Leen Fakhoury
Rukni Sweiss
Ruqn Al Handasa
P. O. Box 9830
Amman, Jordan

Leen Fakhoury and Rukni Sweiss

Ṭayyiba "A Thriving Village"*

Introduction

The aim of this paper is to study a fading vernacular heritage as represented at Ṭayyiba, a village in the southern part of Jordan, located within the moderate mountainous climate region of Jordan. This village offered a potential for a thorough study for what it represents of an intact example of village, that still contains some vestige of life.

Although a thorough historical study is not available, it is interesting to note the phases of development in the architecture and the planning of the village that relates it to the development of other villages of Jordan, and can provide a prototype for village study, specifically of the mountainous regions.

The study focuses on the house village prototype and its evolvement. It also tries to put into context the different elements of a village: its pathways, fields, water sources, houses and mosque, and other public facilities. The study also tackles the existing status and conditions of the village and its inhabitants, in order to provide some future prospects of this village and to outline some of the lessons inherent in this heritage, in order to project some strategies and policies for their continuous existence and growth.

1.1 Location

Ṭayyiba lies within the governorate of Ma'ān, Wādī Mūsā region, which is to the west of the city of Ma'ān along the Sharāh mountain range (FIG. 1). It is located about 9km to the south of the town of Wādī Mūsā, at an altitude of 1350m above sea level (FIG. 2).

The old agricultural settlement of Ṭayyiba occupies more than 40 dunums of land, overlooking from the west the Petra mountain ranges. The main approach to the old village is along the main road from Petra to Rājif, and al-'Aqaba, which separates it from the new village of Ṭayyiba.

1.2 Ṭayyiba Today

Ṭayyiba today is a village of 2865[1] inhabitants, 40% of its population work in farming, the rest work in different sectors, such as the army, or at companies in al-'Aqaba or Ma'ān. 5% only work in commerce. The people of Ṭayyiba rely mainly on rain water for agricultural purposes and on spring water to a lesser extent.

The new village of Ṭayyiba has prospered on the account of the old village, which stands there almost deserted or turned into storage barns nearer to the fields. The old village of Ṭayyiba is subjected to continuous deterioration due to many factors.

1- Human Factors

An identity problem related to the new westernized standards of living that affected all underdeveloped countries, where mud and stone village houses were classified as backward, arose. The migration of people to large cities and commuting with other developed parts of the country accentuated this attitude. Old villages became unsuitable for the new modes of life.

Problems related to upgrading the infra structure, car roads, electricity and building technologies, led the inhabitants to leave their old houses for new concrete units. New planning policies and housing projects encouraged the need to build at new sites adjacent to the old village.

2- Natural Factors

Age and time are the prime elements accelerating the deterioration of the building stock. Mud roof houses can be very efficient, but need continuous maintenance. Cement as a material is not homogeneous with the basic mud constituent of the roofs. This could lead to different material attitudes and new cracks developing. The deterioration of the roof and its collapse could lead to further deterioration problems of the walls.
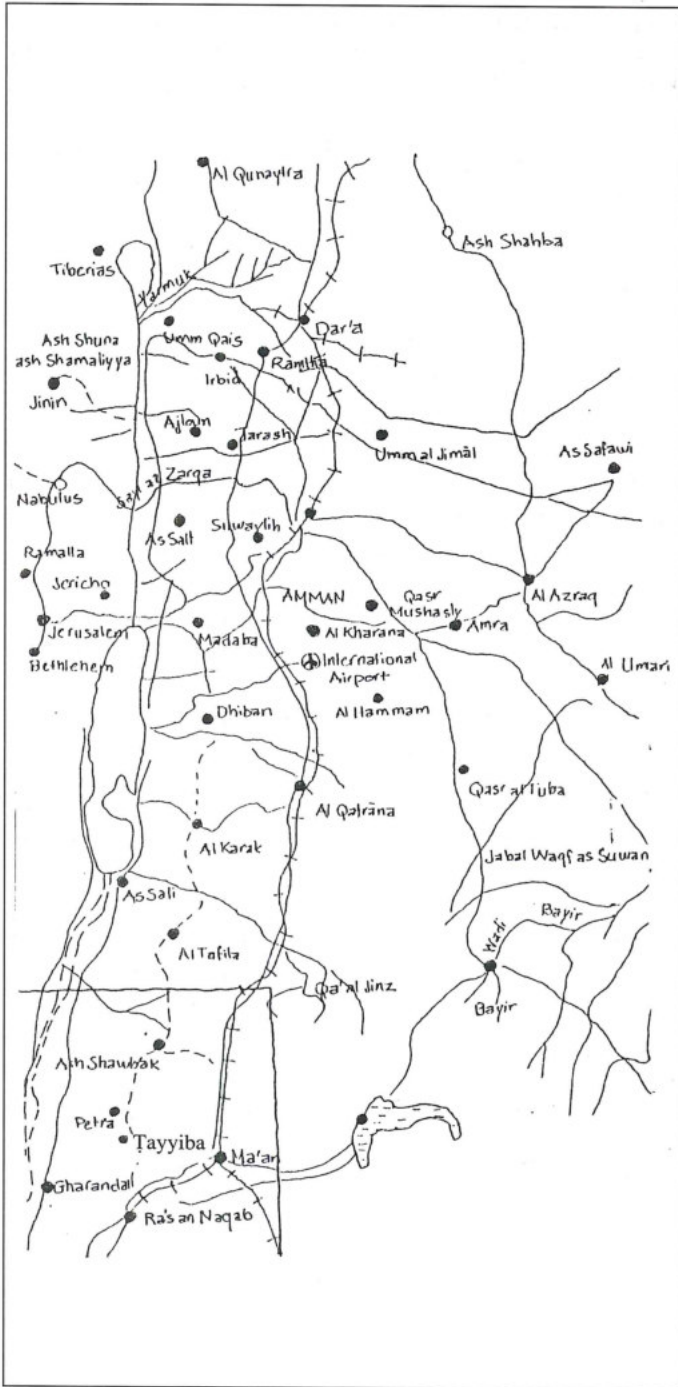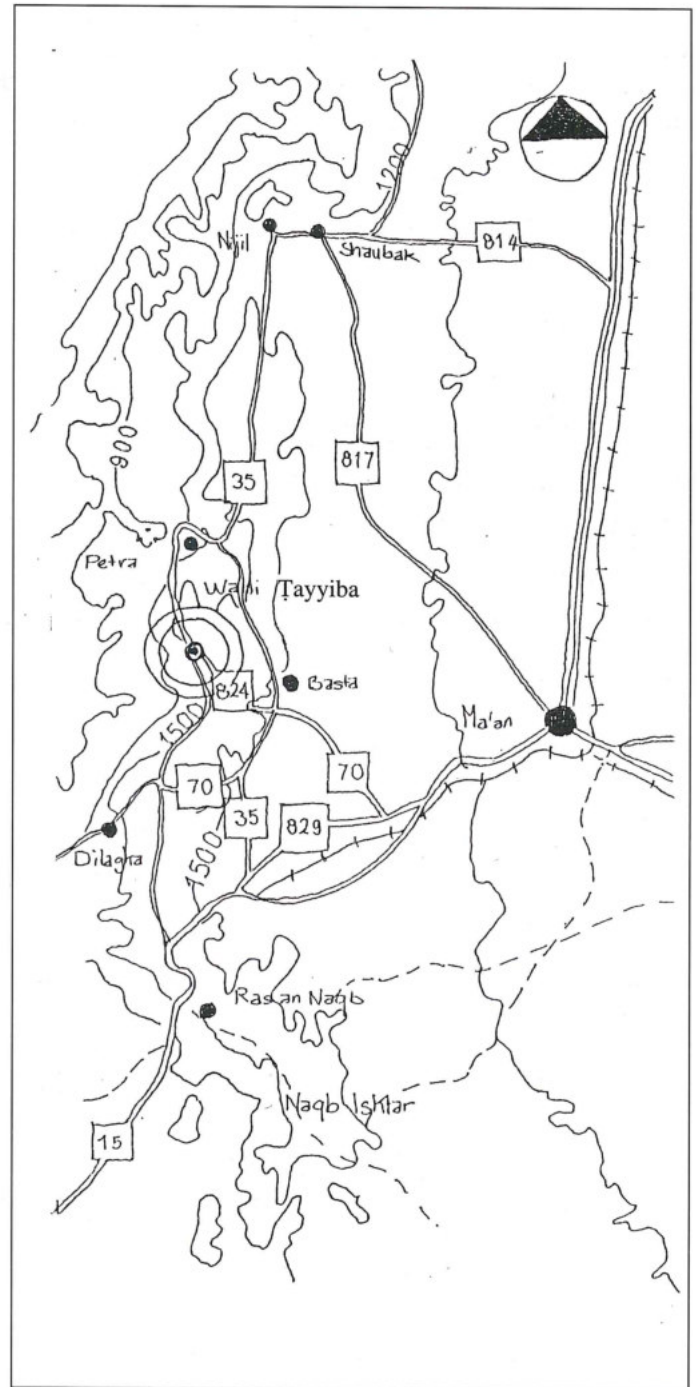
1. Location of Ṭayyiba in Jordan.

2. The southern region of Jordan.

1.3 The History

The region of Wādī Mūsā witnessed the prosperity of several civilisations throughout the ages, since the basic needs for stability and prosperity were available: water sources, fertile land and a strategic location in relation to trading with surrounding areas.

"Aṭ-Ṭūr", the caves, provided basic shelter for many settlers at Ṭayyiba. Not enough information about the particular history of Ṭayyiba has been researched or recorded. Further historical and archaeological investigation could discover that its history is most probably welded within the folds of the early history of man; as is known of the history of the surrounding areas.

The clans in Wādī Mūsā were named after Banī Layth "Layāthna", and lived in the village of al-Jaī which is located at the centre of the existing village of Wādī Mūsā.

362

The nucleus to the "Layāthna" tribe was originally formed of al-'Ubaydiyya, Banī 'Aṭa, al-'Alāya and al-Shrūr, who lived as bedouins all around the valley and united for self existence against the other bedouins, living in the mountains.

Al-Layāthna lived in simple stone houses during winter, and during summer their houses became stores and barns for their food supplies. Their livelihood was based on agriculture and some trading with the West Bank of the Jordan River as well as the pilgrims on their way to Makka.

Security and stability helped the settlements of the Layāthna to prosper although plague attacked the area between 1840-1870 and the locust attacked their villages between 1920-1925. All through the dry seasons the Layāthna left al-Jaī and settled in the surrounding mountains.[2]

With the return of stability and the establishment of Transjordan, life returned to al-Jaī. Land was distributed amongst the four clans. And with the increase in the number of population, several clans started to leave the centre "al-Jaī" and resettled at the surrounding mountain slopes.

Al-Rawaḍiya, al-Khlayfāt as well as al-Sa'adāt who are part of al-Shrūr clan of al-Jaī came to Ṭayyiba some 120 years ago. They built part of the old stone village as storage barns which were used afterwards for lodging in winter time. Its land was first used for raising their cattle and agriculture, but afterwards they settled there completely. They first occupied the flat areas of the site, "which had some ruins that could date back in its occupation to the history of the Nabataeans and Romans."[3]

2 . ARCHITECTURAL ANALYSIS

Ṭayyiba represents a threatened vernacular pattern of villages, in the southern part of Jordan, at the turn of the century. Its traditional features represent a typical pattern of architecture,[4] distinct in its indigenous simplicity, impulsiveness, and in harmony with its local environment; be it the climatic factor, simple engineering methods, economical factor or social order.

The simple forms of stone houses, the random stone and thick mud walls are still standing there, as a continuous evidence of a genuine builder closely related to the land form, to man's basic need for shelter and to the lifestyle of a farmer. Yet all of the previous solutions have reached a high level of development in providing efficient environmental solutions, while still maintaining their simplicity and authenticity.

2.1 Site Features

Many water springs are located within the vicinity of the

village and fields, in addition to a small creek bordering its planted olive and fig terraces. 'Ayn Ghazāl, 'Ayn Ḥamma, 'Ayn Ṭayyiba and Krayb provide available water sources for the village.

Several natural caves and openings, scattered in the surrounding mountain slopes, provided primitive shelters for the first settlers. The village site was probably chosen to overlook the fields in order to maintain security and accessibility to the field crops and the villagers.

2.2 Planning of the Village

The village planning resembles that of many small villages spread on the mountains of the rural lands of Jordan. The nucleus of the village started nearer to the fields, and later on spread about with the growth of the village. The new village developed along the main road from Petra to Rājif and al-'Aqaba, to the north and west, to natural limitations and locations of the planted fields (FIG. 3).

An intricate and meandering network of pathways reflects the organic nature of the village. The interwoven pattern and tissue of the village houses and public buildings provide an indigenous example of a vernacular knowledge transferred through the ages.

The organic tissue of the clustered units, forms small alleys opening on to several major and other minor open areas, sāḥāt and nodes (FIGS. 4, 5).

A mosque is situated on the one end of the village, while a group of converted commercial units developed on the northern approach of the site at a later stage and
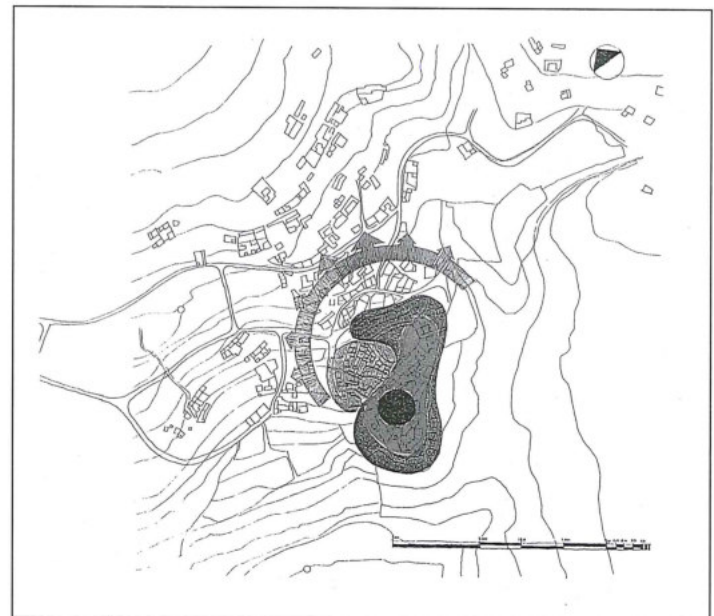

3. The old village of Ṭayyiba: stages of development and growth patterns.

[2] Department of Architecture/University of Jordan; urban design studio, *Wadi Musa; Demographic and Historic Study*, unpublished report 1991.
[3] Mayor of Ṭayyiba, field investigation, 1991.

[4] Taleb Rifaii, Ruba Kana'an and Muhammed Yaghan, *Iraq Al-Ameer, Bardon; Architectural Features of Jordanian Villages*, Jordan University Publications, Amman, 1988.
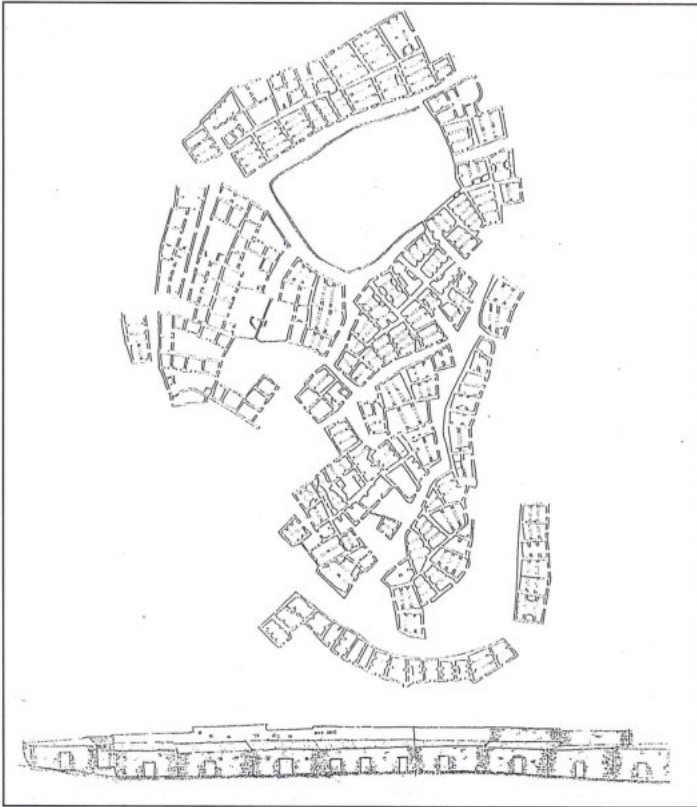
4. Existing plan of Ṭayyiba village.

with the prosperity of the village (FIG. 6).

2.2.1 Existing Road and Pathway Network
The main approach to the site is from the north and the west along the main road from Petra and Wādī Mūsā, where the new village Ṭayyiba has spread.

A network of major and secondary pathways organize and link the different areas of the old village (FIG. 7).

Major pathways are usually linking pathways going along the contour lines. Secondary pathways link the major pathways together. A third hierarchy is the dead ends which branch off major pathways to provide accessibility to other land plots.

2.2.2. The Villager's House
The old village is basically an agricultural village, its houses were built to protect and overlook the fields as well as to provide shelter and storage facilities for their inhabitants, human or cattle, and their crops.

Typical farm houses along the main pathways and courts were built of one unit, as in a one clear space or of a one space formed by a repetitive modulation of arched walls (FIG. 8).

The rhythm of everyday life patterns associated with the farmers' role is fully reflected in his household. A typical farmer's house should accommodate his family, his animals, their food stock, his farming equipment and
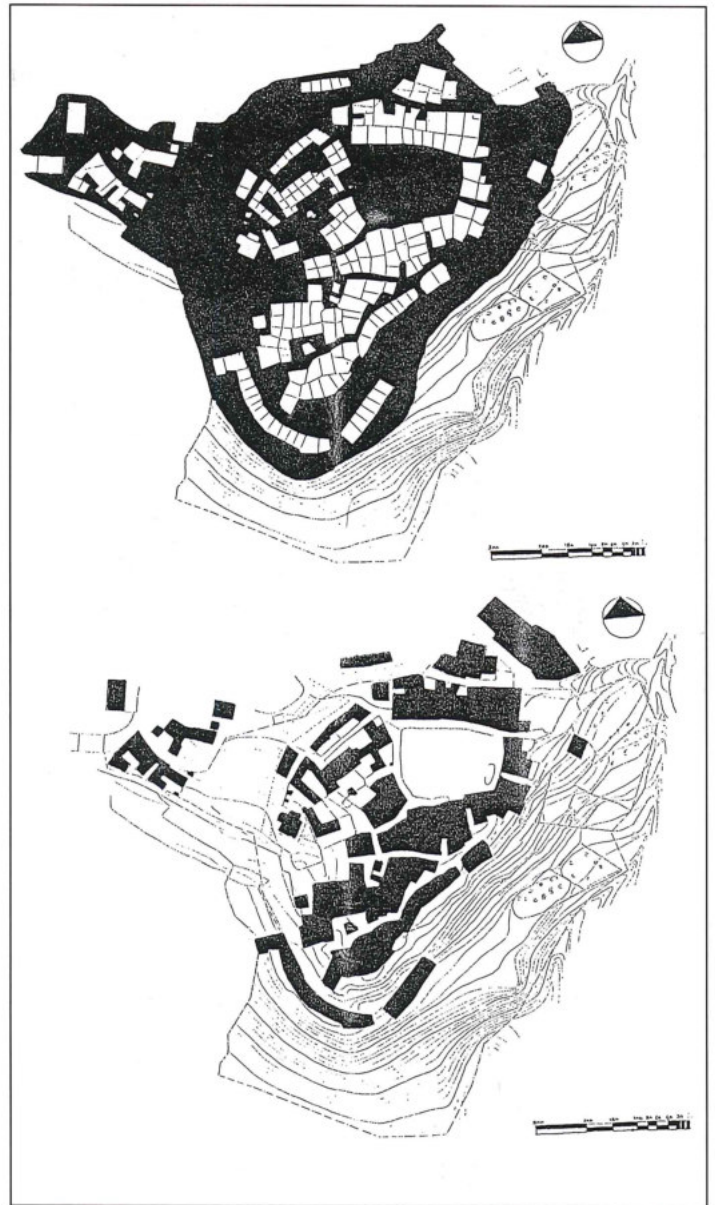
5. Positive and negative spaces of the village.

food storage space.

The rhythm of the day and night cycle is associated with outdoor and indoor facilities. During day, the farmers are in the fields. Cooking and other household activities are usually practiced in open air. At night the animals are brought inside. The farmer and his family usually sleep indoors.

The cycle of summer and winter is also reflected in the use of space. The house provides shelter for the farmer's family and his cattle during winter, while in summer they can sleep outside and roam around the fields and even move to Wādī Mūsā (FIG. 9).

Specific terminologies are related to the use of space such as *ar-rāwiya*, designated to describe food storage units along two arched walls used for storing hay for an-
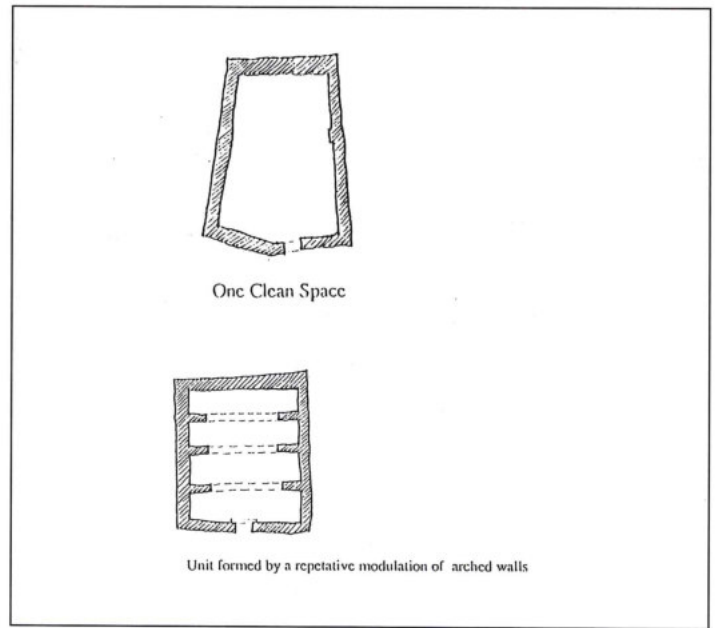
6. Village zones.

7. Network of the village.

8. Spatial organisation/basic unit.

maṣṭaba.

The simple module of a villager's house evolved according to new needs, to the rise of the economic status and the rise of the level of technology related to the building activity.

New patterns evolved, the two bay house, which is an illustration of the need for more space, two arched walls were planned, and in other cases additions to existing rooms were planned for further extension (FIG. 10).

With more prosperity, the courtyard (*ḥawsh*) house evolved; which is a later development related to settling and trading with surrounding villages and towns where the roots of urbanism had evolved. The *ḥawsh* or the terrace became the transitional space away from the public pathway.
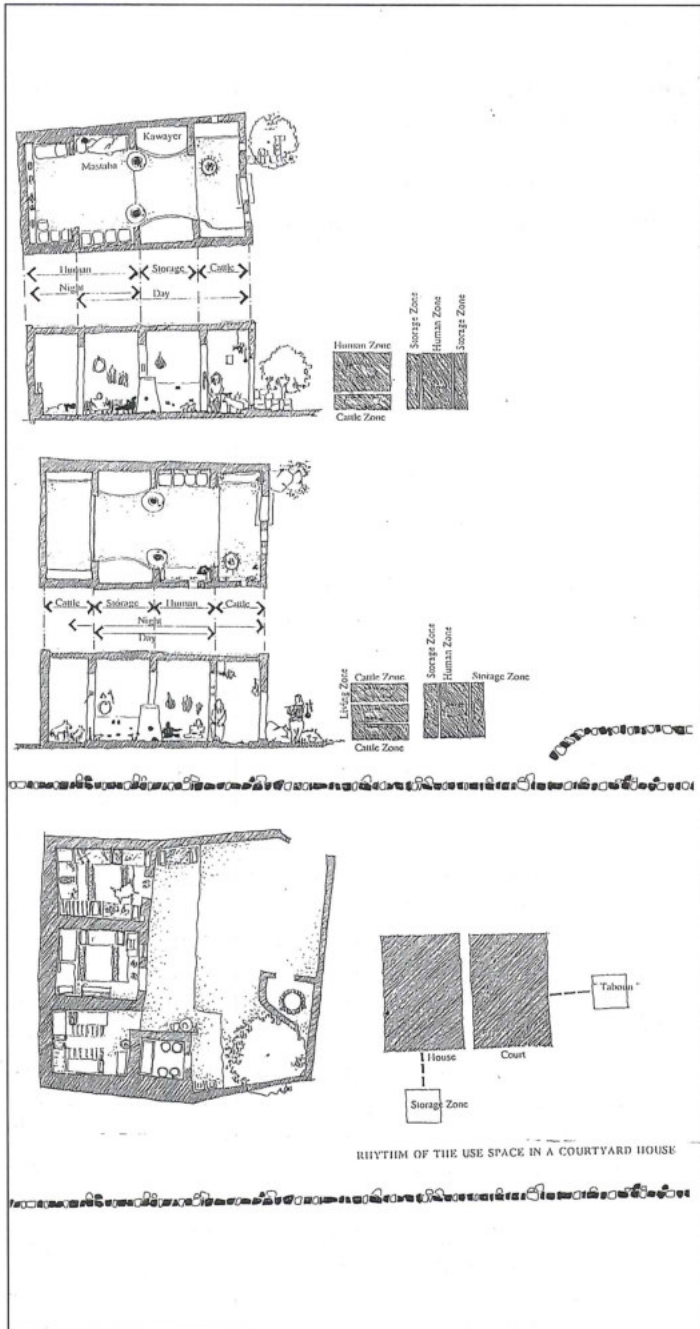
The three bay house is another expression, where rooms are aligned along both sides of a longitudinal centralised outdoor space (FIG. 10).

The arcade house is a special feature of the grand house where a semi covered transitional space (arcade) is designed to connect the different rooms opening on the *ḥawsh*.

2.2.3 Cluster Organization

A cluster of houses was a direct response to land formation and its limitations, as well as to social patterns and modes of privacy, interwoven within an economical system based on agriculture, availability of construction materials and traditional technologies, and the environmental factors reflected in the climatic considerations.

Clusters of houses were terraced along paths, flanking either one or both sides, or surrounding outdoor communal courts (FIGS. 11, 12).
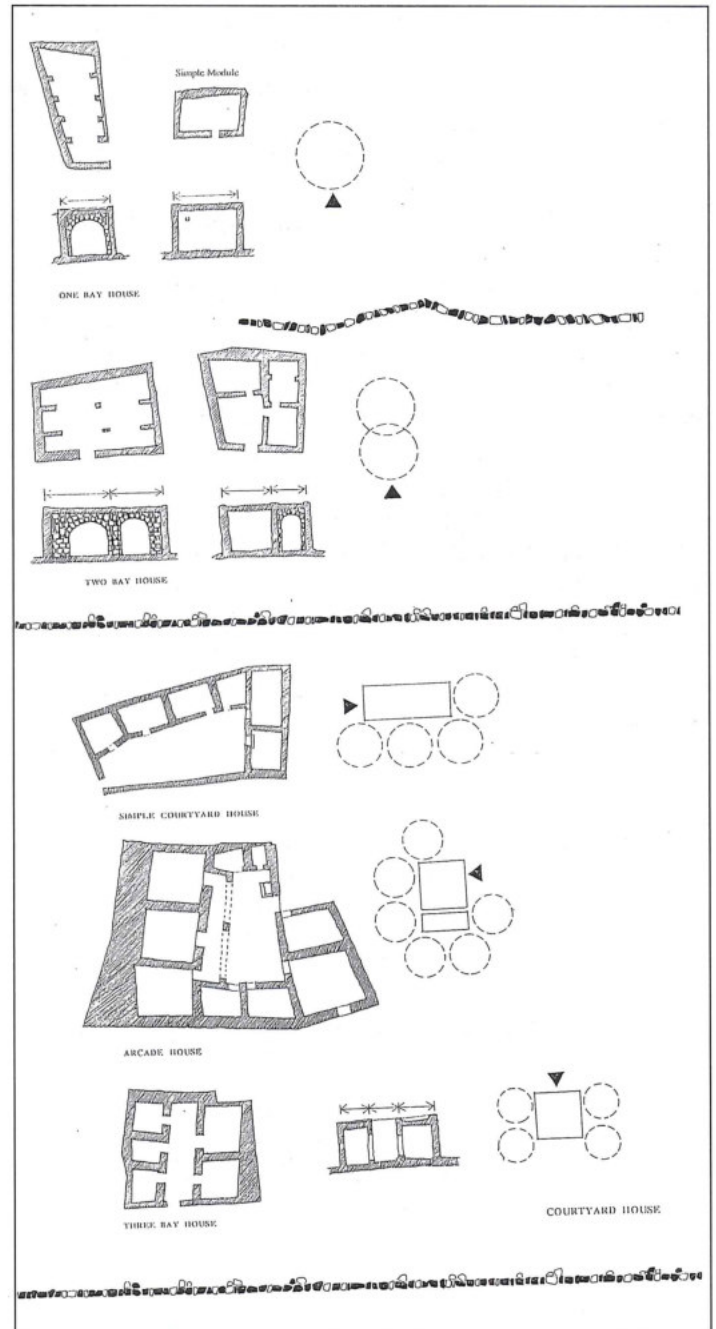
imals. Other independent units, *al-kawāyir,* were modelled of mud and hay in the form of barrels, used for storing cereals for the household.

A villager's house is a multipurpose space used by the farmer, his family and his cattle. The front layers are usually designated for the cattle, while the rest is for different household activities and sometimes raised on a

365

9. Rhythm of the use of space, the simple module.

10. Evolution of new models.

Different inside-outside relationships were developed, either based on a direct relationship between a unit and the public pathway or through a transitional space, be it a courtyard or combined with a semi covered transitional space (FIG. 13).

2.2.4 Dealing with the Topography
Appropriate terracing of the slopped terrain was adopted to encounter difficult slopes. Terracing was used for both agricultural and building purposes, using loose stones

and small boulders to create series of low wall profiles.

Flat terrain was developed at earlier stages creating outdoor communal courts and yards to provide for the houses. The pattern and form of the village units reflect the contour levels.

2.3 Structural Analysis
Local materials were directly used for building purpose, the villager has used such simple technologies since early times (FIG. 14). Rubble stone, undressed stones col-

lected form the surrounding mountain slopes were the main structural element of the walls. Together with mud, the bonding agent, thick walls of 60-100cm were constructed to support flat roofs.

Roofs were constructed in layers; a mattress of bamboo or tree branches on top of 'ar'ar (*Juniperus Phoenicia*) treated logs were laid as a framework to support the multi layered mud tampered roof, constituent of basically mud, hay and water and some additives such as animals hairs and ash. Large stones were sometimes used on top of the main log to provide support for the mud roof.

The roof was well tampered and rolled by a special stone roller after which it becomes water resilient and its surface becomes smooth. Continuous maintenance and good water drainage is necessary for such type of roof.

With the prosperity of the villagers, bigger rooms were needed and arched walls were necessary to support larger spans and bigger room spaces (FIG. 14). The rhythm of the spaces were thus following a structural rhythm based on the length of the wooden logs found and their capabilities for supporting roof loads.

With the rise for the need for larger spaces, two bayed arched walls were used for providing for larger houses (FIG. 10).

With the introduction of iron steel railway tracks and cement after World War II to the construction field, new materials were used by the villagers. Such development has spread widely in the construction field whether in the countryside or the major cities of Jordan, as well as Bilād ash-Shām. Ṭayyiba, an example of continuous development, responded to the new materials (cement, I-sections) while still maintaining its traditional character (FIG. 15).

Due to different ideological, political and economical issues, eventually the villagers abandoned their old traditional houses for new concrete units. The traditional buildings still stand almost deserted as a witness of old achievements.

2.4 Architectural Character

A functional discipline was used for the treatment of the facade. The logistics of the environment and the potential aggressiveness of an invader resulted in an almost dry character of a small unit with one major opening (FIG. 16). The village looks like a continuous bead wall of small heights.

A typical facade of one household comprised a door opening and some small openings for ventilation. At a later stage and with the introduction of the courtyard house, more openings were used on the internal facades (FIG. 17).

Some vines, lemon, olive, fig and other fruit trees were planted in the yards and gardens of the village.

2.4.1 Visual Analysis

The village clusters form introverted environments, where some of the paths open suddenly to grand natural views of surrounding mountains, or major *sāḥāt* and other minor nodes. The paths usually follow the contours encompassing terraced clusters of houses, where a path opens on one side to the house clusters and on the other side on to the harsh mountain slopes.

2.4.2 Architectural Details

A wooden 'ar'ar lintel was usually used over windows and doors (FIG. 18) and sometimes large stone lintels were used. 'Ar'ar was the main timber used for door openings, while metal doors were a later addition (FIG. 18).

Arched walls were built of stone of up to 80cm thickness and more (FIG. 4). Metal sheet water spouts were used to discharge the rain water drainage of the flat mud roofs.
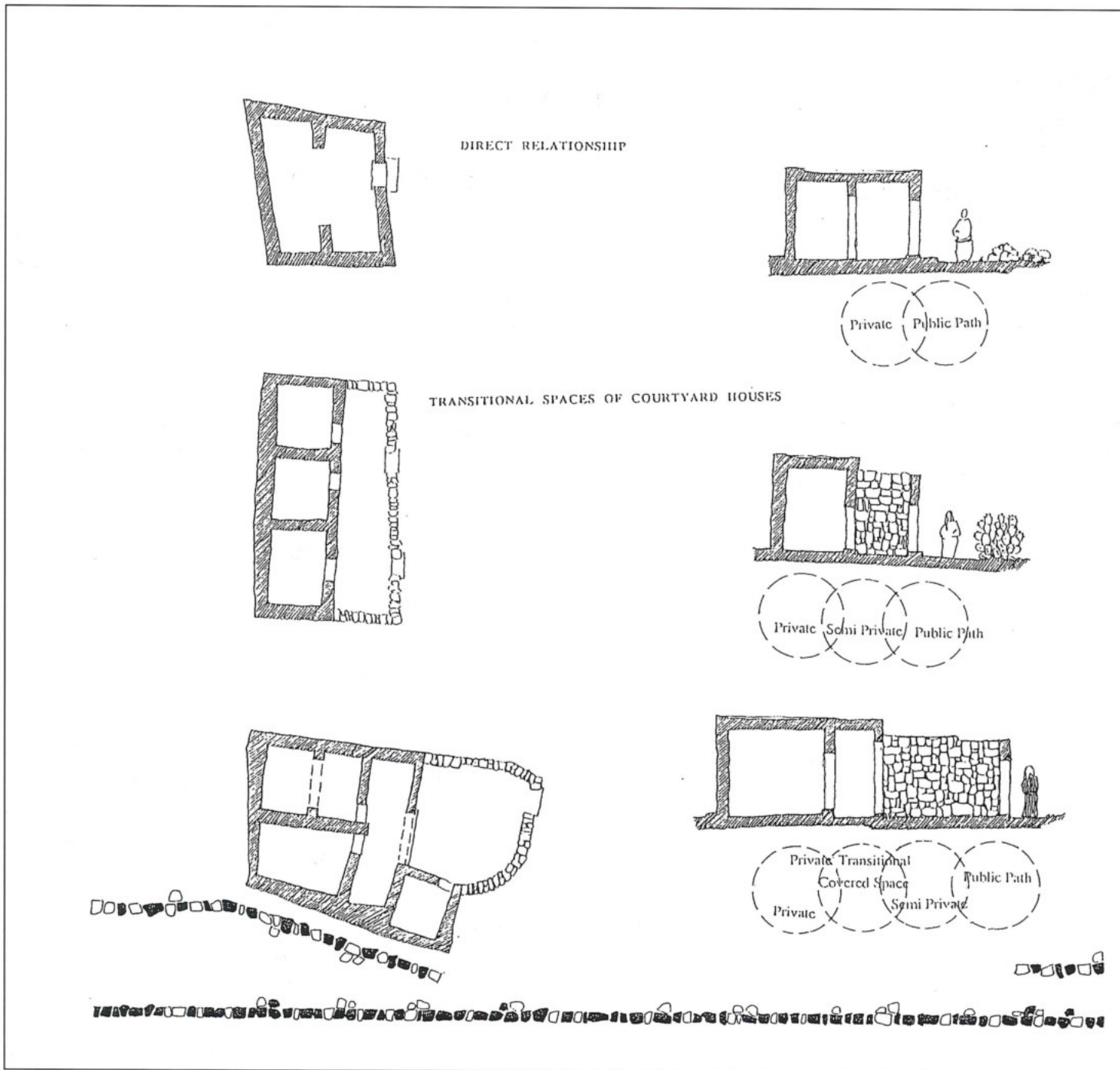
Finishes: Floor finishes were of well compacted earth sprayed with water. Internal walls were sometimes plastered with mud, ash and hay plastering to soften the internal effect of the random stone walls.

Conclusion

The problem that is being faced here is not just the issue of a discarded architectural heritage, but also of a lost identity of the rural lands and its inhabitants.

Proper investigation of the rural settlement and the local architecture of Jordan, be it of the mountains, the plains, the Jordan Valley or the desert should be conducted as an exercise of documentation for cultural and historic continuity. The deserted state of such old villages necessitate general guidelines and policies to be adopted by the different planning levels dealing with the following issues:

- The existing development policies aiming at social development neglect the existing craftsmanship related to traditional building technology, its economical feasibility, availability of local building materials and the environmental values related to that level of passive traditional technology.
- Women's role in building and maintenance procedures has been neglected for a long time. New roles can incorporate such outlooks.
- Most of the modern building activity is provided by labourer from outside the village, using reinforced concrete imported technology. If the traditional technologies were adopted and adapted, further job opportunities can be provided for local people.
- The need for the development of available building techniques and maintaining passive design principles, could provide us with better built up environments for

DIRECT RELATIONSHIP

TRANSITIONAL SPACES OF COURTYARD HOUSES

Private | Public Path

Private | Semi Private | Public Path

Private Transitional
Covered Space | Public Path
Private | Semi Private

11. Inside/outside relationship.

living — cooler spaces in summer and warmer in winter.

- No rehabilitation scheme is valid without a proper investigation of an economic viability of upgrading the old fabric, taking into consideration the local need for a proper living environment. It is imperative also to provide better job opportunities to maintain the continuity and prosperity of the village life and raise the level of awareness and pride of the villagers in their village and its heritage.

Our aim is to record our heritage and culture for the inherent lessons within, no just for an intellectual exercise of a "Romantic Elite", who think they can still live as was in the past.

Part of old Ṭayyiba will still be thriving since it has been adopted for a scheme of revitalisation and tourist rehabilitation undertaken by the private sector and the Ṭayyiba villagers. This project comprises a pioneer ex-
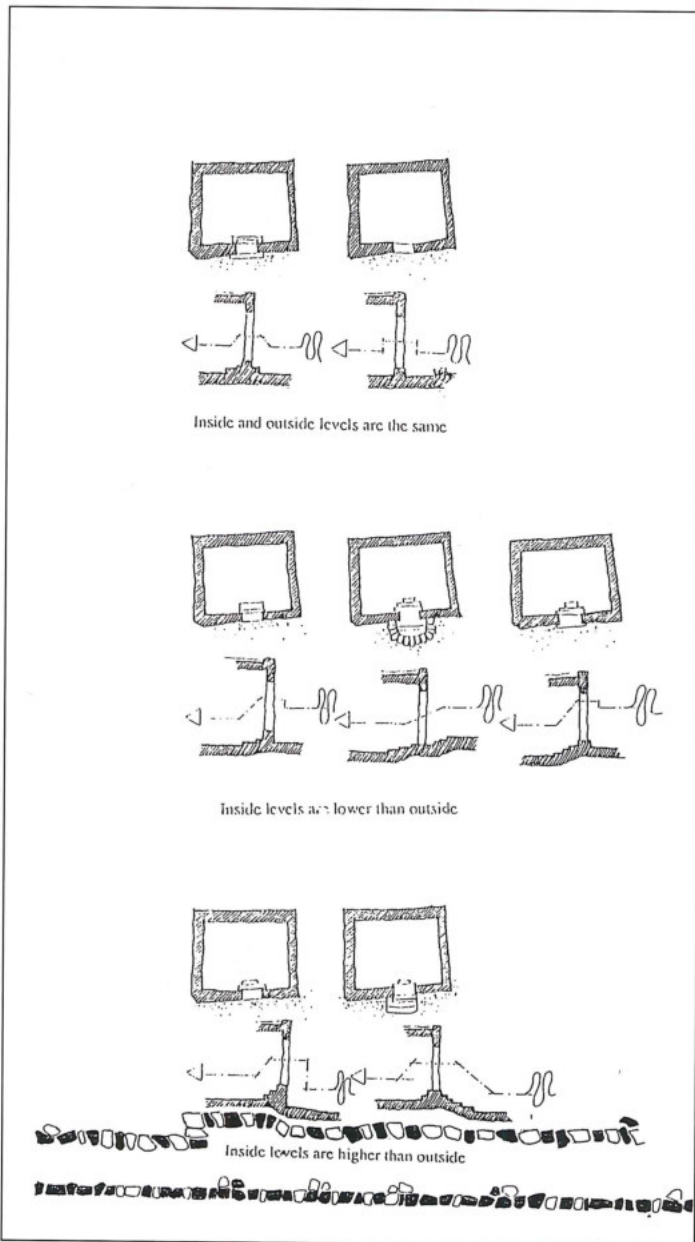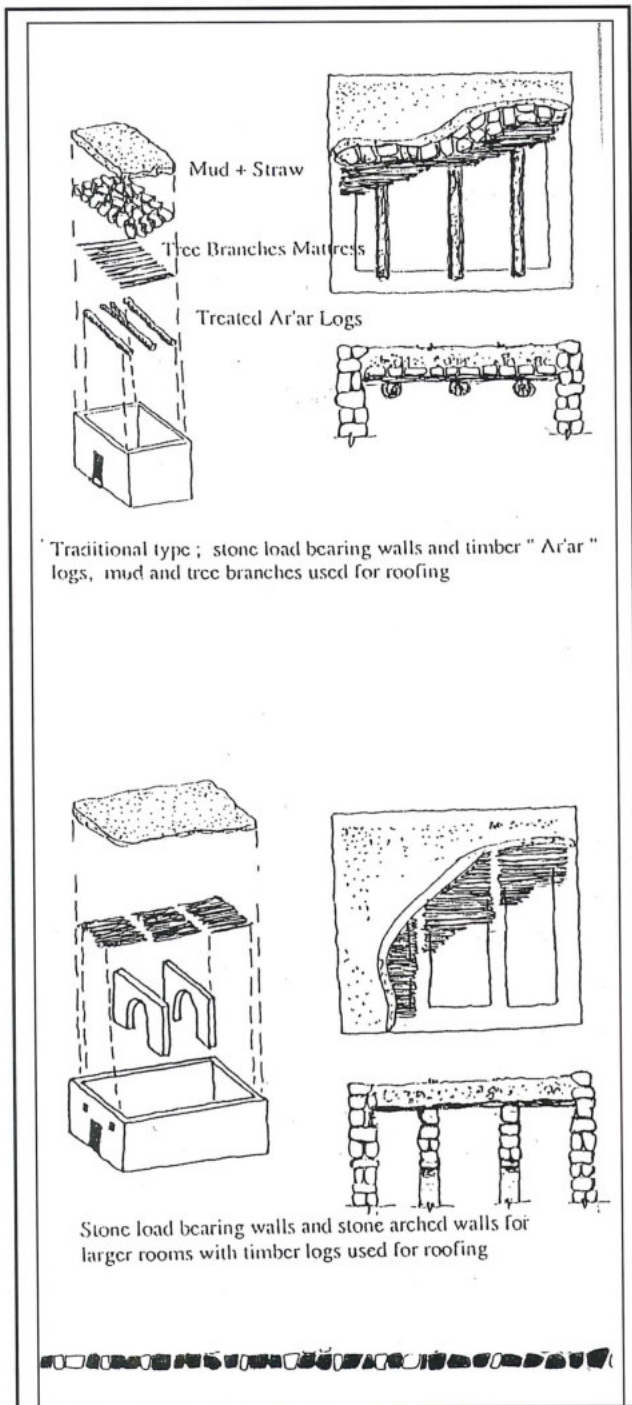
12. Entry levels.

perience in revitalising the old village of Ṭayyiba as a tourist village. Ṭayyiba, an intact example of a Jordanian village near the ancient city of Petra, could create a new attraction point for the south, thus providing further social and economical development.
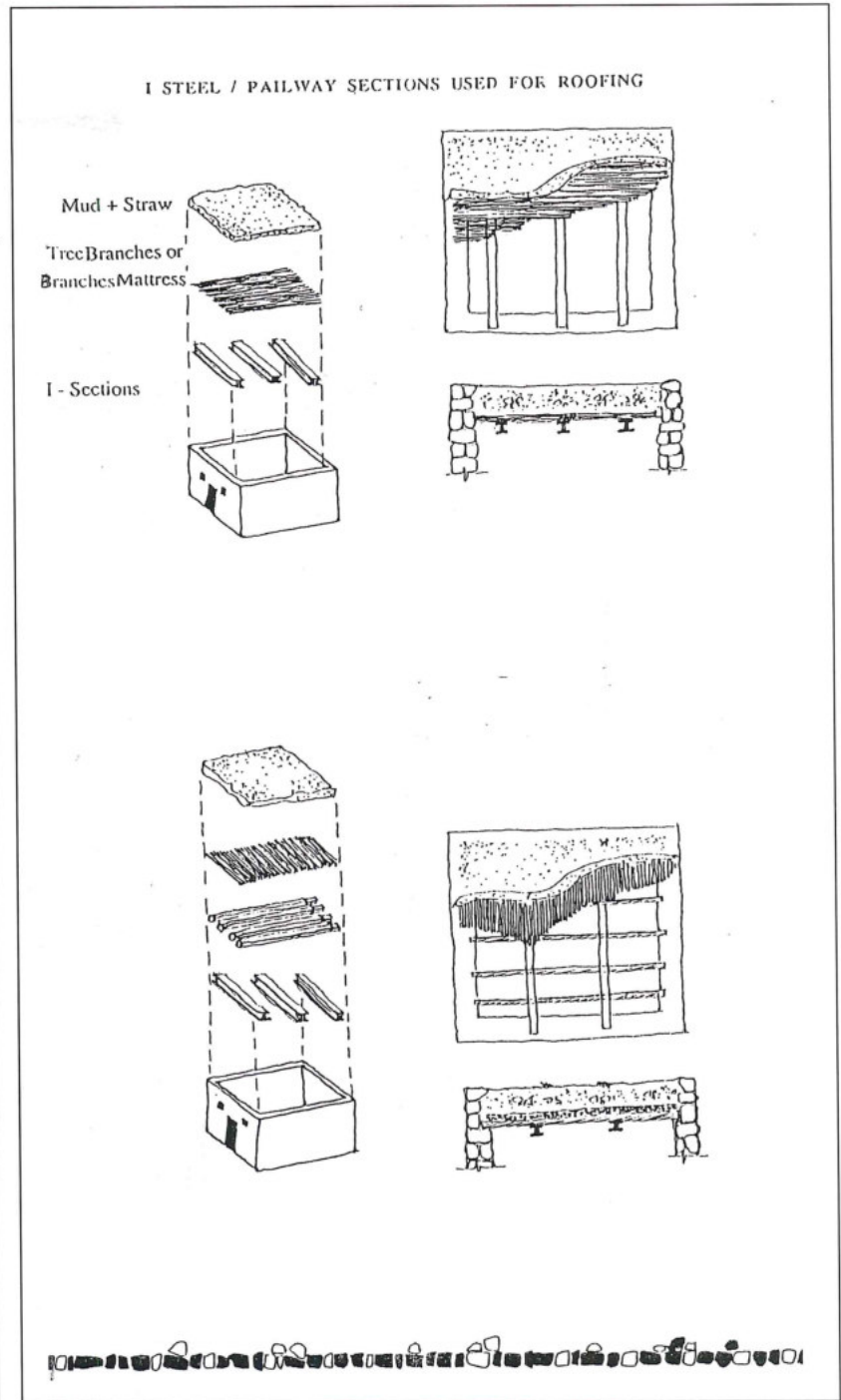
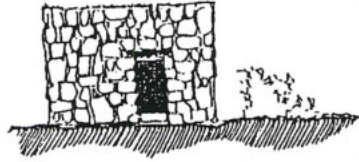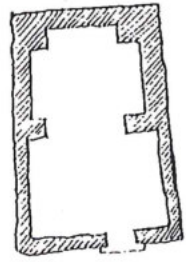The old villager's houses can still have a future role, but not all our villages are Ṭayyiba.
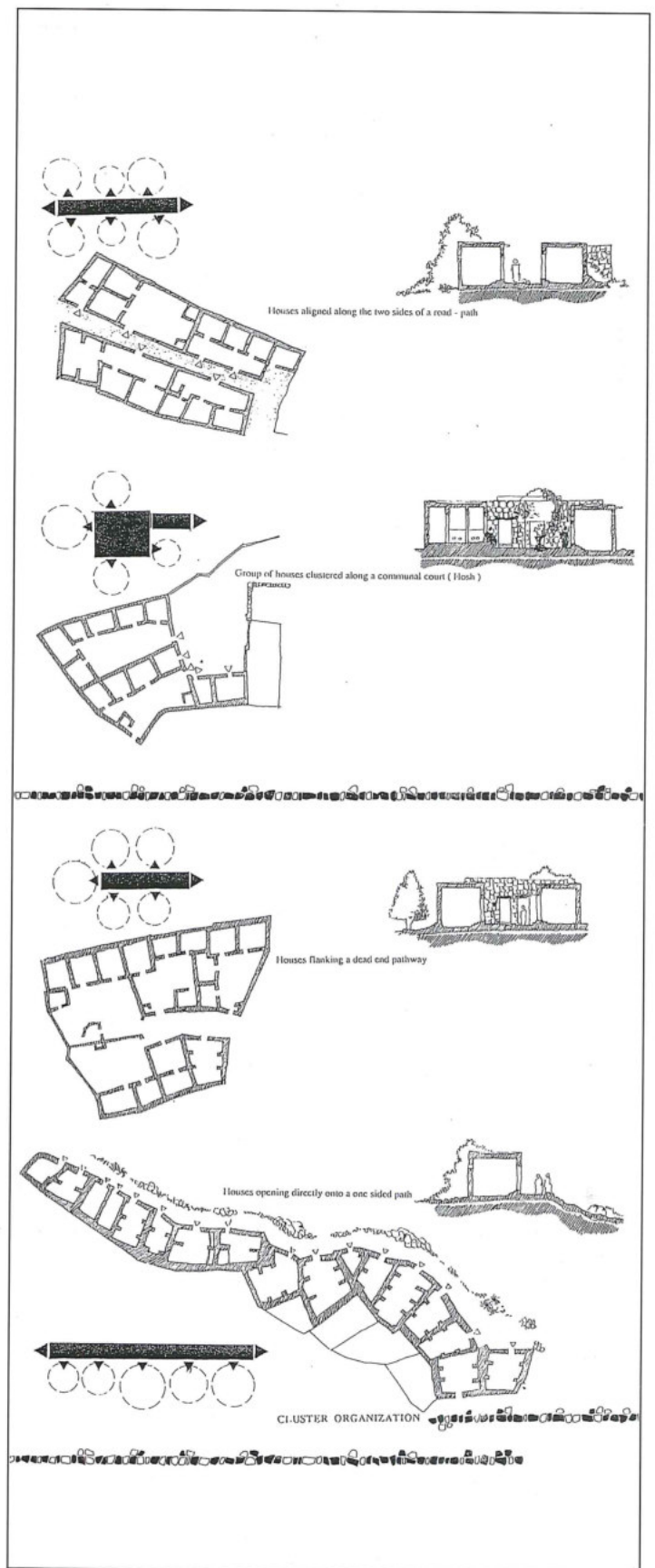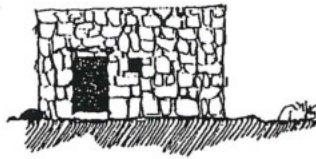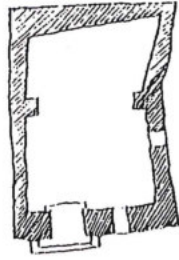

13. Cluster organisation.

Mud + Straw

Tree Branches Mattress

Treated Ar'ar Logs

Traditional type ; stone load bearing walls and timber " Ar'ar " logs, mud and tree branches used for roofing

Stone load bearing walls and stone arched walls for larger rooms with timber logs used for roofing

14. Structural analysis.

I STEEL / PAILWAY SECTIONS USED FOR ROOFING
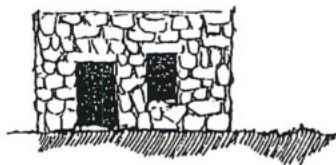
Mud + Straw

Tree Branches or Branches Mattress

I - Sections

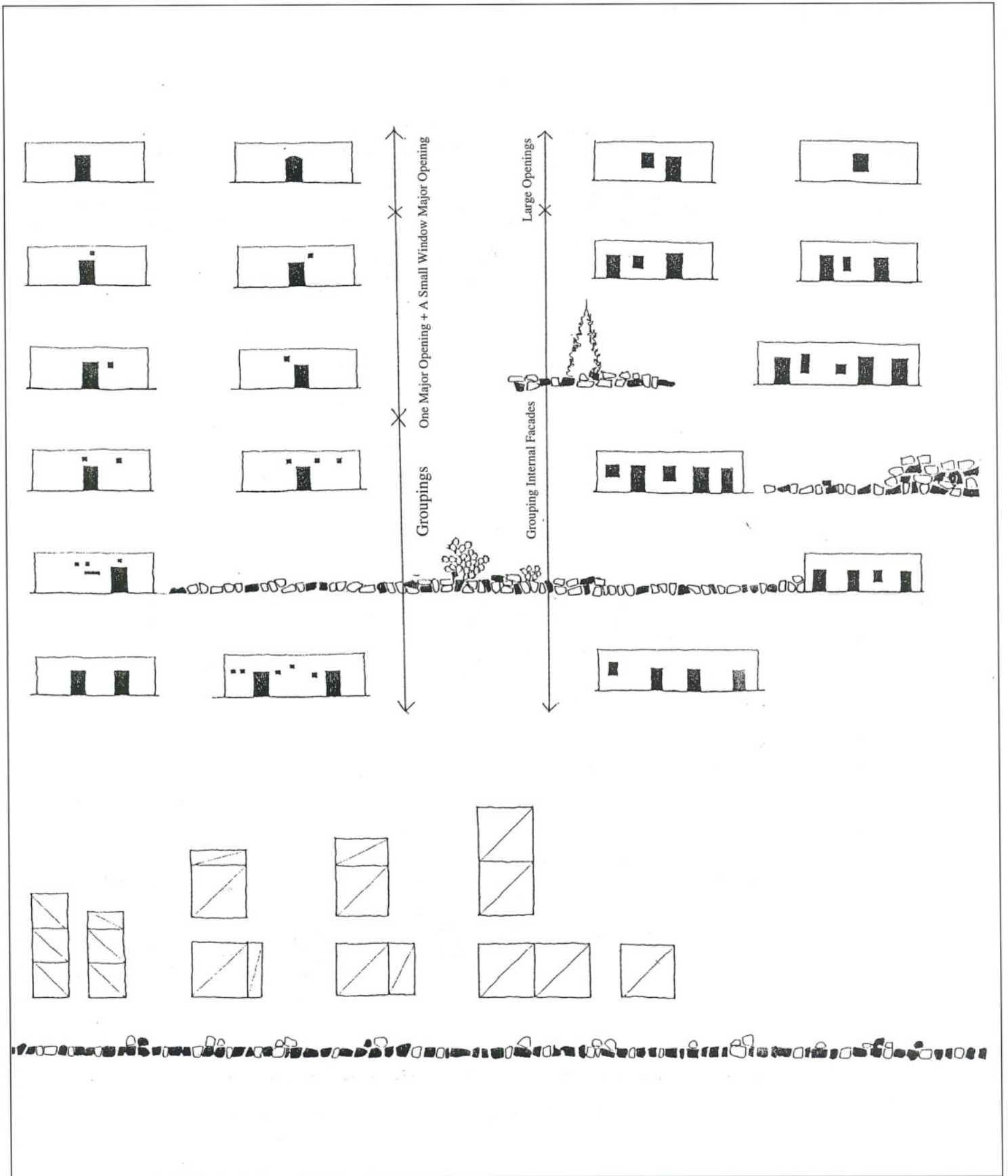15. Roofing development.

Facade with once major opening

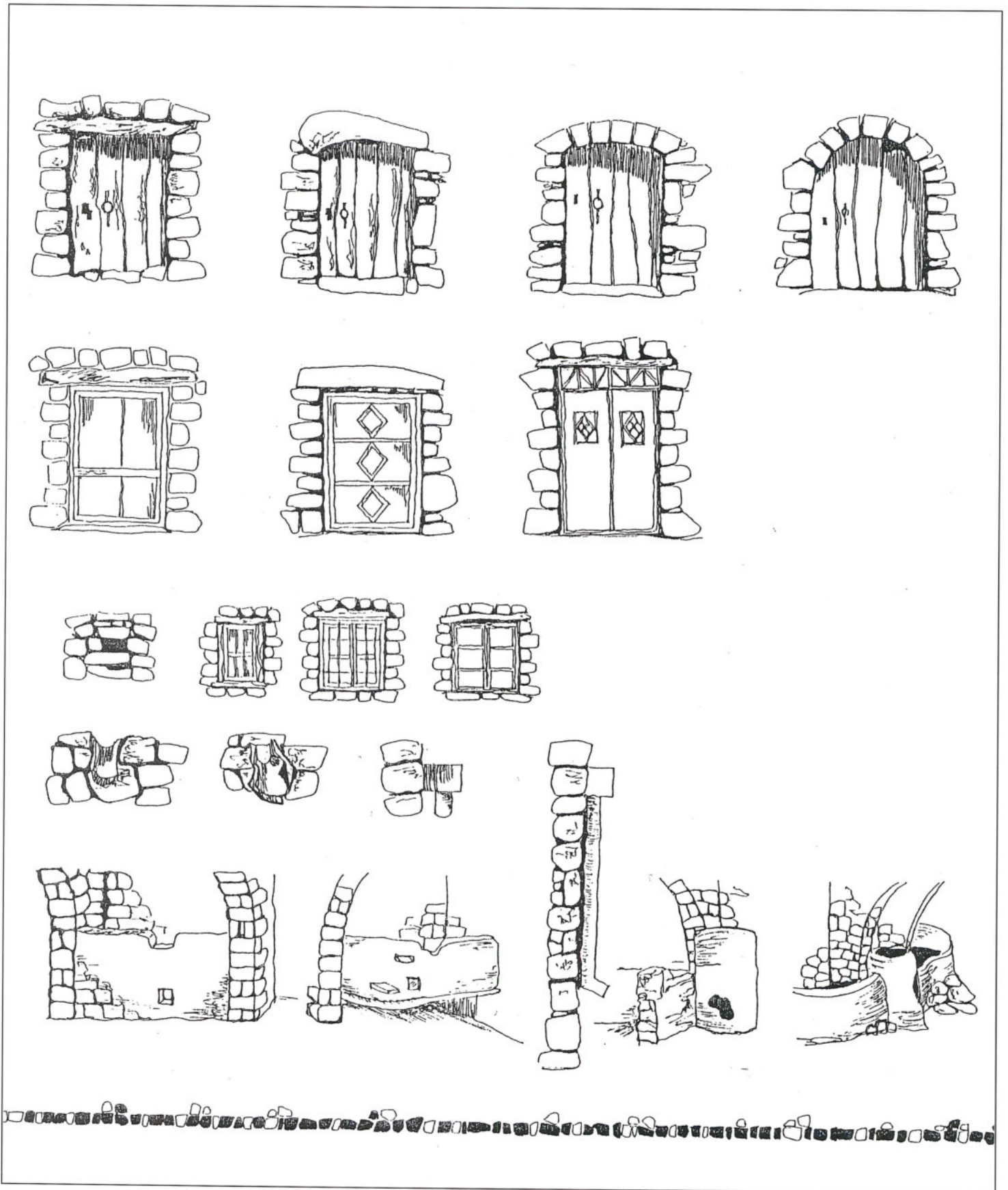One major opening + a small window
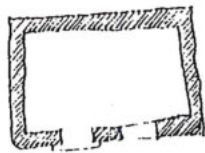
One major opening and a larger window

16. Character.

17. Facade: openings.

18. Openings and details.