they made agricultural tools such as traditional plows and transport equipment that depends on animals. Out of wood they made troughs such as «Mihbash», and from soil they made «Kawayer», «Rawaya» and «Matameer» to store food, they also made pottery utensils, water crocks and home ovens «Tawaben».

As for the interior design of the rural dwelling, it was implemented to suit the uses of daily life of the dwelling inhabitants, but when it comes to internal furnishing and distribution of tools around the house it was carried out in a simple uncomplicated way. This interior design consists of a number of vaults interspersed with sitting places, Rawaya and benches, which number depends on the number of arches inside the dwelling. The benches that were for sitting are usually used as sleeping places, one sleeping place for the paterfamilias and another for the rest of the family members. Table 1 combines multiple images with an explanation of ethnography in Ainun village as a sample of the Jordanian village.

Table 1. Samples of different Jordanian villages

<p>Al-Rawaya: a type of cabinet made of clay. It has a hole at the top connected to an opening in the dwelling's ceiling to provide it with components for storage; wheat, barley and hay. At its internal front it has gaps to enable taking out the stored components</p>	
<p>Al-Kawayer: it is a type of utensils, made of soft soil clay called «Samqa», wood or iron. It can be fixed or movable with different sizes. It has a wide hole at the top to fill it with storing materials like flour. The hole is closed with a ball of cloth or iron. Women in the family used to decorate it with geometric and vegetal patterns.</p>	
<p>Al-Rawshan (Matwa): made manually of wood and used to lift mattresses</p>	
<p>Al-Mihbash: traditional wood handicraft industries. It is a wooden hollow container, made of trees' trunks. The best are those made of terebinth. Painted with dark color, inlaid with silver or copper pieces. Decorated with different shapes over it and its opening is trimmed with white metal. Mihbash has also along hand used to smash coffee grains</p>	
<p>Al-Mihmasah: traditional Handicraft Industries. It is a tool made of iron or copper, used to roast coffee on fire. It consists of a cylindrical hollow plate with a long hand to hold it. Accompanied with a long rod called (the hand of the Mihmasah), it has a Semicircle at its top and it is used to stir the coffee</p>	

<p>Al-Sa'n (Al-Shakwa): handmade traditional leather Industries. It is made of goat skin, dried by sun and sault. It is used to prepare butter and buttermilk (Al-Shaninah). Whereas Al-Thibyah is used to preserve solid yogurt and it is called the yogurt of Thibyah</p>	
<p>Al-Raha: hand-mill – traditional handicraft stone industries. Stones were used for grinding grains. It is a rounded stony tool made of hard basalt, consists of two pieces with a hole at the middle to pure grains inside. It is stirred with a wooden handle fixed at the edge of the upper piece. Decorated sometimes with drawings and trims</p>	
<p>Tabun oven – a large convex container, has the shape of a semi-circular dome made of mud and soft soil reinforced with hay, has an opening at its top, closed with a clay cover. Its bottom is covered with gravels called Radif, theses gravels give the shape of cavities on the dough that is placed overturned (Tab) on these gravels and from here came the word «Tabun». The Tabun's fuel is from firewood and dry dung</p>	
<p>Iron sheet oven (Saj) – it is another type of homemade bread, called Al-Shirak. The way of preparing it differs from the Tabun bread, Where a sheet of iron (Saj) is used to prepare this type of bread. The Saj is a thin convex piece of metal. It is placed over three stones called “Ladaya.” After preparing the bread, it is preserved in Al-Juneh; a dish made of Sebel straw; that is wheat stalks. Food is presented on a Maqsaf; a rounded plate made of wheat stalks as well.</p>	
<p>Al-Banura or Al-Siraj (night lamp) – traditional handmade glass industries to illuminate the dwelling. It depends on a wick dipped in kerosene (Katz) from one side and the other side goes up to illuminate a transparent crystal glass case</p>	

## 6. Conclusions

Through following the architectural development phases it was found that a dwelling underwent several architectural and functional changes that were appropriate to the developments and changes in the people's culture and life style in Ainun village. By the end of the sixties and after founding the New Ainun and leaving Old Ainun, traditional buildings have been permanently abandoned and replaced by modern dwellings built of materials made of cement, sand, iron and stone embellished according to a new style where the building consists of several rooms and each room has a specific function such as reception, sleeping, cooking and sanitation services.

Some traditional dwellings in the Old Village, which escaped demolition, were still inhabited by people and others used for storage and sheltering livestock, nevertheless; they are threatened with demolition and identity obliteration. The study drew the attention to the importance of the geographical location, its topography and the natural environment in Ainun village as an attraction factors for the human rural stability and how the old traditional architectural style was a model of a rural dwelling, so was considered as an ethnographic material document through which we were able to identify the nature of the economic and social system that prevailed in most of the old Jordanian villages.

Through studying the social and architectural structures, highlighting the architectural development phases, kinship and ownership systems of the village's community, we found that the stability process in the village took place after three generations where the first dwelling has been constructed out of stone and clay. Later on, the process of construction developed in line with the community development, and the architectural methods varied during the second half of the last century. This was followed by the migration of Ainun villagers from Old Ainun to live in New Ainun according to an architectural style suitable for their cultural and lifestyle's changes. This was a common feature of villages and rural communities in Jordan.

## 7. Recommendations

1. Calling for the preservation of the traditional village of Ainun and the restoration of life there, with the need to apply scientific standards in the method of preserving this heritage.
2. Try to benefit from applying the principle of partnership between ministries, the bodies concerned with heritage and the community to find a common formula to preserve these villages of heritage.
3. The initiative to provide incentives by the government, which encourages the villagers and investors to rehabilitate and develop the village's buildings, especially in the sector of tourism where such villages will be active and will function well if they continue in the tourism sector.
4. A national plan shall be set and implemented to list all the heritage villages in the Hashemite Kingdom of Jordan and to implement a national strategy for the preservation of these villages.
5. Organizing architectural planning competitions to reach the best solutions capable of establishing a link between traditional heritage and the way to employ and benefit from it in functions that preserve its activity.

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## ABOUT THE AUTHORS

### **Mohannad Tarrad**

Associate Professor in Department of Architecture Engineering, Faculty of Engineering, Al-Bayt University, Mafrak, Jordan  
Specialization Architecture and heritage  
e-mail: [ms-tarrad@aabu.edu.jo](mailto:ms-tarrad@aabu.edu.jo)

### **Abdel-Aziz Mahmoud Abdel-Aziz**

Associate Professor in Department of History Faculty of Arts and Humanities,  
Al-Bayt University, Mafrak, Jordan  
Specialization Anthropology  
e-mail: [abdelaziz\\_mahmod55@yahoo.com](mailto:abdelaziz_mahmod55@yahoo.com)

## ОБ АВТОРАХ

### **Моханнад Таррад**

Доцент кафедры архитектурного проектирования, строительный факультет Университета Аль-Баят, Эль-Мафрак, Иордания  
e-mail: [ms-tarrad@aabu.edu.jo](mailto:ms-tarrad@aabu.edu.jo)

### **Абдель-Азиз Махмуд Абдель-Азиз**

Доцент кафедры истории, факультет искусств и гуманитарных наук Университета Аль-Баят, Эль-Мафрак, Иордания  
e-mail: [ms-tarrad@aabu.edu.jo](mailto:ms-tarrad@aabu.edu.jo)